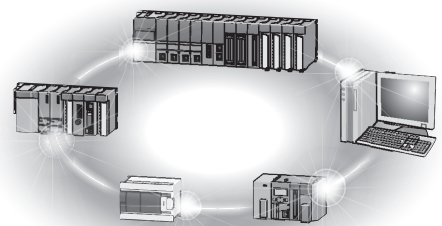


Programmable Controller

## CC-Link System Compact Type Remote I/O Module User's Manual

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## • SAFETY PRECAUTIONS •

(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly.

The precautions given in this manual are concerned with this product. For the safety precautions of the programmable controller system, refer to the user's manual for the CPU module used.

In this manual, the safety precautions are classified into two levels: "⚠ WARNING " and "⚠ CAUTION".



Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.



Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "⚠ CAUTION" may lead to serious consequences.

Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

### [Design Precautions]

#### WARNING

- In the case of a communication failure in the network, the status of the error station will be as follows:
  - (1) All inputs from remote I/O stations are turned off.
  - (2) All outputs from remote I/O stations are turned off.Check the communication status information and configure an interlock circuit in the sequence program to ensure that the entire system will operate safely.  
Incorrect output or malfunction due to a communication failure may result in an accident.
- Outputs may remain on or off due to a failure of a remote I/O module. Configure an external circuit for monitoring output signals that could cause a serious accident.

#### CAUTION

- Use the module in an environment that meets the general specifications in this manual.  
Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.
- Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100mm (3.94 inches) or more between them. Failure to do so may result in malfunction due to noise.

## [Installation Precautions]

### CAUTION

- Do not directly touch any conductive parts of the module. Doing so can cause malfunction or failure of the module.
- Securely fix the module with a DIN rail or mounting screws. Tighten the screws within the specified torque range. Undertightening can cause drop of the screw, short circuit or malfunction. Overtightening can damage the screw and/or module, resulting in drop, short circuit, or malfunction.
- Securely connect the cable connectors. Poor contact may cause malfunction.

## [Wiring Precautions]

### WARNING

- Shut off the external power supply for the system in all phases before wiring.  
Failure to do so may result in electric shock or cause the module to fail or malfunction.

### CAUTION

- Individually ground the FG terminal of the programmable controller with a ground resistance of 100Ω or less. Failure to do so may result in electric shock or malfunction.
- Tighten any unused terminal screws within the specified torque range (0.42 to 0.50N•m). Failure to do so may cause a short circuit due to contact with a solderless terminal.
- Use applicable solderless terminals and tighten them within the specified torque range. If any spade solderless terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.
- Check the rated voltage and terminal layout before wiring to the module, and connect the cables correctly. Connecting a power supply with a different voltage rating or incorrect wiring may cause a fire or failure.
- Tighten the terminal screw within the specified torque range. Undertightening can cause short circuit, fire, or malfunction. Overtightening can damage the screw and/ or module, resulting in drop, short circuit, fire, or malfunction.
- When fixing the CC-Link dedicated cable and the power cable through the pipes for transmission or power supply line of the waterproof type remote I/O module, securely tighten the nuts with a wrench. Undertightening can cause water intrusion, resulting in failure. (AJ65SBTW□-16□ only.)
- Tighten the communication adapter mounting screw or the waterproof cap within the specified torque range. Undertightening can cause short circuit, fire, or malfunction. Overtightening can damage the screw or the cap, resulting in short circuit or malfunction. (AJ65FBTA□-16□ only.)
- This product meets IP67 standard under the condition that the waterproof plugs, waterproof caps, and communication adapter are all installed. (AJ65FBTA□-16□ only.)
- Do not connect the cable to an incorrect connector. The I/O connector, communication connector, and power connector have the same interface. Doing so can cause malfunction or failure of the module. (AJ65FBTA□-16□ only.)



## [Wiring Precautions]

### CAUTION

- Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.
- Place the cables in a duct or clamp them. If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or cables or malfunction due to poor contact.
- Do not install the control lines together with the communication cables, or bring them close to each other. Failure to do so may cause malfunctions due to noise.
- When an overcurrent caused by an error of an external device or a failure of the programmable controller flows for a long time, it may cause smoke and fire. To prevent this, configure an external safety circuit, such as a fuse.
- When disconnecting the cable from the module, do not pull the cable by the cable part. For the cable with connector, hold the connector part of the cable. For the cable connected to the terminal block, loosen the terminal screw. Pulling the cable connected to the module may result in malfunction or damage to the module or cable.

## [Starting and Maintenance Precautions]

### WARNING

- Do not touch any terminal while power is on. Doing so will cause electric shock or malfunction.
- Shut off the external power supply for the system in all phases before cleaning the module or retightening the terminal screws or module mounting screws. Failure to do so may result in electric shock.
- Set the sink/source selector switch after shutting off the power supply at all phases. Failure to do so may result in failures or malfunctions in the opponent device.

### CAUTION

- Do not disassemble or modify the modules. Doing so may cause failure, malfunction, injury, or a fire.
- Do not drop or apply strong shock to the module. Doing so may damage the module.
- Shut off the external power supply for the system in all phases before mounting or removing a module. Failure to do so may cause the module to fail or malfunction.
- After the first use of the product, do not mount/remove the terminal block to/from the module more than 50 times (IEC 61131-2 compliant).
- Before handling the module, touch a conducting object such as a grounded metal to discharge the static electricity from the human body. Failure to do so may cause the module to fail or malfunction.

## [Disposal Precautions]

### CAUTION

- When disposing of this product, treat it as industrial waste.

## • CONDITIONS OF USE FOR THE PRODUCT •

- (1) Mitsubishi programmable controller ("the PRODUCT") shall be used in conditions;
- i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
  - ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

- (2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

MITSUBISHI SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI'S USER, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.

("Prohibited Application")

Prohibited Applications include, but not limited to, the use of the PRODUCT in;

- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

Notwithstanding the above, restrictions Mitsubishi may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTS are required. For details, please contact the Mitsubishi representative in your region.

# REVISIONS

\* The manual number is given on the bottom left of the back cover.

| Print Date | * Manual Number | Revision                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| June 1998  | SH(NA)-4007-A   | First printing                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Nov. 1998  | SH(NA)-4007-B   | <div>Additional model</div> AJ65SBTB1-8D, AJ65SBTC4-16D, AJ65SBTW4-16D, AJ65SBTB1-8T, AJ65SBTC4-16DT, AJ65SBTW4-16DT<br><div>Addition</div> Section 7.3, 7.4<br><div>Correction</div> Section 1.1, 1.2, 1.4, Chapter 2, 4, 5, 6, Section 7.1, Appendix 1                                                                                                                                                                                                                   |
| Apr. 1999  | SH(NA)-4007-C   | <div>Addition</div> Contents, Section 8.2.2                                                                                                                                                                                                                                                                                                                                                                                                                                |
| June 1999  | SH(NA)-4007-D   | <div>Additional model</div> AJ65SBTB1-32T1, AJ65SBTCF1-32D, AJ65SBTCF1-32T, AJ65SBTCF1-32DT                                                                                                                                                                                                                                                                                                                                                                                |
| Nov. 1999  | SH(NA)-4007-E   | <div>Addition</div> Section 1.4, 4.1.6, 4.1.7, 4.4, 5.1.8, 5.1.9, 5.1.10, 5.1.11, 5.3, 6.1, 6.4, 7.4, Appendix 1.6, 1.7, 1.8<br><div>Correction</div> Section 1.1, 1.2, 1.3, 1.5, 1.6, Chapter 2, Chapter 3, Section 4.2.1, 4.3.1, 6.2.1, 6.3.1, Section 7.1, 7.4, 8.2.1, Appendix 1<br><div>Additional model</div> AJ65SBTB1-32DT, AJ65SBTCF1-32D, AJ65SBTCF1-32T, AJ65SBTCF1-32DT, AJ65SBTB2-8A, AJ65SBTB2-16A, AJ65SBTB2-8R, AJ65SBTB2-16R, AJ65SBTB2-8S, AJ65SBTB2-16S |
| Dec. 1999  | SH(NA)-4007-F   | <div>Addition</div> Section 1.2, 4.1.6, 4.1.7, 5.1.8, 5.1.9, 5.1.10, 5.1.11                                                                                                                                                                                                                                                                                                                                                                                                |
| Mar. 2000  | SH(NA)-4007-G   | <div>Additional model</div> AJ65SBTB2N-8A, AJ65SBTB2N-16A, AJ65SBTB3-8D, AJ65SBTB3-16D, AJ65SBTB2-8T, AJ65SBTB2-16T, AJ65SBTB2N-8R, AJ65SBTB-16R, AJ65SBTB2N-8S, AJ65SBTB2N-16S, AJ65SBTB32-8DT, AJ65SBTB32-16DT, AJ65SBTB1-16DT, AJ65SBTB1-16DT1, AJ65SBTB1-32DT1<br><div>Addition</div> Section 4.1.8, 4.1.9, 4.1.10, 4.1.11, Section 5.1.12, 5.1.13, 5.1.14, 5.1.15, 5.1.16, 5.1.17, Section 6.1.1, 6.1.3, 6.1.4, 6.1.5, 6.1.6, Appendix 1.9, 1.10                      |
| Oct. 2000  | SH(NA)-4007-H   | <div>Additional model</div> AJ65VBTCU3-8D1, AJ65VBTCU3-16D1, AJ65VBTCU2-8T, AJ65VBTCU2-16T, AJ65VBTCF1-32DT1<br><div>Addition</div> Section 4.5, 5.4, 6.5, 7.2.3, 7.2.4, Appendix 1.13<br><div>Correction</div> Section 1.1, 1.4, 1.5, Chapter 2, Section 4.3.1, 7.1<br><div>Deletion</div> AJ65SBTB2-8A, AJ65SBTB2-16A, AJ65SBTB2-8R, AJ65SBTB2-16R, AJ65SBTB2-8S, AJ65SBTB2-16S                                                                                          |

| Print Date | * Manual Number | Revision                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Jan. 2001  | SH(NA)-4007-I   | <div>Additional model</div> AJ65FBTA4-16D, AJ65FBTA4-16DE, AJ65FBTA42-16DT, AJ65FBTA42-16DTE<br><div>Addition</div> Section 1.6, 7.4, Appendix 1.14<br><div>Correction</div> Section 1.2, 1.4, 1.5, Chapter 2,3, Section 4.5.2, 5.3.1, 5.4.1, 5.4.2, 6.5.1, 7.1, Appendix 1.13                                                                                                                                                                                                                                                                                                                                             |
| Jul. 2001  | SH(NA)-4007-J   | <div>Additional model</div> AJ65FBTA2-16T, AJ65FBTA2-16TE<br><div>Correction</div> Section 1.2, 1.4, 1.5, 4.1.6, 4.1.7, 4.2.1, 4.2.2, 4.3.1, 6.2.1, 6.2.2, 6.3.1, 6.5.1, 6.6.1, 6.6.2, 7.2.3, Appendix 1.14                                                                                                                                                                                                                                                                                                                                                                                                                |
| Sep. 2001  | SH(NA)-4007-K   | <div>Additional model</div> AJ65SBTB1-16DT2, AJ65SBTB1-32DT2<br><div>Correction</div> Section 1.4, 6.1.1, 8.2.1, Appendix 1.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Jan. 2002  | SH(NA)-4007-L   | <div>Additional model</div> AJ65SBTB1-8T1, AJ65SBTB2-8T1, AJ65SBTB2-16T1, AJ65SBTC1-32T1, AJ65SBTB1-16DT3, AJ65SBTB1-32DT3, AJ65SBTB32-8DT2, AJ65SBTB32-16DT2, AJ65SBTC4-16DT2, AJ65SBTC1-32DT2, AJ65SBTC1-32DT3<br><div>Correction</div> Section 1.3, 1.4, 1.5, 5.5.2, 6.1.1, 7.7, 8.2.1, Appendix 1.13<br><div>Changed item numbers</div> Section 5.1.4 to Section 5.1.9 → Section 5.1.5 to Section 5.1.10<br>Section 5.1.10 to Section 5.1.13 → Section 5.1.13 to Section 5.1.16<br>Section 6.1.5 to Section 6.1.6 → Section 6.1.9 to Section 6.1.10<br>Section 6.2.2 to Section 6.2.3 → Section 6.2.3 to Section 6.2.4 |
| Dec. 2002  | SH(NA)-4007-M   | <div>Correction</div> Section 2, Section 4 to Section 6, Section 8.2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| May 2003   | SH(NA)-4007-N   | <div>Correction</div> Section 1.3, 1.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Jun. 2004  | SH(NA)-4007-O   | <div>Additional model</div> AJ65VBTS3-16D, AJ65VBTS3-32D, AJ65VBTS2-16T, AJ65VBTS2-32T, AJ65VBTS32-16DT, AJ65VBTS32-32DT, AJ65VBTC3-8D, AJ65VBTC3-16D, AJ65VBTC2-8T, AJ65VBTC2-16T, AJ65VBTC32-16DT<br><div>Addition</div> Section 1.6.1 to 1.6.3, 4.5.3 to 4.5.5, 5.4.3 to 5.4.5, 6.5.2 to 6.5.4, 7.8, 7.9 Appendix 1.15, 1.16<br><div>Correction</div> Chapter 1, 2, Section 4.4.1, 4.5, 5.1, 5.4, 6.1, 6.5, 6.2.2, 6.4.1, 6.5.1, 7.2 to 7.4                                                                                                                                                                             |
| Oct. 2004  | SH(NA)-4007-P   | <div>Correction</div> Section 1.1, 1.3 to 1.5, Chapter 2, 3, 4 to 6, Section 7.1, 7.4.2, 7.6, 7.7, 7.9.2, APPENDIX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Print Date | * Manual Number | Revision                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| May 2005   | SH(NA)-4007-Q   | <div>Additional model</div> AJ65VBTCE3-32D, AJ65SBTC4-16DN, AJ65SBTC4-16DE, AJ65VBTCE32-32DT<br><div>Addition</div> Section 4.3.3, 4.4.3, 4.4.4, 6.3.2<br><div>Correction</div> SAFETY PRECAUTION, About Manuals, Compliance with the EMC and Low Voltage Directives, Section 1.1, 1.2, 1.4, 1.5, Chapter 2, Chapter 4 to 6, Section 7.1, 7.5, 7.7, 7.8.2, 7.9.2, Appendix 1.1, 1.2, 1.4, 1.5 to 1.10, 1.14<br><div>Changed item numbers</div> The order of section numbers has been changed in Chapters 4 through 6 |
| Sep. 2005  | SH(NA)-4007-R   | <div>Correction</div> Chapter 4, through 6 have been changed for the external connection diagrams                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Sep. 2006  | SH(NA)-4007-S   | <div>Additional model</div> AJ65SBTB1B-16TE1, AJ65SBTB1-32TE1, AJ65SBTB1-32DTE1<br><div>Addition</div> Section 5.1.13, 5.1.14, 6.1.13<br><div>Correction</div> SAFETY PRECAUTION, Section 1.2, 1.4, Chapter 2, Section 7.1, 8.2.1, 8.2.2, Appendix 1.8<br>F.G symbol is generally revised.<br><div>Changed item numbers</div> Section 5.1.13 → Section 5.1.15<br>Section 5.1.14 → Section 5.1.16<br>Section 5.1.15 → Section 5.1.17<br>Section 5.1.16 → Section 5.1.18                                               |
| Jan. 2007  | SH(NA)-4007-T   | <div>Additional model</div> AJ65SBTB3-16D5, AJ65SBTB1-32D5<br><div>Addition</div> Section 4.1.8, 4.1.11<br><div>Correction</div> Section 1.2, 1.4, Chapter 2, Section 5.1.17, 5.1.18, 8.2.2<br>Chapter 4 to 6 have been changed for specifications and external connection diagrams.<br><div>Changed item numbers</div> Section 4.1.8 → Section 4.1.9<br>Section 4.1.9 → Section 4.1.10                                                                                                                              |

| Print Date | * Manual Number | Revision                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mar. 2007  | SH(NA)-4007-U   | <div>Additional model</div> <p>AJ65DBTB1-32D, AJ65DBTB1-32T1, AJ65DBTB1-32R, AJ65DBTB1-32DT1, AJ65DBTB1-32DR</p> <div>Addition</div> <p>Section 4.1.12, 5.1.19, 5.1.20, 6.1.14, 6.1.15, 7.10, 7.10.1, 7.10.2, 7.10.3, 7.10.4, 7.11, Appendix 1.15</p> <div>Correction</div> <p>Section 1.2, 1.3, 1.4, 1.5, Chapter 2, Section 4.3.1, 5.1.17, 5.1.18, 6.4.1, 6.4.2, 6.6.1, 6.6.2, 7.1</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Sep. 2007  | SH(NA)-4007-V   | <div>Additional model</div> <p>AJ65SBTB32-16DR, AJ65SBTB3-16KD, AJ65SBTB1-32KD, AJ65SBTB32-16KDT2, AJ65SBTB32-16KDT8, AJ65SBTB1-32KDT2, AJ65SBTB1-32KDT8</p> <div>Addition</div> <p>Section 4.1.8, 4.1.11, 6.1.9, 6.1.10, 6.1.11, 6.1.15, 6.1.17, Appendix 1.16</p> <div>Correction</div> <p>Section 1.2, 1.3, 1.4, Chapter 2, Section 6.6.3, 7.1</p> <div>Changed item numbers</div> <p>Section 4.1.8 → Section 4.1.9<br/> Section 4.1.9 → Section 4.1.10<br/> Section 4.1.10 → Section 4.1.12<br/> Section 4.1.11 → Section 4.1.13<br/> Section 4.1.12 → Section 4.1.14<br/> Section 6.1.9 → Section 6.1.12<br/> Section 6.1.10 → Section 6.1.13<br/> Section 6.1.11 → Section 6.1.14<br/> Section 6.1.12 → Section 6.1.16<br/> Section 6.1.13 → Section 6.1.18<br/> Section 6.1.14 → Section 6.1.19<br/> Section 6.1.15 → Section 6.1.20</p> |
| Oct. 2007  | SH(NA)-4007-W   | <div>Additional model</div> <p>AJ65SBTB32-16KDR</p> <div>Addition</div> <p>Section 6.1.12</p> <div>Correction</div> <p>Section 1.2, 1.4, Chapter 2</p> <div>Changed item numbers</div> <p>Section 6.1.12 → Section 6.1.13<br/> Section 6.1.13 → Section 6.1.14<br/> Section 6.1.14 → Section 6.1.15<br/> Section 6.1.15 → Section 6.1.16<br/> Section 6.1.16 → Section 6.1.17<br/> Section 6.1.17 → Section 6.1.18<br/> Section 6.1.19 → Section 6.1.20<br/> Section 6.1.20 → Section 6.1.21</p>                                                                                                                                                                                                                                                                                                                                                |

| Print Date | * Manual Number | Revision                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oct. 2008  | SH(NA)-4007-X   | <div>Additional model</div> AJ65VBTCFJ1-32DT1 <div>Addition</div> Section 1.3.1, 1.3.2, 1.3.3, 1.3.4, 1.3.5, 4.4.1, 4.4.5, 5.2.1, 5.2.2, 5.3.1, 5.3.1, 6.5.3 <div>Correction</div> Section 1.3                                                                                                                                                                                                             |
| Jan. 2010  | SH(NA)-4007-Y   | This manual was revised in accordance with IEC 60617. <div>Additional model</div> AJ65VBTCCE3-16DE, AJ65VBTCCE3-32DE <div>Addition</div> SAFETY PRECAUTION, Section 1.3.1, 1.4, 1.6.2, 1.7, 4.3.2, 4.3.3, 7.1, 7.2.3, 7.2.4, 7.5, 7.7 <div>Correction</div> CONDITIONS OF USE FOR THE PRODUCT, Section 4.3.4, 4.3.5                                                                                        |
| Mar. 2011  | SH(NA)-4007-Z   | This manual was revised in accordance.                                                                                                                                                                                                                                                                                                                                                                     |
| Dec. 2011  | SH(NA)-4007-AA  | <div>Additional model</div> AJ65VBTCCE3-16TE, AJ65VBTCCE3-16DTE, AJ65VBTCCE3-32DTE <div>Addition</div> Section 5.3.3, 6.3.2, 6.3.4 <div>Correction</div> Chapter 3, Section 1.3.1 to 1.3.3, 1.4, 1.5, 4.6.3, 5.1.19, 6.1.1, 6.1.2, 6.1.7 to 6.1.12, 6.1.20, 6.2.1, 6.2.2, 6.3.1, 6.3.3, 6.4.1, 6.4.2, 6.6.1 to 6.6.3, 7.1, 7.2.2, 7.8.2, 8.1 <div>Changed item numbers</div> Section 6.3.2 → Section 6.3.3 |
| Jun. 2012  | SH(NA)-4007-AB  | <div>Addition</div> Appendix 2 <div>Correction</div> ABOUT MANUALS, COMPLIANCE WITH EMC AND LOW VOLTAGE DIRECTIVES, Chapter 2, 3, Section 1.5, 1.6.2, 6.5.3, 7.2.1, 7.6, 7.7, 8.2.1, Appendix 1.11                                                                                                                                                                                                         |
| Nov. 2012  | SH(NA)-4007-AC  | <div>Correction</div> Section 4.6.1, 4.6.2, 5.5.1, 5.6.1, 5.6.2, 6.2.2, 6.5.2, 6.6.1, 6.6.2                                                                                                                                                                                                                                                                                                                |
| Jun. 2013  | SH(NA)-4007-AD  | <div>Correction</div> Section 8.2.1, 8.2.2                                                                                                                                                                                                                                                                                                                                                                 |
| Dec. 2013  | SH(NA)-4007-AE  | <div>Correction</div> Section 4.1.1 to 4.1.14, 4.4.3, 4.4.4, 4.4.6, 4.4.7, 4.5.1, 5.1.1 to 5.1.20, 5.4.3, 5.4.4, 5.5.1, 6.1.1 to 6.1.21, 6.4.1 to 6.4.6, 6.5.1 to 6.5.3                                                                                                                                                                                                                                    |

| Print Date | * Manual Number | Revision                                                                                                                                 |
|------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Oct. 2014  | SH(NA)-4007-AF  | <div>Correction</div> About Manuals, Section 1.3.2, 1.6.2, 1.7, Chapter 2, 4, 5, 6, Section 7.2.1, 7.2.6, 7.5, 7.7, 7.8.2, Appendix 1, 2 |
| Mar. 2017  | SH(NA)-4007-AG  | <div>Correction</div> Section 1.3.2                                                                                                      |
|            |                 |                                                                                                                                          |

Japanese Manual Version SH-3307-AI

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## INTRODUCTION

Thank you for purchasing the MELSEC-A series programmable controllers.

Before using this product, please read this manual carefully and develop familiarity with the functions and performance of the MELSEC-A series programmable controller to handle the product correctly.

Make sure that the end users read this manual.

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## ABOUT MANUALS

The following manuals are also related to this product.

Order each manual as needed, referring to the following list.

### Relevant manuals

| Manual name                                                                                                                                                                                                                                       | Manual number<br>(model code) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| CC-Link System Master/Local Module Type AJ61BT11/A1SJ61BT11 User's Manual<br>System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the<br>AJ61BT11 and A1SJ61BT11<br>(Sold separately)            | IB-66721<br>(13J872)          |
| CC-Link System Master/Local Module Type AJ61QBT11/A1SJ61QBT11 User's Manual<br>System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the<br>AJ61QBT11 and A1SJ61QBT11<br>(Sold separately)        | IB-66722<br>(13J873)          |
| MELSEC-Q CC-Link System Master/Local Module User's Manual<br>System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the<br>QJ61BT11N<br>(Sold separately)                                          | SH-080394E<br>(13JR64)        |
| MELSEC-L CC-Link System Master/Local Module User's Manual<br>System configuration, performance specifications, functions, handling, wiring, and troubleshooting of the<br>LCPU with built-in CC-Link and LJ61BT11<br>(Sold separately)            | SH-080895ENG<br>(13JZ41)      |
| MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Startup)<br>Specifications, procedures before operation, system configuration, wiring, and communication examples<br>of the CC-Link system master/local module<br>(Sold separately) | SH-081269ENG<br>(13JX10)      |
| MELSEC iQ-R CC-Link System Master/Local Module User's Manual (Application)<br>Functions, parameter settings, programming, troubleshooting, I/O signals, and buffer memory of the CC-<br>Link system master/local module<br>(Sold separately)      | SH-081270ENG<br>(13JX19)      |

## COMPLIANCE WITH EMC AND LOW VOLTAGE DIRECTIVES

### (1) Method of ensuring compliance

To ensure that Mitsubishi Electric programmable controllers maintain EMC and Low Voltage Directives when incorporated into other machinery or equipment, certain measures may be necessary. Please refer to one of the following manuals.

- User's manual for the CPU module or head module used
- Safety Guidelines

(This manual is included with the CPU module, base unit, or head module.)

The CE mark on the side of the programmable controller indicates compliance with EMC and Low Voltage Directives.

### (2) Additional measures

To ensure that this product maintains EMC and Low Voltage Directives, please refer to one of the manuals listed under (1).

# MEMO

[illegible]

## 1 OVERVIEW

1

This manual describes the specifications of the compact remote I/O module (hereinafter referred to as the "compact remote I/O module") used as the remote I/O station of the CC-Link system.

## 1.1 Features

The following are the features of the compact remote I/O module:

- (1) The remote I/O module is reduced in size yet retains all the functions of the conventional module

The conventional remote I/O module has furthermore been reduced in size.  
[External dimension (comparative example)]

| Module model name | Compact remote I/O module |                                                                                                                                             |                                                                                          | Conventional remote I/O module |               |               |
|-------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------------------------------|---------------|---------------|
|                   | AJ65SBTB1-8 □             | AJ65SBTB1-16 □<br>AJ65SBTB2-8 □<br>AJ65SBTB2N-8 □<br>AJ65SBTC1-32 □<br>AJ65SBTC4-16 □<br>AJ65SBTCF1-32 □<br>AJ65SBTB3-8 □<br>AJ65SBTB32-8 □ | AJ65SBTB1-32 □<br>AJ65SBTB2-16 □<br>AJ65SBTB2N-16 □<br>AJ65SBTB3-16 □<br>AJ65SBTB32-16 □ | AJ65BTB1-16 □                  | AJ65BTB2-16 □ | AJ65BTC1-32 □ |
| Height            | 50 (1.97)                 |                                                                                                                                             |                                                                                          | 65 (2.56)                      |               |               |
| Width             | 87.3 (3.44)               | 118 (4.65)                                                                                                                                  | 179 (7.04)                                                                               | 151.9 (5.98)                   | 197.5 (7.78)  | 165.0 (6.5)   |
| Depth             | 40 (1.57)                 |                                                                                                                                             |                                                                                          | 46 (1.81)                      |               |               |

Unit :mm (inch)

- (2) More models in the compact remote I/O module lineup

The compact remote I/O modules for the CC-Link system is divided into six types including terminal block type, one-touch connector type, waterproof-type, FCN connector type, spring clamp terminal block type, and sensor connector (e-CON) type.

In addition, the number of I/O points is divided into three types (8 points, 16 points, and 32 points), allowing the user to select a module that is most appropriate for the environment and objective.

- (3) 4-wire compact remote I/O module featuring easy connection of a 4-wire sensor

A 4-wire sensor can be easily connected via the common pin provided on each plug without installing a relay terminal block.

For a 4-wire compact remote I/O module, one sensor is connected to each plug. Therefore, sensors can be exchanged by plug, reducing work steps.

- (4) Terminal block connection provides easy connection of 2-wire and 3-wire sensors or loads

Since the terminal block connection allows connection of 2-wire and 3-wire sensors or loads, common connections are not needed and it makes connection easier.



## (5) Wiring work can be minimized

## (a) Terminal-block module

The number of wiring steps can be dramatically reduced by adopting the use of self-tightening screws on the terminal block.

## (b) One-touch connector module, connector module

The number of wiring steps can be dramatically reduced by adopting use of the pressure-displacement wire-connection method (soldering, peeling of shield and screwing not necessary).

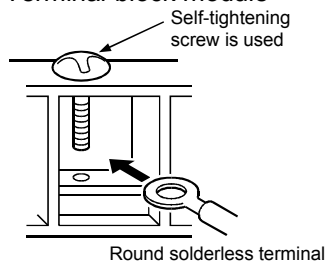
## (c) FCN connector module

The number of wiring steps can be dramatically reduced by adopting 40-pin connector for I/O part.

## (d) Spring clamp terminal block module

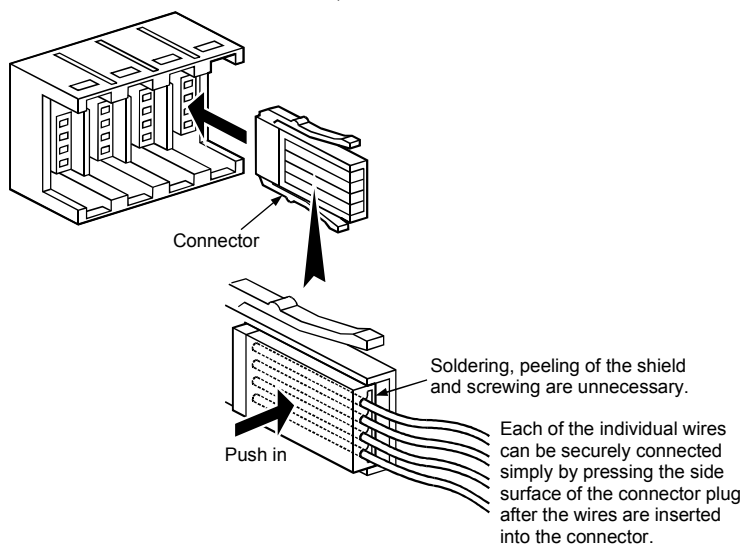
The number of wiring steps can be dramatically reduced by adopting spring clamps (screwing not necessary).

## &lt;Terminal-block module&gt;

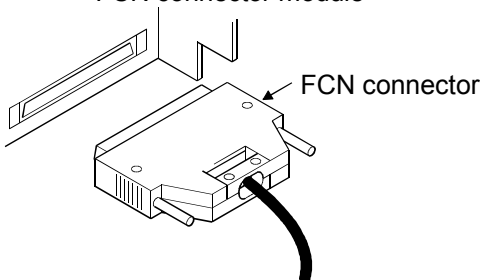


The round solderless terminal can be connected simply by loosening the screw on the terminal block.

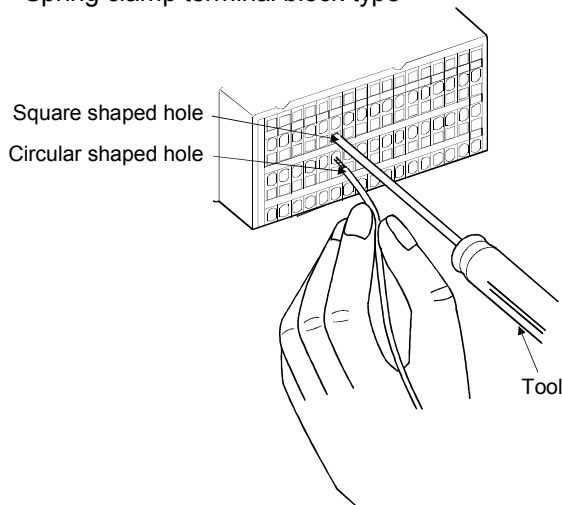
## &lt;One-touch connector module, connector module&gt;



## &lt;FCN connector module&gt;&gt;



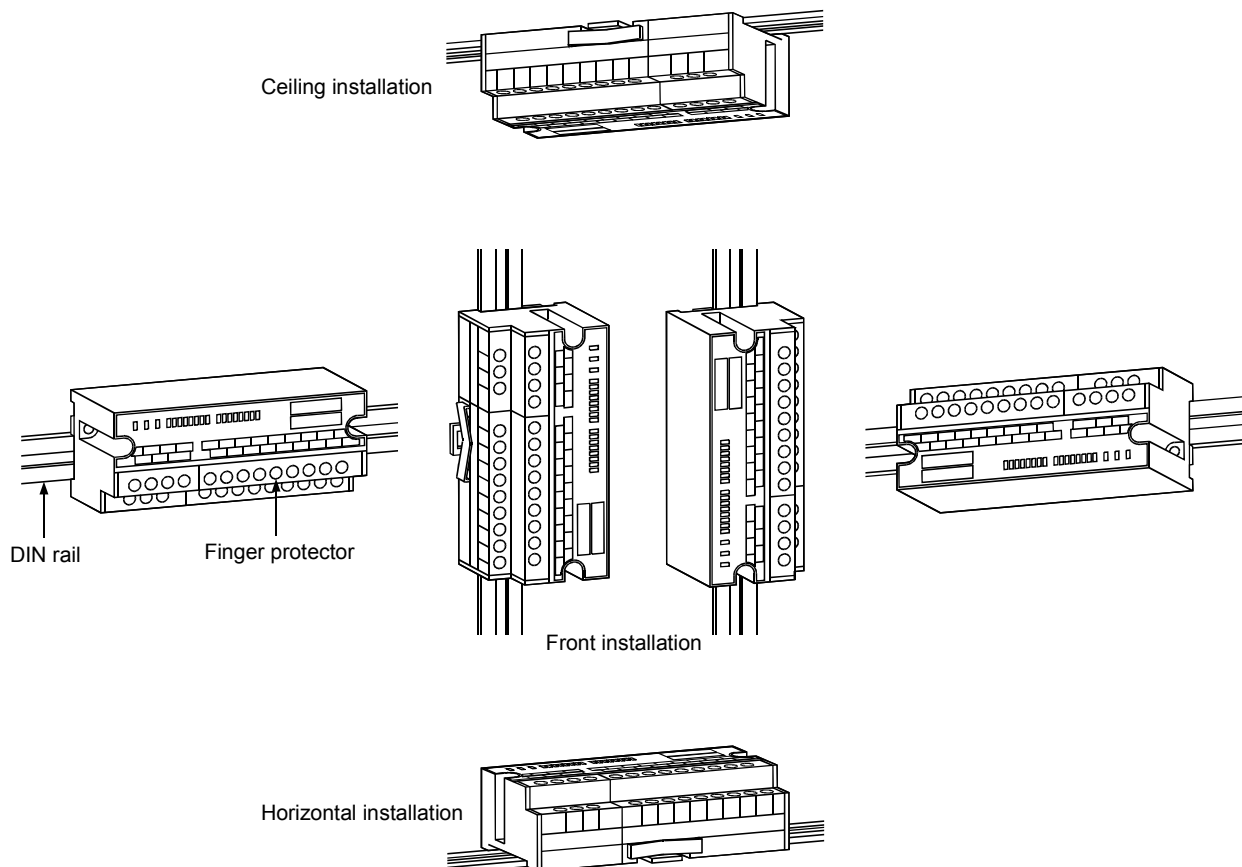
## &lt;Spring clamp terminal block type &gt;



## (6) Waterproof remote I/O modules with improved resistance against water and oil

The waterproof remote I/O module, low profile waterproof remote I/O module adopts a protection structure compatible with IP67, providing even safer usage in areas in which water and oil are present.

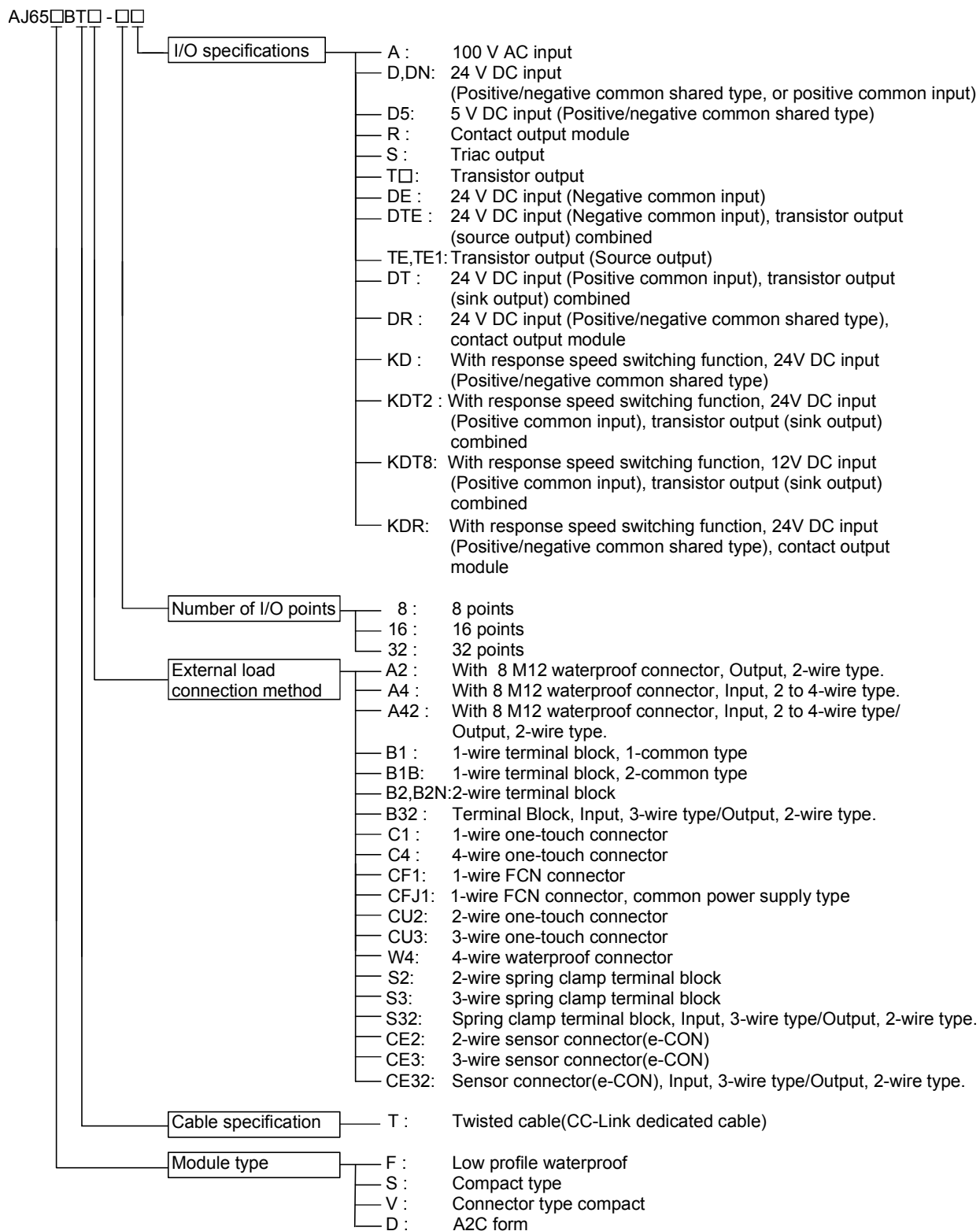
- (7) Up to a maximum of 64 remote I/O modules can be connected  
In the CC-Link system, a maximum of 64 remote I/O modules can be connected per master station.  
Since each remote I/O module occupies 32 points, a maximum of 2048 link points can be set.
- (8) Modules can be exchanged without stopping the CC-Link system  
With the adoption of a two-piece terminal block for the CC-Link cable connection, modules may be exchanged without stopping the CC-Link system.
- (9) Direct installation to the machine is feasible  
The terminal-block remote I/O module may be installed directly to the machine, since the charged area is protected by a finger protector in the upper area of the terminal block.
- (10) The module can be installed in six orientations  
The compact remote I/O module can be installed in six different orientations. (Restrictions may apply to some installation orientations.)  
The module can also be installed using the DIN rail.



- (11) Transistor output module with improved protection functions  
The transistor output module is designed to achieve an even greater degree of module protection by adopting overload protection, overheat protection and overvoltage protection as standard. As a result, the programmable controller system's reliability is further improved.

## 1.2 Identifying the Compact Remote I/O Module Type

The following shows how to identify the type of a compact remote I/O module:



### 1.3 Precautions for use of remote I/O modules

This section describes the precautions for use of remote I/O modules applicable in the CC-Link system and their specifications.

- This is a remote I/O module designed specifically for the CC-Link system.  
Do not connect the module to other data-link systems, such as the MELSECNET/MINI.
- 32 points are assigned per station for a compact remote I/O module.  
For 16-point modules the 16 points in the second half and for 8-points module the 24 points in the second half remain empty but are not usable.
- Do not install the main circuit lines, high-voltage cables, and load cables other than those connected to the programmable controller together.  
If doing so, the remote I/O module (especially, AJ65SBTB1-16D1, AJ65SBTB1-32D1, AJ65VBTCU3-8D1, AJ65VBTCU3-16D1, and AJ65SBTC1-32D1) will be susceptible to noise, surge, and induction.
- When a mechanical contact, such as a relay, is connected to the AJ65SBTB1-16D1, AJ65SBTB1-32D1, AJ65VBTCU3-8D1, AJ65VBTCU3-16D1, or AJ65SBTC1-32D1, chattering may be input as a signal.

#### 1.3.1 Input module

##### (1) Input response time and pulse width

The input module may take noise for inputs due to the signal pulse width.

The pulse width of the AJ65SBTB1-32KD□, AJ65SBTB3-16KD□, or AJ65SBTB32-16KD□ is as shown in the following table depending on the response speed set by the input response speed switching switch. In case of setting the response speed, fully consider the operating environment.

| Response speed setting value (ms) | Minimum value of pulse width that can take noise for inputs (ms) |
|-----------------------------------|------------------------------------------------------------------|
| 0.2                               | 0.006                                                            |
| 1.5                               | 0.8                                                              |
| 5                                 | 3                                                                |
| 10                                | 6                                                                |

When setting “0.2ms” as the response speed under an environment with noise, an input signal line (including a common line) should be 3m or less.

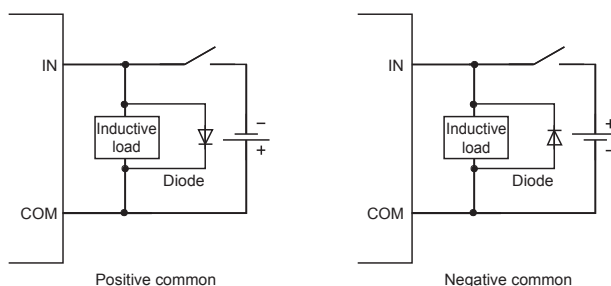
## (2) Precautions when using the DC input module

## (a) Measures against back EMF

When an inductive load is connected, connect a diode to the load in parallel.

Use a diode that meets the following conditions.

- Reverse breakdown voltage is equal to or more than 10 times as large as the circuit voltage.
- Forward current is equal to or more than 2 times as large as the load current.

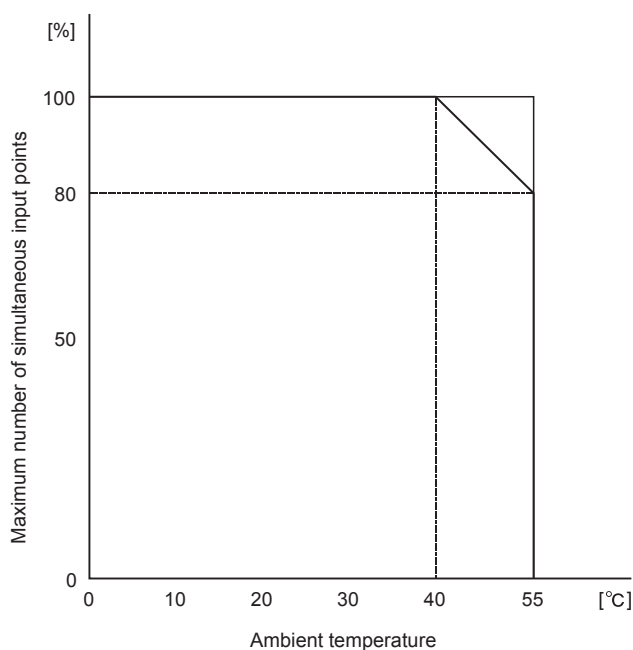


## (3) Precautions when using the AJ65SBTC1-32D or AJ65SBTC1-32D1

The maximum number of simultaneous input points of the AJ65SBTC1-32D or AJ65SBTC1-32D1 varies depending on the ambient temperature.

Refer to the derating curve below

Derating curve for the AJ65SBTC1-32D or AJ65SBTC1-32D1

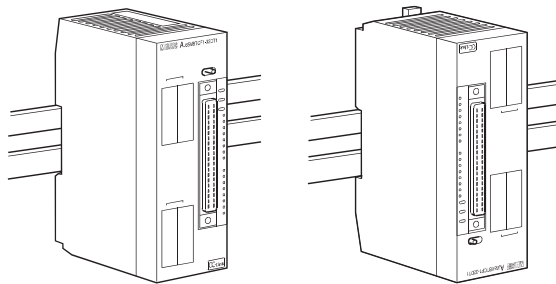


## (4) Precautions when using the AJ65VBTCF1-32DT1

The maximum number of simultaneous input points of the AJ65VBTCF1-32DT1 changes according to the installation orientation.

## 1) Installation orientations without limits

When the module is mounted as shown below, the maximum number of simultaneous input points is not limited.

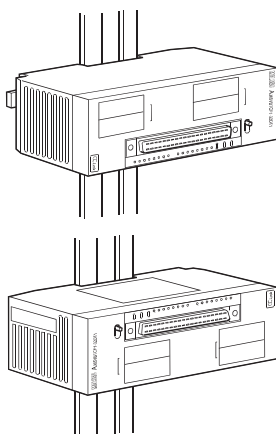


Vertical installation

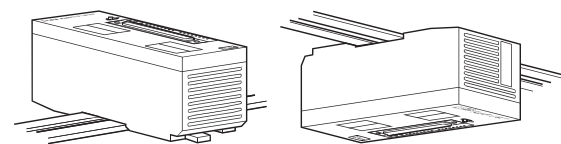
## 2) Installation orientations with limits

When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 60% at an ambient temperature of 55°C.

(Refer to the derating curve.)

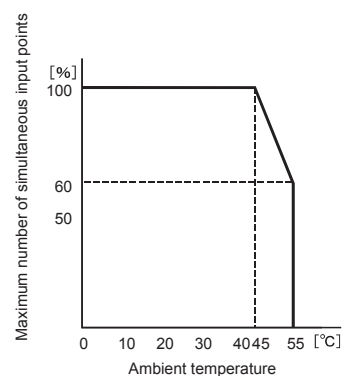


Horizontal installation



Upward installation

Downward installation



Derating curve

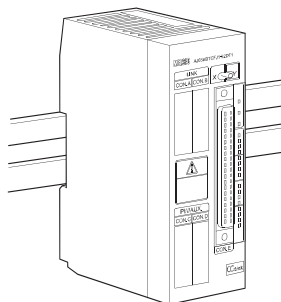
## (5) Precautions when using the AJ65VBTCFJ1-32DT1

The maximum number of simultaneous input points of the AJ65VBTCFJ1-32DT1 changes according to the installation orientation.

## 1) Vertical installation (basic)

When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 65% at an ambient temperature of 55°C.

(Refer to the derating curve (1).)

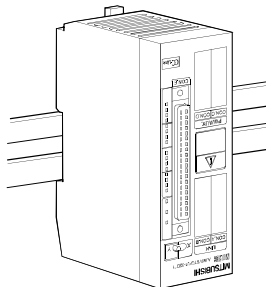


Vertical installation (basic)

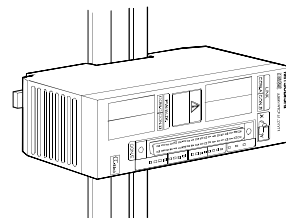
## 2) For installations other than front installation (basic orientation)

When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 40% at an ambient temperature of 55°C.

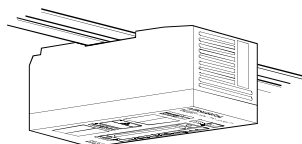
(Refer to the derating curve (2).)



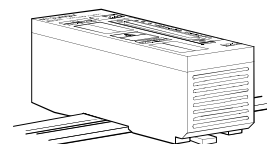
Vertical installation (upside down)



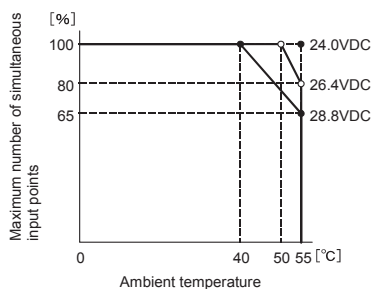
Horizontal installation



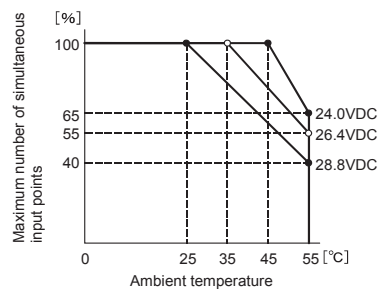
Downward installation



Upward installation



Derating curve (1)



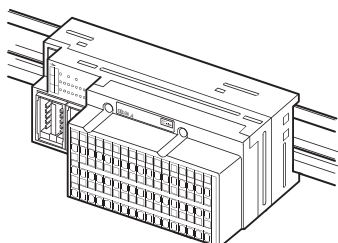
Derating curve (2)

## (6) Precautions when using the AJ65VBTS3-16D

The maximum number of simultaneous input points of the AJ65VBTS3-16D changes according to the installation orientation.

## 1) Installation orientations without limits

When the module is mounted as shown below, the maximum number of simultaneous input points is not limited.

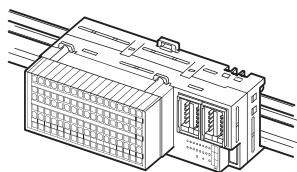


Vertical installation (basic)

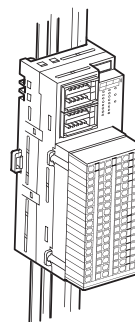
## 2) Installation orientations with limits

When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 75% at an ambient temperature of 55°C.

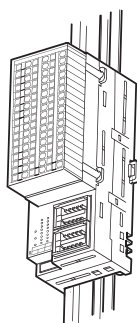
(Refer to the derating curve)



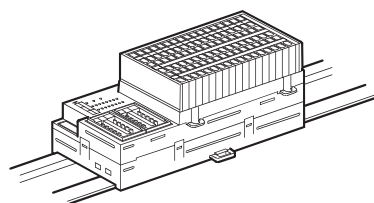
Vertical installation (upside down)



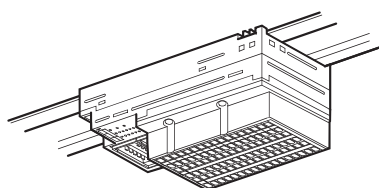
Horizontal installation (basic)



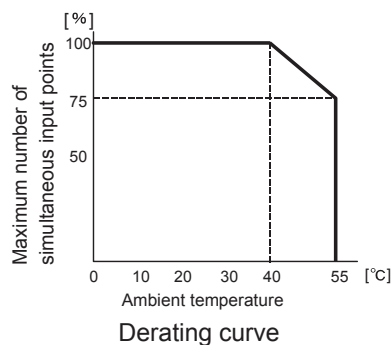
Horizontal installation (upside down)



Upward installation



Downward installation

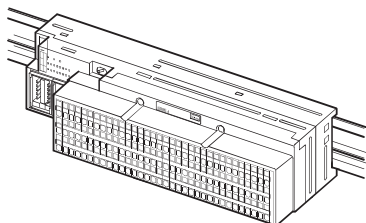




- (7) Precautions when using the AJ65VBTS3-32D or AJ65VBTS32-32DT  
The maximum number of simultaneous input points of the AJ65VBTS3-32D or AJ65VBTS32-32DT changes according to the installation orientation.

1) Installation orientations without limits

When the module is mounted as shown below, the maximum number of simultaneous input points is not limited.

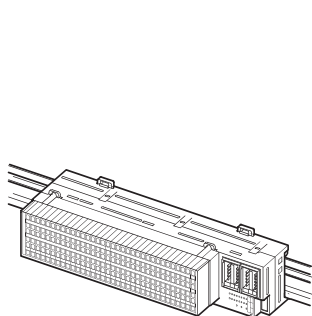


Vertical installation (basic)

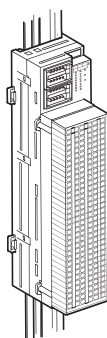
2) Installation orientations with limits

When the module is mounted as shown below, the maximum number of simultaneous input points of the AJ65VBTS3-32D is reduced to 69% (11 points/common) at an ambient temperature of 55°C. (Refer to the derating curve (1).)

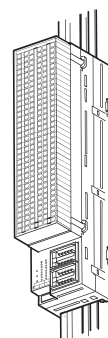
That of the AJ65VBTS32-32DT is reduced to 75%. (Refer to the derating curve (2).)



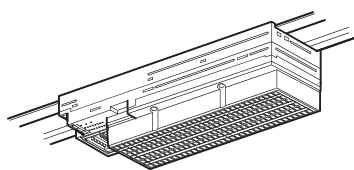
Vertical installation  
(upside down)



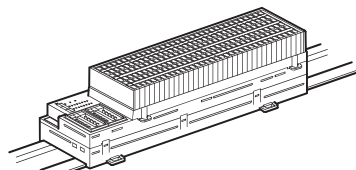
Horizontal installation  
(basic)



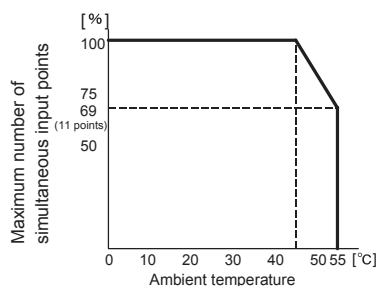
Horizontal installation  
(upside down)



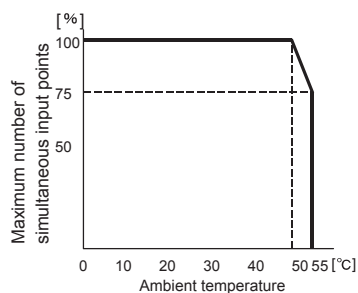
Downward installation



Upward installation



Derating curve (1)



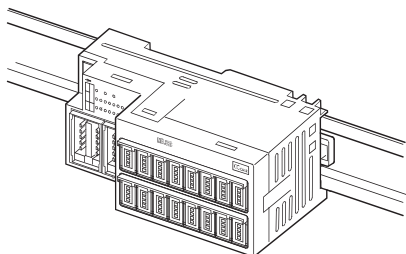
Derating curve (2)

## (8) Precautions when using the AJ65VBTCE3-16D or AJ65VBTCE3-16DE

The maximum number of simultaneous input points of the AJ65VBTCE3-16D or AJ65VBTCE3-16DE changes according to the installation orientation.

## 1) Installation orientations without limits

When the module is mounted as shown below, the maximum number of simultaneous input points is not limited.

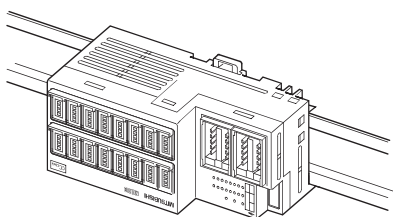


Vertical installation (basic)

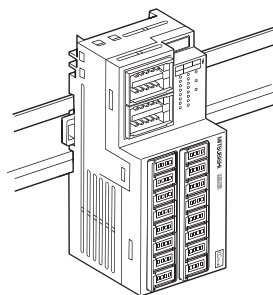
## 2) Installation orientations with limits

When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 62.5% at an ambient temperature of 55°C.

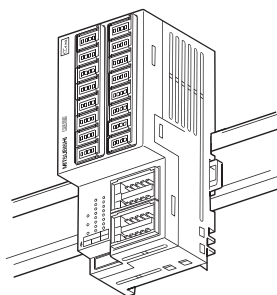
(Refer to the derating curve.)



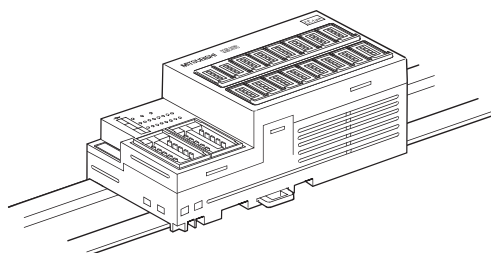
Vertical installation (upside down)



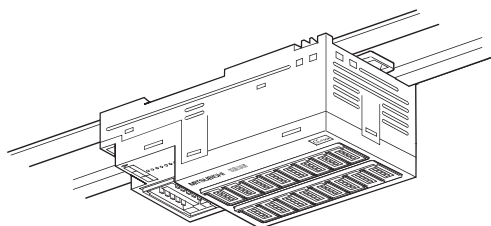
Horizontal installation (basic)



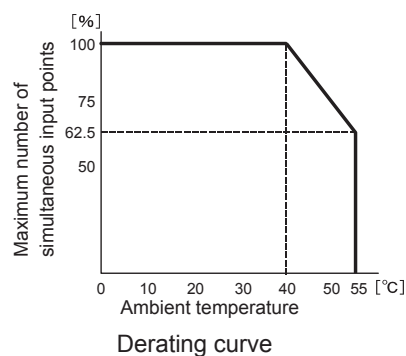
Horizontal installation (upside down)



Upward installation



Downward installation

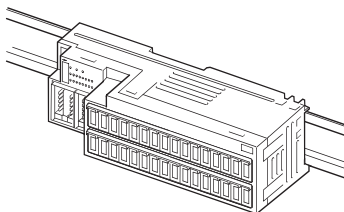


## (9) Precautions when using the AJ65VBTC3-32D or AJ65VBTC3-32DE

The maximum number of simultaneous input points of the AJ65VBTC3-32D or AJ65VBTC3-32DE changes according to the installation orientation.

## 1) Installation orientations without limits

When the module is mounted as shown below, the maximum number of simultaneous input points is not limited.

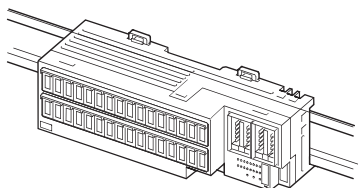


Vertical installation (basic)

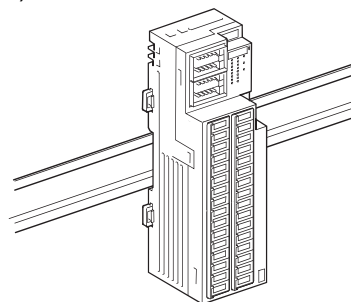
## 2) Installation orientations with limits

When the module is mounted as shown below, the maximum number of simultaneous input points is reduced to 75% at an ambient temperature of 55°C.

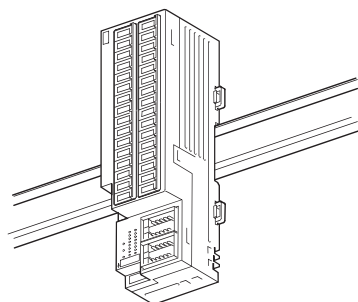
(Refer to the derating curve.)



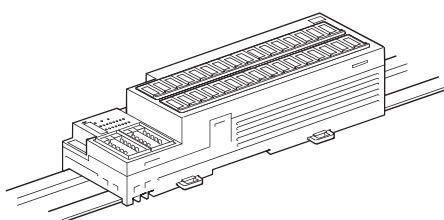
Vertical installation (upside down)



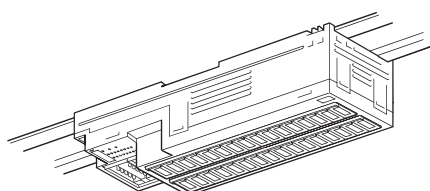
Horizontal installation (basic)



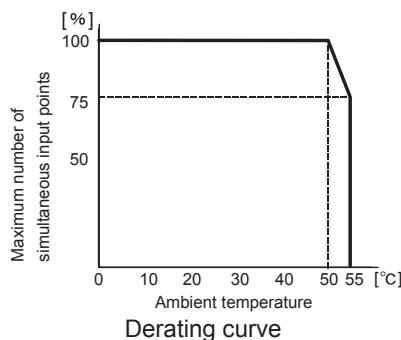
Horizontal installation (upside down)



Upward installation



Downward installation

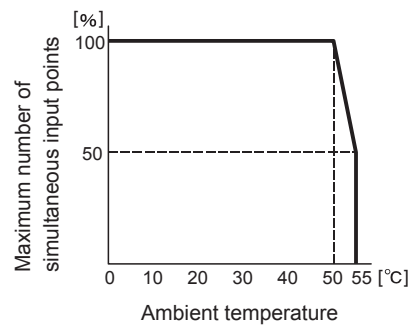


## (10) Precautions when using the AJ65SBTB1-32KD or AJ65SBTB1-32KDT2

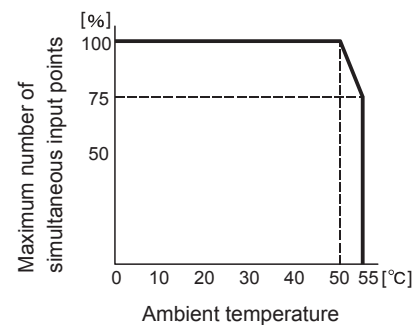
The maximum number of simultaneous input points of the AJ65SBTB1-32KD or AJ65SBTB1-32KDT2 changes according to the input voltage and ambient temperature.

If the input voltage is higher than 26.4V, the maximum number of simultaneous input points is as shown in the following figures.

(If the input voltage is 26.4V or lower, derating is not required.)



AJ65SBTB1-32KD derating curve



AJ65SBTB1-32KDT2 derating curve

## (11) Precautions when using a 3-wire or 4-wire module

When supplying power from a 3-wire or 4-wire module to an external device, such as a sensor, total current must be equal to or less than the value of "supply current for connected device" specified for the module.

## 1.3.2 Output module

## (1) Maximum switching frequency when the module drives inductive load

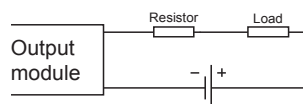
The output must be on for one second or longer and off for one second or longer.

## (2) Load for connection

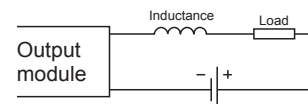
When connecting a counter or timer that has a DC-DC converter to a transistor output module (maximum load current 0.1A) as a load, select an output module whose maximum load current is larger than inrush current of the load.

Selecting an output module by average current of the load may cause a failure of the module because inrush current flows at a constant frequency at power-on or during operation due to the connected load.

If an output module needs to be selected by average current of the load, take either of the following actions to reduce an influence from inrush current.



- Connecting a resistor to the load in series



- Connecting an inductor to the load in series

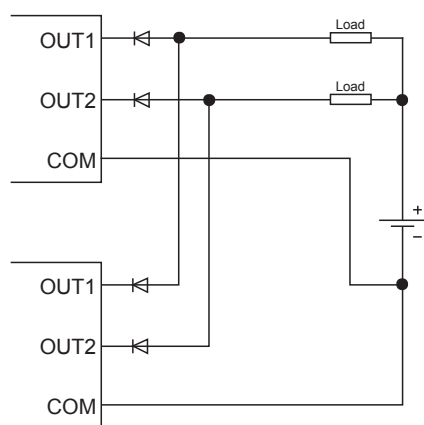
## (3) Precaution for using the transistor output module

## (a) Action against reverse current

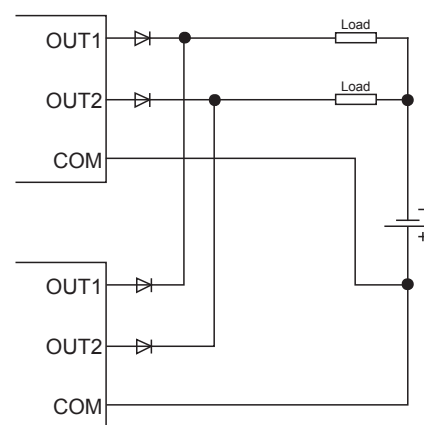
If a transistor output module is wired as shown below, reverse current flows in an output element, causing a failure of the element.

When wiring a transistor output module, connect a diode as shown below.

- When connecting transistor output modules in parallel

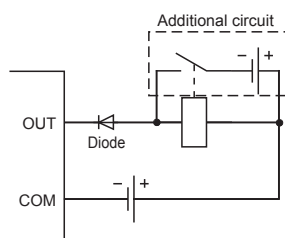


Sink type

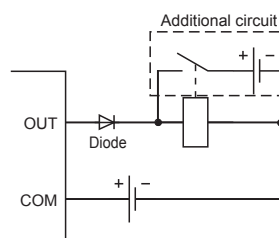


Source type

- When incorporating an additional circuit parallel to a transistor output module



Sink type

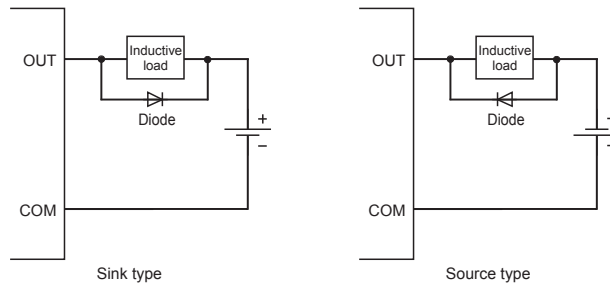


Source type

## (b) Measures against back EMF

When an inductive load is connected, connect a diode to the load in parallel. Use a diode that meets the following conditions.

- Reverse breakdown voltage is equal to or more than 10 times as large as the circuit voltage.
- Forward current is equal to or more than 2 times as large as the load current.



## (4) Modules that require an external short-circuit protection circuit

The following modules have no short-circuit protection function. Configure a short-circuit protection circuit external to the programmable controller when they are used.

- |                     |                     |                    |                    |
|---------------------|---------------------|--------------------|--------------------|
| • AJ65SBTB1-8T1     | • AJ65SBTB2-8T1     | • AJ65SBTB1-16T1   | • AJ65SBTB2-16T1   |
| • AJ65SBTB1B-16TE1  | • AJ65VBTS2-16T     | • AJ65SBTB1-32T1   | • AJ65SBTB1-32TE1  |
| • AJ65DBTB1-32T1    | • AJ65VBTS2-32T     | • AJ65SBTC1-32T1   |                    |
| • AJ65SBTB32-8DT2   | • AJ65SBTB1-16DT2   | • AJ65SBTB1-16DT3  | • AJ65SBTB32-16DT2 |
| • AJ65SBTB32-16KDT2 | • AJ65SBTB32-16KDT8 | • AJ65SBTB1-32DT2  | • AJ65SBTB1-32KDT2 |
| • AJ65SBTB1-32DT3   | • AJ65SBTB1-32KDT8  | • AJ65SBTB1-32DTE1 | • AJ65DBTB1-32DT1  |
| • AJ65VBTS32-16DT   | • AJ65VBTS32-32DT   | • AJ65SBTC4-16DT2  | • AJ65SBTC1-32DT2  |
| • AJ65SBTC1-32DT3   |                     |                    |                    |

## (5) Precautions when using a 3-wire module

When supplying power from a 3-wire module to an external device, such as a sensor, the total current value must be equal to or less than the value of "supply current for connected device" specified for the module.

## (6) Precautions for using the contact output module

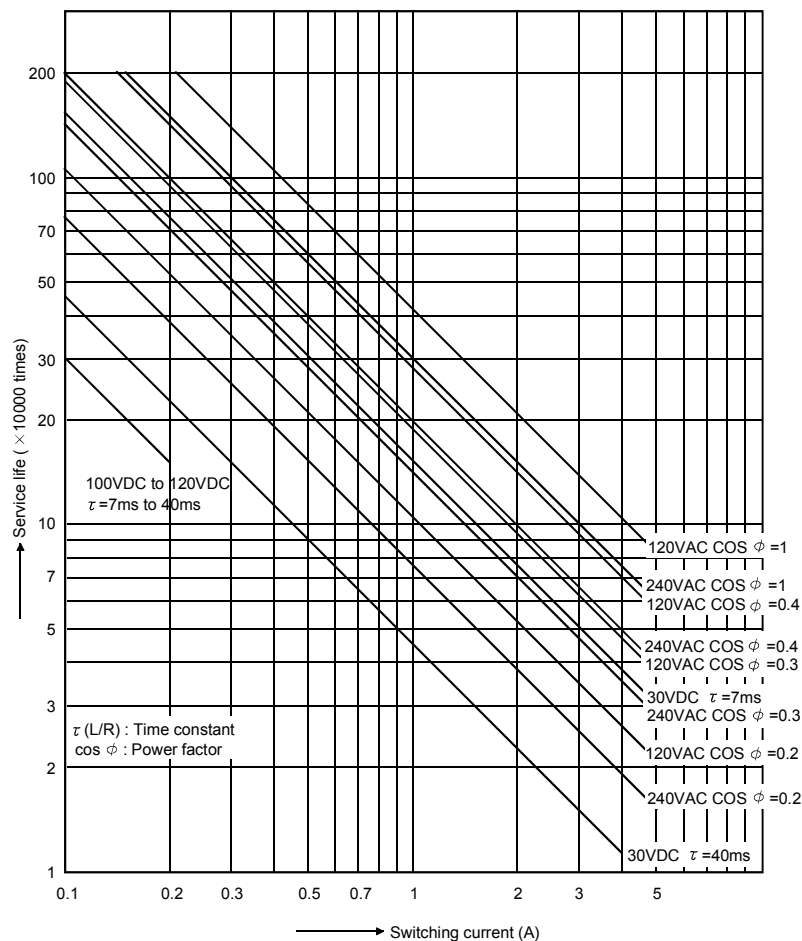
When using the contact output module, consider the following.

- Relay life
- Effects to relay life due to connected load
- Measures against back EMF

## (a) Relay life

Applicable module: AJ65SBTB2N-8R, AJ65SBTB2N-16R,  
AJ65DBTB1-32R, AJ65DBTB1-32DR

The relay life depends on the operating environment. Select a module according to the operating environment. The relay lives shown below are the actual service values, not the guaranteed values. Replace the module well in advance since the actual switching life may be shorter than the one shown below.



| Operating environment                       | Switching life     |
|---------------------------------------------|--------------------|
| Rated switching voltage/current, rated load | 100 thousand times |
| 200VAC 1.5A, 240VAC 1A (COS $\phi$ =0.7)    | 100 thousand times |
| 200VAC 1A, 240VAC 0.5A (COS $\phi$ =0.35)   | 100 thousand times |
| 24VDC 1A, 100VDC 0.1A (L/R=7ms)             | 100 thousand times |

## POINT

When using the module for the application in which the relay contact is frequently switched, the relay life span should be considered. Therefore, it is recommended to use a triac output module.

## (b) Effects to relay life due to connected load

The actual relay life may be significantly shortened compared to the one shown above, depending on the type of a load connected and the characteristics of inrush current.

Also, the inrush current may cause contact welding.

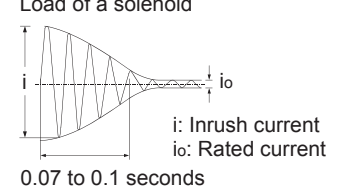
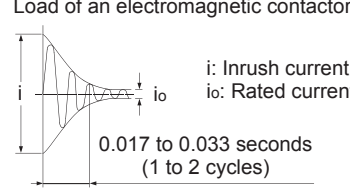
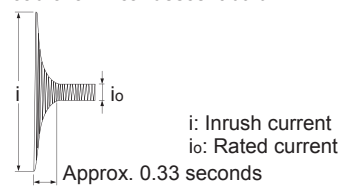
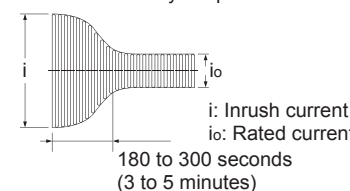
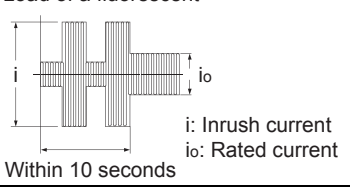
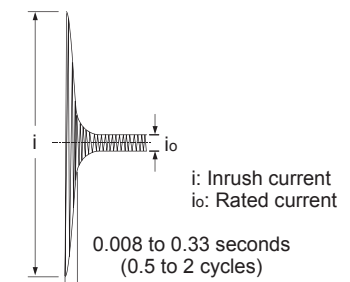
Take the following measures to prevent shortening of the relay life and the contact welding.

- Select a load so that the inrush current will be within the rated current of the module.
- Connect an external relay that can withstand the inrush current.

The following table shows the relation between the road and the inrush current.

Select a load so that the inrush current ( $i$ ) and the rated current ( $i_o$ ) will be within the rated switching current specified for the output module used.

The inrush current may flow for a longer time depending on the load.

| Load type       | Signal waveform diagram                                                                                                                                                                                          | Inrush current ( $i$ )/rated current ( $i_o$ ) | Signal waveform diagram                                                                                                                                                                                                 | Inrush current ( $i$ )/rated current ( $i_o$ ) |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Inductive load  | Load of a solenoid<br><br>$i$ : Inrush current<br>$i_o$ : Rated current<br>0.07 to 0.1 seconds                                | Approx. 10 to 20 times                         | Load of an electromagnetic contactor<br><br>$i$ : Inrush current<br>$i_o$ : Rated current<br>0.017 to 0.033 seconds (1 to 2 cycles) | Approx. 3 to 10 times                          |
|                 |                                                                                                                                                                                                                  |                                                |                                                                                                                                                                                                                         |                                                |
| Lamp load       | Load of an incandescent bulb<br><br>$i$ : Inrush current<br>$i_o$ : Rated current<br>Approx. 0.33 seconds                     | Approx. 3 to 10 times                          | Load of a mercury lamp<br><br>$i$ : Inrush current<br>$i_o$ : Rated current<br>180 to 300 seconds (3 to 5 minutes)                  | Approx. 3 times <sup>*1</sup>                  |
|                 | Load of a fluorescent<br><br>$i$ : Inrush current<br>$i_o$ : Rated current<br>Within 10 seconds                               |                                                | —                                                                                                                                                                                                                       |                                                |
| Capacitive load | Capacitive load <sup>*2</sup><br><br>$i$ : Inrush current<br>$i_o$ : Rated current<br>0.008 to 0.33 seconds (0.5 to 2 cycles) | Approx. 20 to 40 times                         | —                                                                                                                                                                                                                       | —                                              |



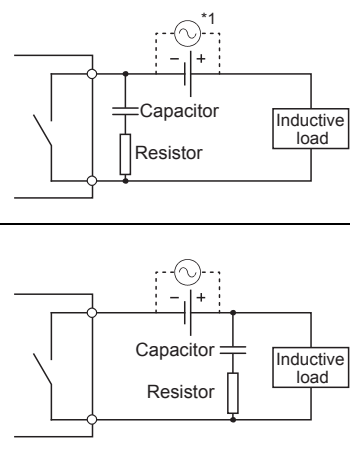
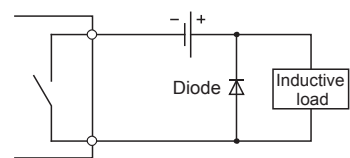
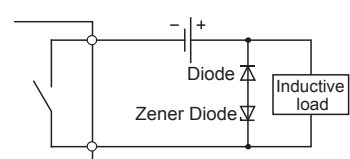
## (c) Measures against back EMF

Configure a contact protection circuit for extending the contact life, preventing noise when the contact is cut off, and suppressing the generation of carbide and nitric acid due to arc discharge.

An Incorrect contact protection circuit may cause contact welding.

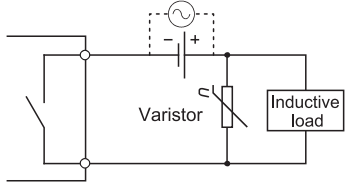
Also, when using the contact protection circuit, the recovery time may be long.

The following table shows the representative examples of the contact protection circuit.

| Circuit example                                                                                                            | Method for selecting elements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Remarks                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Capacitor + Resistor method (CR method)  | Refer to the following for constants of the capacitor and resistor. Note that the following values may differ depending on a nature of the load and a variation of characteristics of it. <ul style="list-style-type: none"> <li>• Capacitor 0.5 to 1 (<math>\mu</math>F) against contact current of 1A</li> <li>• Resistor 0.5 to 1 (<math>\Omega</math>) against contact voltage of 1V</li> </ul> Use a capacitor whose withstand voltage is 200 to 300V. In AC circuit, use a capacitor having no polarity. | If a load is from a relay or solenoid, the recovery time delays.<br>A capacitor suppresses electric discharge while a contact is off, and a resistor restricts a flow of current while a contact is on. |
| Diode method                            | Use a diode that meets both conditions shown below. <ul style="list-style-type: none"> <li>• Reverse breakdown voltage is equal to or more than 10 times as large as the circuit voltage.</li> <li>• The forward current is equal to or more than 2 times as large as the load current.</li> </ul>                                                                                                                                                                                                             | The recovery time is later than the CR method.                                                                                                                                                          |
| Diode + Zener diode method              | Use zener voltage for the zener diode equal to or more than the power supply voltage.                                                                                                                                                                                                                                                                                                                                                                                                                          | The diode method is effective when the recovery time is too late.                                                                                                                                       |

\*1: When using AC power, impedance of CR must be larger enough than that of the load. (prevention of a malfunction due to leak current from the CR)

(To the next page)

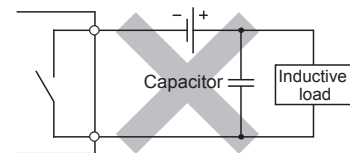
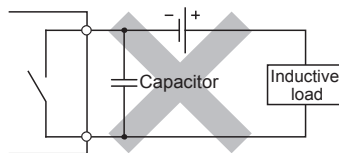
| Circuit example                                                                                      | Method for selecting elements                                                                                                                                                                                                                                                                   | Remarks                            |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Varistor method<br> | Select a cut voltage ( $V_c$ ) for the varistor to meet the following condition.<br>• $V_c > \text{power voltage} \times 1.5(\text{V})$<br>• $V_c > \text{power voltage} \times 1.5(\text{V}) \times \sqrt{2}$ (When using AC power)<br>This method is not effective when the $V_c$ is too high | The recovery time delays slightly. |

### POINT

(1) Avoid providing contact protection circuits shown below.

These circuits are effective for preventing an arc at shut-off. However, the contact welding may occur because the charge current flows to capacitor when the contact turns on or off.

A DC inductive load is usually harder for switching than a resistor load, but if a proper protection circuit is configured, the performance will be similar to the resistor load.



(2) A protection circuit must be provided closely to a load or contact (module). If their distance is far, the protection circuit may not be effective. Appropriate distance is within 50cm.

(7) Precautions for using the triac output module

Because of characteristics of a triac, a sudden change of voltage or current may cause unstable operations of a triac used for the triac output module.

Whether the voltage or current change causes a problem differs depending on an individual part (each triac), thus check the following when using the triac output module.

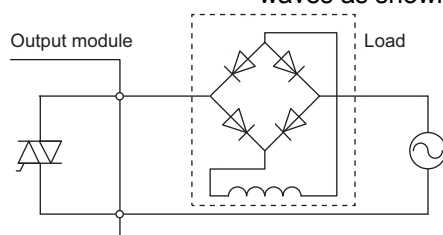
(a) Checking of the load current

When the current consumption is equal to or smaller than the minimum load current and the margin is low by using an inductive load such as a solenoid valve, a triac may not turn on or off properly. In that case, an action such as connecting a bleeder resistance is required.

For detail on actions, refer to Section 8.2.2.

(b) Precautions on a full-wave rectifier load

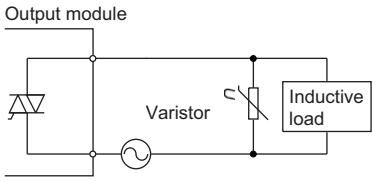
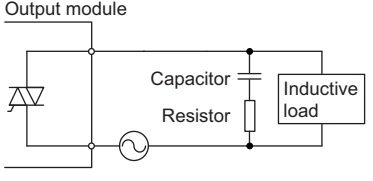
The load current of a full-wave rectifier load forms waves similar to rectangular waves as shown below.



A triac may not operate properly if the current forms rectangular waves associated with sudden current changes. To avoid it, use a load with which the load current does not form rectangular waves.

(c) Measures for connecting an inductive load

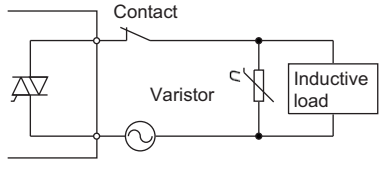
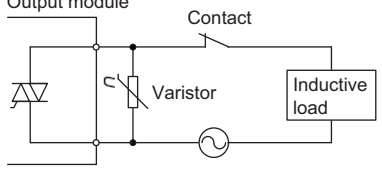
To connect an inductive load, take measures to reduce noise to the side where the load is connected as shown below.

| Circuit example                                                                                                                    | Method for selecting elements                                                                                                                                                                                                                                                                                                                                                                                                                                        | Remarks                                                          |
|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Varistor method<br><br>                           | Select a cut voltage ( $V_c$ ) for the varistor to meet the following condition.<br>• $V_c > \text{Power supply voltage} \times 1.5(V) \times \sqrt{2}$<br>This method is not effective when the $V_c$ is too high.                                                                                                                                                                                                                                                  | The recovery time delays slightly.                               |
| Capacitor + Resistor method (CR method)<br><br> | Refer to the following for constants of the capacitor and resistor. Note that the following values may differ depending on a nature of the load and a variation of characteristics of it.<br>• Capacitor: 0.5 to 1 ( $\mu\text{F}$ ) against load current of 1A<br>• Resistor: 0.5 to 1( $\Omega$ ) against power supply voltage of 1V<br>Use a capacitor whose withstand voltage is equal to or more than the rated voltage.<br>Use a capacitor having no polarity. | If a load is from a relay or solenoid, the recovery time delays. |

(d) Measures for connecting an inductive load (when installing a contact between the load and the output terminal)

To install a contact (such as an interlock) between the load and the output terminal, take measures to reduce noise as shown below.

Though measures (varistor method, capacitor + resistor method) are normally taken to the load side, in some cases, it is more efficient to take the measures to the module side considering the contact effect.

| Circuit example                                                                                                                                                                                                                                                                                                                                                            | Method for selecting elements                                                                                                                                                                                                                                                                                   | Remarks                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <p><b>Varistor method</b></p> <ul style="list-style-type: none"> <li>• Measure taken to the load side</li> </ul>  <ul style="list-style-type: none"> <li>• Measure taken to the module side</li> </ul>  | <p>Select a cut voltage (<math>V_c</math>) for the varistor to meet the following condition.</p> <ul style="list-style-type: none"> <li>• <math>V_c &gt; \text{Power supply voltage} \times 1.5(V) \times \sqrt{2}</math></li> </ul> <p>This method is not effective when the <math>V_c</math> is too high.</p> | <p>The recovery time delays slightly.</p> |

## 1.3.3 Modules with protection functions

This section describes the protection functions of the following modules.

- (1) Modules with overload protection function, overvoltage protection function, and overheat protection function

|                     |                                                                                                                                                                                                                                             |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output module       | AJ65SBTB1-8T, AJ65SBTB1-16T, AJ65SBTB1-32T, AJ65SBTB2-8T, AJ65SBTB2-16T, AJ65SBTC1-32T, AJ65SBTCF1-32T, AJ65VBTCU2-8T, AJ65VBTCU2-16T, AJ65VBTCCE2-8T, AJ65VBTCCE2-16T                                                                      |
| I/O combined module | AJ65SBTB1-16DT, AJ65SBTB1-32DT, AJ65SBTB1-16DT1, AJ65SBTB1-32DT1, AJ65SBTB32-8DT, AJ65SBTB32-16DT, AJ65SBTC4-16DT, AJ65SBTC1-32DT, AJ65SBTC1-32DT1, AJ65SBTW4-16DT, AJ65SBTCF1-32DT, AJ65VBTCF1-32DT1, AJ65VBTCCE32-16DT, AJ65VBTCCE32-32DT |

- (2) Modules with overload protection function and overheat protection function

|                     |                                                                                |
|---------------------|--------------------------------------------------------------------------------|
| Output module       | AJ65SBTB1-8TE, AJ65SBTB1-16TE, AJ65FBTA2-16T, AJ65FBTA2-16TE, AJ65VBTCCE3-16TE |
| I/O combined module | AJ65FBTA42-16DT, AJ65FBTA42-16DTE, AJ65VBTCCE3-16DTE, AJ65VBTCCE3-32DTE        |

| Function                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Common to protection functions  | <ol style="list-style-type: none"> <li>1. When an overcurrent continues to flow and generates overheat, overheat protection is activated.</li> <li>2. The functions are provided for protecting only the circuits inside the module. A load error may deteriorate output elements or discolour the module case or printed circuit board due to increase in temperature within the module. If a load error occurs, turn off the corresponding output immediately and eliminate the error cause.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Overload protection function    | <ol style="list-style-type: none"> <li>1. Protection is activated under an overload condition of 1 to 3A per point.</li> <li>2. Protection is automatically reset when the load current drops to the rated value.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Overvoltage protection function | <ol style="list-style-type: none"> <li>1. This function protects elements from an abrupt surge caused when a coil load is used.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Overheat protection function    | <ol style="list-style-type: none"> <li>1. The protection of the following modules is activated in units of two points: AJ65SBTB1-8TE, AJ65SBTB1-16TE, AJ65VBTCCE3-16TE, AJ65VBTCCE3-16DTE, AJ65VBTCCE3-32DTE<br/>(For example, when protection is activated for either Y0 or Y1 output signals, Y0 and Y1 simultaneously turn off. When the overheat condition continues, the heat is conducted to other loads and the corresponding protections may also be activated.)<br/>For the modules except the above, the protection is activated in units of one point.</li> <li>2. If protection is activated while an output signal is on, the voltage oscillates between 0V and the load voltage. When the load voltage is 24VDC, the average voltage during oscillation is approximately 7VDC. (The voltage does not oscillate when an output signal is off.)<br/>Use an external load that operates at higher than 7VDC.</li> <li>3. Protection is automatically reset when the temperature falls below the preset value.</li> </ol> |

## 1.4 Specification List

Specification list for each compact remote I/O module is shown below.

## (1) Input module

| Model           | Input format                        | No. of points per module                                 | Insulation method       | Rated input voltage     | Input current           | Operation voltage       |              | Input response time |                         | Input display | External connection   | Common connection     | Internal current consumption | External dimensions | Reference   |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
|-----------------|-------------------------------------|----------------------------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------|---------------------|-------------------------|---------------|-----------------------|-----------------------|------------------------------|---------------------|-------------|----------------------------|----------------------------|--------------------|---------------|----------------------------|-----------------------|--------------------|------|-------|-------|-------|
|                 |                                     |                                                          |                         |                         |                         | ON voltage              | OFF voltage  | OFF → ON            | ON → OFF                |               |                       |                       |                              |                     |             |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
| AJ65SBTB1-8D    | DC input (Positive/Negative common) | 8 points                                                 | Photocoupler insulation | 24VDC                   | Approx. 7mA             | 14V or more             | 6V or less   | 1.5ms or less       |                         | LED display   | 1-wire terminal block | 8 points 1 common     | 30mA                         | * 1                 | 4.1.3       |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
| AJ65SBTB1-16D   |                                     | 16 points                                                |                         |                         | Approx. 5mA             | 15V or more             | 3V or less   | 0.2ms or less       |                         |               |                       | 16 points 1 common    | 35mA                         | * 2                 | 4.1.5       |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
| AJ65SBTB1-16D1  |                                     |                                                          |                         |                         |                         | 32 points               | Approx. 5mA  | 15V or more         | 5V or less              |               |                       |                       | 10ms or less                 |                     | 40mA        | * 3                        | 4.1.6                      |                    |               |                            |                       |                    |      |       |       |       |
| AJ65DBTB1-32D   |                                     | Approx. 5mA                                              |                         |                         | 14V or more             |                         | 6V or less   | 1.5ms or less       |                         |               |                       | 45mA                  | * 3                          | 4.1.14              |             |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
| AJ65SBTB1-32D   |                                     | Approx. 7mA                                              |                         |                         | 14V or more             |                         | 5.5V or less | * 14                |                         |               |                       | 45mA                  |                              | 4.1.10              |             |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
| AJ65SBTB1-32KD  |                                     | Approx. 5mA                                              |                         |                         | 15V or more             |                         | 3V or less   | 0.2ms or less       |                         |               |                       | 75mA                  |                              | 4.1.11              |             |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
| AJ65SBTB1-32D1  |                                     | Approx. 4mA                                              |                         |                         | 3.5V or more            |                         | 1.5V or less | 1.5ms or less       |                         |               |                       | 50mA                  |                              | 4.1.12              |             |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
| AJ65SBTB1-32D5  |                                     | 1-wire one-touch connector                               |                         |                         | 32 points 1 common      |                         | 45mA         | * 3                 | 4.1.13                  |               |                       |                       |                              |                     |             |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
| AJ65SBTC1-32D   |                                     |                                                          |                         |                         |                         |                         |              |                     |                         |               |                       | 15V or more           | 3V or less                   | 0.2ms or less       |             |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
| AJ65SBTC1-32D1  |                                     |                                                          |                         |                         |                         |                         |              |                     |                         |               |                       | 14V or more           | 6V or less                   | 1.5ms or less       |             |                            |                            |                    |               |                            |                       |                    |      |       |       |       |
| AJ65SBTC4-16D   |                                     | DC input (Positive common)<br>DC input (Negative common) |                         |                         | 16 points               | Photocoupler insulation | 24VDC        | Approx. 5mA         | 14V or more             |               |                       | 6V or less            | 1.5ms or less                |                     | LED display | 1-wire one-touch connector | 45mA                       | * 2                | 4.4.6         |                            |                       |                    |      |       |       |       |
| AJ65SBTC4-16DN  | 15V or more                         |                                                          |                         |                         |                         |                         |              |                     |                         |               | 3V or less            |                       |                              |                     |             |                            |                            |                    | 0.2ms or less |                            | 4.4.7                 |                    |      |       |       |       |
| AJ65SBTC4-16DE  | 14V or more                         |                                                          |                         |                         |                         |                         |              |                     |                         |               | 6V or less            |                       |                              |                     |             |                            |                            |                    | 1.5ms or less |                            | 4.4.2                 |                    |      |       |       |       |
| AJ65SBTW4-16D   | DC input (Positive/negative common) | 32 points                                                |                         |                         | Photocoupler insulation |                         |              | 24VDC               | Approx. 5mA             |               | 14V or more           | 6V or less            | 1.5ms or less                |                     |             | LED display                | 4-wire one-touch connector | 35mA               | * 2           | 4.4.3                      |                       |                    |      |       |       |       |
| AJ65SBTCF1-32D  |                                     |                                                          |                         |                         |                         |                         |              |                     |                         |               |                       |                       |                              |                     |             |                            |                            |                    |               | 15V or more                | 3V or less            | 0.2ms or less      |      | 4.4.4 |       |       |
| AJ65SBTB3-8D    |                                     |                                                          |                         |                         |                         |                         |              |                     |                         |               |                       |                       |                              |                     |             |                            |                            |                    |               | 14V or more                | 6V or less            | 1.5ms or less      |      | 120mA | * 4   | 4.6.3 |
| AJ65SBTB3-16D   | 16 points                           | Approx. 7mA                                              |                         |                         |                         |                         |              |                     | 14V or more             |               | 5.5V or less          | * 14                  |                              | 32 points 1 common  |             |                            | 45mA                       | * 2                | 4.5.1         |                            |                       |                    |      |       |       |       |
| AJ65SBTB3-16KD  |                                     |                                                          |                         |                         |                         |                         |              |                     |                         |               |                       |                       |                              |                     |             |                            | 3-wire terminal block      | 16 points 1 common | 45mA          | * 3                        | 4.1.4                 |                    |      |       |       |       |
| AJ65SBTB3-16D5  |                                     |                                                          |                         |                         |                         |                         |              |                     |                         |               |                       |                       |                              |                     |             |                            |                            |                    | 50mA          |                            | 4.1.7                 |                    |      |       |       |       |
| AJ65VBTUC3-8D1  | DC input (Positive common)          | 8 points                                                 |                         |                         |                         |                         |              |                     | Photocoupler insulation |               | 24VDC                 | Approx. 5mA           | 15V or more                  | 3V or less          |             |                            | 0.2ms or less              |                    | LED display   | 3-wire one-touch connector | 8 points 1 common     | 35mA               | * 5  | 4.4.1 |       |       |
| AJ65VBTUC3-16D1 |                                     | 16 points                                                |                         |                         |                         |                         |              |                     |                         |               |                       |                       |                              |                     |             |                            |                            |                    |               |                            | 16 points 1 common    | 40mA               | * 6  | 4.4.5 |       |       |
| AJ65SBTB2N-8A   | AC input                            | 8 points                                                 |                         | Photocoupler insulation |                         |                         |              |                     |                         |               |                       | 100 to 120VAC 50/60Hz | Approx. 7mA                  | 80V or more         |             |                            | 30V or less                | 20ms or less       |               | LED display                | 2-wire terminal block | 8 points 1 common  | 35mA | * 2   | 4.1.1 |       |
| AJ65SBTB2N-16A  |                                     | 16 points                                                |                         |                         |                         |                         |              |                     |                         |               |                       |                       |                              |                     |             |                            |                            |                    |               |                            |                       | 16 points 1 common | 40mA | * 3   | 4.1.2 |       |

\* 1 : 87.3 (3.44) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 2 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 3 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 4 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)

\* 5 : 41 (1.61) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

\* 6 : 60 (2.36) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

\* 7 : 60 (2.36) (W) × 200 (7.87) (H) × 48 (1.89) (D)mm (inch)

\* 8 : 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

\* 9 : 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

\* 10 : 100 (3.94) (W) × 40 (1.57) (H) × 43.5 (1.71) (D)mm (inch)

\* 11 : 100 (3.94) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

\* 12 : 155 (6.10) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

\* 13 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch)

\* 14 : 0.2ms or less/1.5ms or less/5ms or less/10ms or less

(Depending on the input response speed setting value)

| Model          | Input format               | No. of points per module | Insulation method       | Rated input voltage | Input current | Operation voltage |             | Input response time |             | Input display                    | External connection                  | Common connection                       | Internal current consumption | External dimensions | Reference |       |  |  |  |  |  |  |
|----------------|----------------------------|--------------------------|-------------------------|---------------------|---------------|-------------------|-------------|---------------------|-------------|----------------------------------|--------------------------------------|-----------------------------------------|------------------------------|---------------------|-----------|-------|--|--|--|--|--|--|
|                |                            |                          |                         |                     |               | ON voltage        | OFF voltage | OFF → ON            | ON → OFF    |                                  |                                      |                                         |                              |                     |           |       |  |  |  |  |  |  |
| AJ65FBTA4-16D  | DC input (Positive common) | 16 points                | Photocoupler insulation | 24VDC               | Approx. 7mA   | 14V or more       | 6V or less  | 1.5ms or less       | LED display | 2 to 4-wire waterproof connector | 16 points 1 common                   | 40mA                                    | * 7                          | 4.6.1               |           |       |  |  |  |  |  |  |
| AJ65FBTA4-16DE | DC input (Negative common) |                          |                         |                     | 4.6.2         |                   |             |                     |             |                                  |                                      |                                         |                              |                     |           |       |  |  |  |  |  |  |
| AJ65VBTS3-16D  |                            | 32 points                |                         |                     |               |                   |             |                     |             |                                  |                                      | Spring clamp terminal block 3-wire type |                              | 35mA                | * 8       | 4.2.1 |  |  |  |  |  |  |
| AJ65VBTS3-32D  |                            |                          |                         |                     |               |                   |             |                     |             |                                  |                                      |                                         |                              | 40mA                | * 9       | 4.2.2 |  |  |  |  |  |  |
| AJ65VBTC3-8D   | DC input (Positive common) | 8 points                 |                         |                     | Approx. 5mA   |                   |             |                     |             |                                  | Sensor connector (e-CON) 3-wire type | 8 points 1 common                       | 30mA                         | * 10                | 4.3.1     |       |  |  |  |  |  |  |
| AJ65VBTC3-16D  |                            | 16 points                |                         |                     |               |                   |             |                     |             |                                  |                                      | 16 points 1 common                      | 35mA                         | * 11                | 4.3.2     |       |  |  |  |  |  |  |
| AJ65VBTC3-32D  |                            | 32 points                |                         |                     |               |                   |             |                     |             |                                  |                                      | 32 points 1 common                      | 40mA                         | * 12                | 4.3.3     |       |  |  |  |  |  |  |
| AJ65VBTC3-16DE | DC input (Negative common) | 16 points                |                         |                     |               |                   |             |                     |             |                                  |                                      | 16 points 1 common                      | 35mA                         | * 11                | 4.3.4     |       |  |  |  |  |  |  |
| AJ65VBTC3-32DE |                            | 32 points                |                         |                     |               |                   |             |                     |             |                                  |                                      | 32 points 1 common                      | 40mA                         | * 12                | 4.3.5     |       |  |  |  |  |  |  |

\* 1 : 87.3 (3.44) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 2 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 3 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 4 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)

\* 5 : 41 (1.61) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

\* 6 : 60 (2.36) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

\* 7 : 60 (2.36) (W) × 200 (7.87) (H) × 48 (1.89) (D)mm (inch)

\* 8 : 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

\* 9 : 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

\* 10 : 100 (3.94) (W) × 40 (1.57) (H) × 43.5 (1.71) (D)mm (inch)

\* 11 : 100 (3.94) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

\* 12 : 155 (6.10) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

\* 13 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch)

\* 14 : 0.2ms or less/1.5ms or less/5ms or less/10ms or less

(Depending on the input response speed setting value)

## (2) Output module

| Model            | Output format                        | No. of points per module | Insulation method       | Rated load voltage       | Maximum load current |                            | Output response time |                         | Output display | Surge suppressor      | External connection        | Common connection     | Internal current consumption | External dimensions | Reference |
|------------------|--------------------------------------|--------------------------|-------------------------|--------------------------|----------------------|----------------------------|----------------------|-------------------------|----------------|-----------------------|----------------------------|-----------------------|------------------------------|---------------------|-----------|
|                  |                                      |                          |                         |                          | 1 point              | 1 common                   | OFF → ON             | ON → OFF                |                |                       |                            |                       |                              |                     |           |
| AJ65SBTB1-8T     | Transistor output * 14 (sink type)   | 8 points                 | Photocoupler insulation | 12/24 VDC                | 0.5 A                | 2.4 A                      | 0.5ms or less        | 1.5ms or less           | LED display    | Zener diode           | 1-wire terminal block      | 8 points<br>1 common  | 35mA                         | * 1                 | 5.1.1     |
| AJ65SBTB1-16T    |                                      | 16 points                |                         |                          |                      | 3.6 A                      |                      |                         |                |                       |                            | 16 points<br>1 common | 50mA                         | * 2                 | 5.1.5     |
| AJ65SBTB1-32T    |                                      | 32 points                |                         |                          |                      | 4.8 A                      |                      |                         |                |                       |                            | 32 points<br>1 common | 65mA                         | * 3                 | 5.1.9     |
| AJ65SBTC1-32T    |                                      |                          |                         |                          | 0.1 A                | 3.2 A                      |                      |                         |                |                       | 1-wire one-touch connector |                       | 60mA                         | * 2                 | 5.4.3     |
| AJ65SBTB1-8T1    | Transistor output * 13 (sink type)   | 8 points                 |                         |                          | 0.5 A                | 2.4 A                      |                      |                         |                |                       | 1-wire terminal block      | 8 points<br>1 common  | 35mA                         | * 1                 | 5.1.2     |
| AJ65SBTB1-16T1   |                                      | 16 points                |                         |                          |                      | 3.6 A                      |                      |                         |                |                       |                            | 16 points<br>1 common | 50mA                         | * 2                 | 5.1.6     |
| AJ65DBTB1-32T1   |                                      | 32 points                |                         |                          |                      | 8 A                        |                      |                         |                |                       |                            | 32 points<br>1 common | 65mA                         | * 12                | 5.1.19    |
| AJ65SBTB1-32T1   |                                      |                          |                         |                          |                      | 4.8 A                      |                      |                         |                |                       |                            |                       | 65mA                         | * 3                 | 5.1.10    |
| AJ65SBTC1-32T1   |                                      | 0.1 A                    |                         |                          | 3.2 A                | 1-wire one-touch connector |                      |                         |                |                       |                            | 60mA                  | * 2                          | 5.4.4               |           |
| AJ65SBTB1-8TE    | Transistor output * 13 (source type) | 8 points                 |                         |                          | 0.1 A                | 0.8 A                      |                      |                         |                |                       | 1-wire terminal block      | 8 points<br>1 common  | 35mA                         | * 1                 | 5.1.11    |
| AJ65SBTB1-16TE   |                                      | 16 points                |                         |                          |                      | 1.6 A                      |                      |                         |                |                       |                            | 16 points<br>1 common | 50mA                         | * 2                 | 5.1.12    |
| AJ65SBTB1B-16TE1 |                                      | 16 points                |                         |                          | 0.5 A                | 4 A                        |                      |                         |                |                       |                            | 8 points<br>1 common  | 50mA                         | * 3                 | 5.1.13    |
| AJ65SBTB1-32TE1  |                                      | 32 points                |                         |                          |                      | 4.8A                       |                      |                         |                |                       |                            | 32 points<br>1 common | 65mA                         | * 3                 | 5.1.14    |
| AJ65SBTB2-8T     | Transistor output * 14 (sink type)   | 8 points                 |                         |                          | 0.5 A                | 2.4 A                      |                      |                         |                |                       | 2-wire terminal block      | 8 points<br>1 common  | 45mA                         | * 2                 | 5.1.3     |
| AJ65SBTB2-16T    |                                      | 16 points                |                         |                          |                      | 3.6 A                      |                      |                         |                |                       |                            | 16 points<br>1 common | 55mA                         | * 3                 | 5.1.7     |
| AJ65SBTB2-8T1    | Transistor output * 12 (sink type)   | 8 points                 |                         |                          | 0.5 A                | 2.4 A                      |                      |                         |                |                       |                            | 8 points<br>1 common  | 45mA                         | * 2                 | 5.1.4     |
| AJ65SBTB2-16T1   |                                      | 16 points                |                         |                          |                      | 3.6 A                      |                      |                         |                |                       |                            | 16 points<br>1 common | 55mA                         | * 3                 | 5.1.8     |
| AJ65SBTB2N-8R    | Contact output                       | 8 points                 | Relay insulation        | 24VDC<br>240VAC          | 2 A                  | 4 A                        | 10ms or less         | 12ms or less            | None           | 1-wire terminal block |                            | 8 points<br>1 common  | 85mA                         | * 2                 | 5.1.15    |
| AJ65SBTB2N-16R   |                                      | 16 points                |                         |                          |                      | 8 A                        |                      |                         |                |                       |                            | 16 points<br>1 common | 120mA                        | * 3                 | 5.1.16    |
| AJ65DBTB1-32R    |                                      | 32 points                |                         |                          |                      | 4 A                        |                      |                         |                |                       |                            | 1-wire terminal block | 80mA                         | * 12                | 5.1.20    |
| AJ65SBTB2N-8S    | Triac output * 16                    | 8 points                 | Photocoupler insulation | 100 to 240VAC<br>50/60Hz | 0.6 A                | 2.4 A                      | 1ms or less          | 1ms + 0.5 cycle or less | CR Absorber    | 2-wire terminal block | 8 points<br>1 common       | 55mA                  | * 2                          | 5.1.17              |           |
| AJ65SBTB2N-16S   |                                      | 16 points                |                         |                          |                      | 4.8 A                      |                      |                         |                |                       | 32 points<br>1 common      | 85mA                  | * 3                          | 5.1.18              |           |

- \* 1 : 87.3 (3.44) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)  
 \* 2 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)  
 \* 3 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)  
 \* 4 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)  
 \* 5 : 41 (1.61) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)  
 \* 6 : 60 (2.36) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)  
 \* 7 : 60 (2.36) (W) × 200 (7.87) (H) × 48 (1.89) (D)mm (inch)  
 \* 8 : 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)  
 \* 9 : 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

- \* 10 : 100 (3.94) (W) × 40 (1.57) (H) × 43.5 (1.71) (D)mm (inch)  
 \* 11 : 100 (3.94) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)  
 \* 12 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch)  
 \* 13 : Leakage current when the transistor output is OFF (0.1mA or less)  
 \* 14 : Leakage current when the transistor output is OFF (0.25mA or less)  
 \* 15 : Leakage current when the transistor output is OFF (0.3mA or less)  
 \* 16 : Leakage current when the triac output is OFF 1.5mA rms or less  
 (100VAC rms 60Hz), 3mA rms or less (200VAC rms 60Hz)



| Model          | Output format                        | No. of points per module | Insulation method       | Rated load voltage | Maximum load current                 |               | Output response time                 |                             | Output display | Surge suppressor | External connection        | Common connection  | Internal current consumption | External dimensions | Reference   |
|----------------|--------------------------------------|--------------------------|-------------------------|--------------------|--------------------------------------|---------------|--------------------------------------|-----------------------------|----------------|------------------|----------------------------|--------------------|------------------------------|---------------------|-------------|
|                |                                      |                          |                         |                    | 1 point                              | 1 common      | OFF → ON                             | ON → OFF                    |                |                  |                            |                    |                              |                     |             |
| AJ65SBTCF1-32T | Transistor output * 13 (sink type)   | 32 points                | Photocoupler insulation | 12/24 VDC          | 0.1 A                                | 3.2 A         | 0.5ms or less                        | 1.5ms or less               | LED display    | Zener diode      | 1-wire FCN connector       | 32 points 1 common | 60mA                         | * 2                 | 5.5.1       |
| AJ65VBTCU2-8T  |                                      | 8 points                 |                         |                    |                                      | 0.8 A         | 1ms or less                          | 1ms or less                 |                |                  | 2-wire one-touch connector | 8 points 1 common  | 35mA                         | * 5                 | 5.4.1       |
| AJ65VBTCU2-16T |                                      |                          |                         |                    |                                      | 1.6 A         |                                      |                             |                |                  |                            |                    | 40mA                         | * 6                 | 5.4.2       |
| AJ65FBTA2-16T  | Transistor output * 14 (sink type)   | 16 points                |                         |                    | 0.5 A                                | 0.5ms or less | 1.5ms or less                        | 2-wire waterproof connector |                |                  | 16 points 1 common         | 50mA               | * 7                          | 5.6.1               |             |
| AJ65FBTA2-16TE |                                      |                          |                         |                    | Transistor output * 15 (source type) |               |                                      |                             |                |                  |                            | 1.0 A              | 50mA                         | * 7                 | 5.6.2       |
| AJ65VBTS2-16T  |                                      |                          |                         |                    | Transistor output * 12 (sink type)   |               |                                      |                             |                |                  |                            |                    | 0.5 A                        | 1ms or less         | 1ms or less |
| AJ65VBTS2-32T  | 32 points                            |                          |                         |                    |                                      | 60mA          | * 9                                  | 5.2.2                       |                |                  |                            |                    |                              |                     |             |
| AJ65VBTC2-8T   | 8 points                             | 0.1 A                    |                         |                    |                                      | 0.8 A         | Sensor connector (e-CON) 2-wire type | 8 points 1 common           |                |                  | 35mA                       | * 10               | 5.3.1                        |                     |             |
| AJ65VBTC2-16T  |                                      |                          |                         |                    |                                      |               |                                      | 16 points 1 common          |                |                  | 45mA                       | * 11               | 5.3.2                        |                     |             |
| AJ65VBTC3-16TE | Transistor output * 13 (source type) | 16 points                |                         |                    |                                      | 1.6 A         | Sensor connector (e-CON) 3-wire type |                             |                |                  |                            |                    |                              |                     |             |

\* 1 : 87.3 (3.44) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 2 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 3 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 4 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)

\* 5 : 41 (1.61) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

\* 6 : 60 (2.36) (W) × 115 (4.53) (H) × 62 (2.44) (D)mm (inch)

\* 7 : 60 (2.36) (W) × 200 (7.87) (H) × 48 (1.89) (D)mm (inch)

\* 8 : 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

\* 9 : 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

\* 10 : 100 (3.94) (W) × 40 (1.57) (H) × 43.5 (1.71) (D)mm (inch)

\* 11 : 100 (3.94) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

\* 12 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch)

\* 13 : Leakage current when the transistor output is OFF (0.1mA or less)

\* 14 : Leakage current when the transistor output is OFF (0.25mA or less)

\* 15 : Leakage current when the transistor output is OFF (0.3mA or less)

\* 16 : Leakage current when the triac output is OFF 1.5mA rms or less

(100VAC rms 60Hz), 3mA rms or less (200VAC rms 60Hz)

## (3) Combined I/O module

In the combined I/O module, the input side and the output side are structure as a pair.

## (a) Input side

| Division   | Model             | Input format               | No. of points per module                | Insulation method       | Rated input voltage | Input current                           | Operation voltage |                       | Input response time                     |                            | Input display | External connection                     | Common connection                       | Internal current consumption | External dimensions | Reference |  |                                         |      |     |       |
|------------|-------------------|----------------------------|-----------------------------------------|-------------------------|---------------------|-----------------------------------------|-------------------|-----------------------|-----------------------------------------|----------------------------|---------------|-----------------------------------------|-----------------------------------------|------------------------------|---------------------|-----------|--|-----------------------------------------|------|-----|-------|
|            |                   |                            |                                         |                         |                     |                                         | ON voltage        | OFF voltage           | OFF → ON                                | ON → OFF                   |               |                                         |                                         |                              |                     |           |  |                                         |      |     |       |
| Input side | AJ65SBTC1-32DT    | DC input (Positive common) | 16 points                               | Photocoupler insulation | 24 VDC              | Approx. 5mA                             | 14V or more       | 6V or less            | 1.5ms or less                           |                            | LED display   | 1-wire one-touch connector              | 32 points 1 common (shared with output) | 50mA                         | * 1                 | 6.4.3     |  |                                         |      |     |       |
|            | AJ65SBTC1-32DT1   |                            |                                         |                         |                     |                                         | 15V or more       | 3V or less            | 0.2ms or less                           |                            |               |                                         |                                         |                              |                     | 6.4.4     |  |                                         |      |     |       |
|            | AJ65SBTC1-32DT2   |                            |                                         |                         |                     |                                         | 14V or more       | 6V or less            | 1.5ms or less                           |                            |               |                                         |                                         |                              |                     | 6.4.5     |  |                                         |      |     |       |
|            | AJ65SBTC1-32DT3   |                            |                                         |                         |                     |                                         | 15V or more       | 3V or less            | 0.2ms or less                           |                            |               | 6.4.6                                   |                                         |                              |                     |           |  |                                         |      |     |       |
|            | AJ65SBTC4-16DT    |                            | 8 points                                |                         |                     |                                         |                   |                       | 1.5ms or less                           | 4-wire one-touch connector |               | 16 points 1 common (shared with output) | 40mA                                    | 6.4.1                        |                     |           |  |                                         |      |     |       |
|            | AJ65SBTC4-16DT2   |                            |                                         |                         |                     |                                         |                   |                       |                                         |                            |               |                                         |                                         | 6.4.2                        |                     |           |  |                                         |      |     |       |
|            | AJ65SBTW4-16DT    |                            | 8 points                                |                         |                     | 90mA                                    | * 3               | 6.6.3                 |                                         |                            |               |                                         |                                         |                              |                     |           |  |                                         |      |     |       |
|            | AJ65SBTB1-16DT    |                            | 8 points                                |                         |                     |                                         |                   | 1-wire terminal block | 16 points 1 common (shared with output) | 50mA                       |               | * 1                                     | 6.1.3                                   |                              |                     |           |  |                                         |      |     |       |
|            | AJ65SBTB1-32DT    |                            | 16 points                               |                         |                     |                                         |                   |                       | 32 points 1 common (shared with output) | 32mA                       |               | * 2                                     | 6.1.13                                  |                              |                     |           |  |                                         |      |     |       |
|            | AJ65SBTB1-16DT1   |                            | 8 points                                |                         |                     | 16 points 1 common (shared with output) | 55mA              |                       | * 1                                     | 6.1.4                      |               |                                         |                                         |                              |                     |           |  |                                         |      |     |       |
|            | AJ65SBTB1-32DT1   | 16 points                  | 32 points 1 common (shared with output) |                         |                     | 60mA                                    | * 2               |                       | 6.1.14                                  |                            |               |                                         |                                         |                              |                     |           |  |                                         |      |     |       |
|            | AJ65DBTB1-32DT1   |                            | 16 points 1 common (shared with output) |                         |                     | 55mA                                    | * 5               |                       | 6.1.20                                  |                            |               |                                         |                                         |                              |                     |           |  |                                         |      |     |       |
|            | AJ65SBTB1-32DTE1  | DC input (Negative common) | 32 points 1 common (shared with output) |                         |                     | 50mA                                    | * 2               |                       | 6.1.19                                  |                            |               |                                         |                                         |                              |                     |           |  |                                         |      |     |       |
|            | AJ65SBTB1-16DT2   | DC input (Positive common) | 8 points                                |                         |                     | Approx. 7mA                             | 14V or more       |                       | 6V or less                              | 1.5ms or less              |               | 16 points 1 common (shared with output) | 50mA                                    | * 1                          | 6.1.5               |           |  |                                         |      |     |       |
|            | AJ65SBTB1-32DT2   |                            | 16 points                               |                         |                     |                                         |                   |                       |                                         |                            |               | 32 points 1 common (shared with output) | 60mA                                    | * 2                          | 6.1.15              |           |  |                                         |      |     |       |
|            | AJ65SBTB1-32KDT2  |                            | 8 points                                |                         |                     |                                         |                   |                       |                                         |                            |               | 5.5V or less                            | * 11                                    |                              | 6.1.16              |           |  |                                         |      |     |       |
|            | AJ65SBTB1-16DT3   |                            | 16 points                               |                         |                     |                                         |                   |                       |                                         |                            |               | 32 points 1 common (shared with output) | 55mA                                    | * 1                          | 6.1.6               |           |  |                                         |      |     |       |
|            | AJ65SBTB1-32DT3   |                            | 8 points                                |                         |                     | Approx. 5mA                             | 15V or more       | 3V or less            | 0.2ms or less                           |                            |               | 32 points 1 common (shared with output) | 60mA                                    | * 2                          | 6.1.17              |           |  |                                         |      |     |       |
|            | AJ65SBTB1-32KDT8  |                            | 16 points                               |                         |                     |                                         |                   |                       |                                         |                            |               | 1 common (shared with output)           | 65mA                                    |                              | 6.1.18              |           |  |                                         |      |     |       |
|            | AJ65SBTB32-8DT    |                            | 4 points                                |                         |                     |                                         |                   |                       |                                         |                            |               | 12 VDC                                  | Approx. 11mA                            | 5.6V or more                 | 2.4V or less        | * 11      |  | 8 points 1 common (shared with output)  | 45mA | * 1 | 6.1.1 |
|            | AJ65SBTB32-16DT   |                            | 8 points                                |                         |                     |                                         |                   |                       |                                         |                            |               |                                         |                                         |                              |                     |           |  | 16 points 1 common (shared with output) | 50mA | * 2 | 6.1.7 |
|            | AJ65SBTB32-8DT2   |                            | 4 points                                |                         |                     | 8 points 1 common (shared with output)  | 45mA              | * 1                   | 6.1.2                                   |                            |               |                                         |                                         |                              |                     |           |  |                                         |      |     |       |
|            | AJ65SBTB32-16DT2  |                            | 8 points                                |                         |                     | 16 points 1 common (shared with output) | 50mA              | * 2                   | 6.1.8                                   |                            |               |                                         |                                         |                              |                     |           |  |                                         |      |     |       |
|            | AJ65SBTB32-16KDT2 | 55mA                       |                                         |                         |                     |                                         | 6.1.9             |                       |                                         |                            |               |                                         |                                         |                              |                     |           |  |                                         |      |     |       |
|            | AJ65SBTB32-16KDT8 | 8 points                   | 12 VDC                                  |                         |                     | Approx. 11mA                            | 5.6V or more      | 2.4V or less          | * 11                                    |                            |               | 16 points 1 common (shared with output) | 55mA                                    |                              | 6.1.10              |           |  |                                         |      |     |       |

\* 1 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 2 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 3 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)

\* 4 : 41 (1.61) (W) × 115 (4.53) (H) × 67 (2.64) (D)mm (inch)

\* 5 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch)

\* 6 : 60 (2.36) (W) × 200 (7.87) (H) × 48 (1.89) (D)mm (inch)

\* 7 : 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

\* 8 : 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

\* 9 : 100 (3.94) (W) × 50 (1.97) (H) × 41.5 (1.63) (D)mm (inch)

\* 10 : 155 (6.10) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

\* 11 : 0.2ms or less/1.5ms or less/5ms or less/10ms or less

(Depending on the input response speed setting value)

| Division   | Model             | Input format                        | No. of points per module   | Insulation method       | Rated input voltage | Input current | Operation voltage |                                         | Input response time |            | Input display | External connection                       | Common connection                | Internal current consumption | External dimensions                    | Reference                               |                                         |          |                                         |                                         |      |
|------------|-------------------|-------------------------------------|----------------------------|-------------------------|---------------------|---------------|-------------------|-----------------------------------------|---------------------|------------|---------------|-------------------------------------------|----------------------------------|------------------------------|----------------------------------------|-----------------------------------------|-----------------------------------------|----------|-----------------------------------------|-----------------------------------------|------|
|            |                   |                                     |                            |                         |                     |               | ON voltage        | OFF voltage                             | OFF → ON            | ON → OFF   |               |                                           |                                  |                              |                                        |                                         |                                         |          |                                         |                                         |      |
| Input side | AJ65SBTB32-16DR   | DC input (Positive/negative common) | 8 points                   | Photocoupler insulation | 24 VDC              | Approx. 7mA   | 14V or more       | 6V or less                              | 1.5ms or less       |            | LED display   | Input 3-wire Output 2-wire terminal block | 8 points 1 common                | 85mA                         | ※ 2                                    | 6.1.11                                  |                                         |          |                                         |                                         |      |
|            | AJ65SBTB32-16KDR  |                                     |                            |                         |                     |               | 5.5V or less      | ※ 11                                    |                     | 100mA      |               |                                           |                                  | 6.1.12                       |                                        |                                         |                                         |          |                                         |                                         |      |
|            | AJ65DBTB1-32DR    |                                     | 16 points                  |                         |                     | Approx. 5mA   | 15V or more       | 5V or less                              | 10ms or less        |            |               | 1-wire terminal block                     | 16 points 1 common               | 60mA                         | ※ 5                                    | 6.1.21                                  |                                         |          |                                         |                                         |      |
|            | AJ65SBTCF1-32DT   |                                     |                            |                         |                     |               | 14V or more       | 6V or less                              | 1.5ms or less       |            |               | 1-wire one-touch connector                |                                  | 50mA                         | ※ 1                                    | 6.5.1                                   |                                         |          |                                         |                                         |      |
|            | AJ65VBTCF1-32DT1  |                                     |                            |                         |                     |               | 15V or more       | 3V or less                              | 0.2ms or less       |            |               |                                           |                                  |                              | ※ 4                                    | 6.5.2                                   |                                         |          |                                         |                                         |      |
|            | AJ65VBTCFJ1-32DT1 | DC input (Positive common)          |                            |                         |                     |               | 8 points          | Approx. 7mA                             | 14V or more         | 6V or less |               | 1.5ms or less                             | 2 to 4-wire waterproof connector |                              | 8 points 1 common (Shared with output) | 45mA                                    | ※ 6                                     | 6.5.3    |                                         |                                         |      |
|            | AJ65FBTA42-16DT   |                                     | DC input (Negative common) |                         |                     |               |                   |                                         |                     |            |               |                                           |                                  |                              |                                        |                                         |                                         | 8 points | Spring clamp terminal block 3-wire type | 16 points 1 common (shared with output) | 40mA |
|            | AJ65VBTS32-16DT   |                                     |                            |                         |                     |               |                   |                                         |                     |            |               |                                           |                                  | 16 points 1 common           |                                        | 50mA                                    |                                         |          |                                         |                                         | ※ 8  |
|            | AJ65VBTS32-32DT   | DC input (Positive common)          | 8 points                   |                         |                     | Approx. 5mA   | 14V or more       |                                         |                     |            |               |                                           | 6V or less                       | 1.5ms or less                | Sensor connector (e-CON) 3-wire type   | 16 points 1 common (shared with output) | 40mA                                    | ※ 9      | 6.3.1                                   |                                         |      |
|            | AJ65VBTC32-16DT   |                                     |                            |                         |                     |               |                   |                                         |                     |            |               |                                           |                                  |                              |                                        |                                         | 32 points 1 common (shared with output) | 45mA     | ※ 10                                    | 6.3.3                                   |      |
|            | AJ65VBTC32-32DT   |                                     |                            |                         |                     |               |                   |                                         |                     |            |               |                                           |                                  |                              |                                        |                                         | DC input (Negative common)              | 8 points | 16 points                               | 16 points 1 common (shared with output) | 40mA |
|            | AJ65VBTC32-32DTE  |                                     |                            |                         |                     |               |                   | 32 points 1 common (shared with output) | 45mA                | ※ 10       |               | 6.3.4                                     |                                  |                              |                                        |                                         |                                         |          |                                         |                                         |      |

\* 1 : 118 (4.65) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 2 : 179 (7.05) (W) × 50 (1.97) (H) × 40 (1.57) (D)mm (inch)

\* 3 : 184.7 (7.27) (W) × 57.9 (2.28) (H) × 86 (3.39) (D)mm (inch)

\* 4 : 41 (1.61) (W) × 115 (4.53) (H) × 67 (2.64) (D)mm (inch)

\* 5 : 64 (2.52) (W) × 170 (6.70) (H) × 80 (3.15) (D)mm (inch)

\* 6 : 60 (2.36) (W) × 200 (7.87) (H) × 48 (1.89) (D)mm (inch)

\* 7 : 137 (5.39) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

\* 8 : 222 (8.74) (W) × 50 (1.97) (H) × 51.5 (2.03) (D)mm (inch)

\* 9 : 100 (3.94) (W) × 50 (1.97) (H) × 41.5 (1.63) (D)mm (inch)

\* 10 : 155 (6.10) (W) × 50 (1.97) (H) × 45.5 (1.79) (D)mm (inch)

\* 11 : 0.2ms or less/1.5ms or less/5ms or less/10ms or less

(Depending on the input response speed setting value)

(b) Output side

| Division    | Model             | Output format                        | No. of points per module | Insulation method       | Rated load voltage | Maximum load current |          | Output response time |               | Output display | Surge suppressor | External connection        | Common connection                            | Internal current consumption | External dimensions | Reference |                                           |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|-------------|-------------------|--------------------------------------|--------------------------|-------------------------|--------------------|----------------------|----------|----------------------|---------------|----------------|------------------|----------------------------|----------------------------------------------|------------------------------|---------------------|-----------|-------------------------------------------|----------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|--|--|--|--|--|--|--|--|
|             |                   |                                      |                          |                         |                    | 1 point              | 1 common | OFF → ON             | ON → OFF      |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
| Output side | AJ65SBTC1-32DT    | Transistor output * 13 (sink type)   | 16 points                | Photocoupler insulation | 24 VDC             | 0.1A                 | 1.6A     | 0.5ms or less        | 1.5ms or less | LED display    | Zener diode      | 1-wire one-touch connector | 32 points<br>1 common (shared with input)    | See input side               |                     |           |                                           |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTC1-32DT1   |                                      |                          |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTC1-32DT2   | Transistor output * 12 (sink type)   |                          |                         |                    |                      |          |                      |               |                |                  | 0.5A                       | 2.4A                                         |                              |                     |           |                                           | 4-wire one-touch connector | 16 points<br>1 common (shared with input) |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTC1-32DT3   |                                      |                          |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           | 4-wire waterproof connector               | 16 points<br>1 common (shared with input) |  |  |  |  |  |  |  |  |
|             | AJ65SBTC4-16DT    | Transistor output * 13 (sink type)   | 8 points                 |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           | 1-wire terminal block      | 16 points<br>1 common (shared with input) |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTC4-16DT2   |                                      |                          |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            | Transistor output * 12 (sink type)        | 32 points<br>1 common (shared with input) |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTW4-16DT    | Transistor output * 13 (sink type)   | 8 points                 |                         | 12/24 VDC          |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           | 16 points<br>1 common (shared with input) |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-16DT    |                                      |                          |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            | 32 points<br>1 common (shared with input) |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-32DT    |                                      | 16 points                |                         | 3.6A               |                      |          |                      |               |                |                  |                            | 16 points<br>1 common (shared with input)    |                              |                     |           |                                           |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-16DT1   |                                      |                          |                         |                    |                      |          |                      |               |                |                  |                            | 32 points<br>1 common (shared with input)    |                              |                     |           |                                           |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-16DT1   |                                      | 8 points                 |                         | 2.4A               |                      |          |                      |               |                |                  |                            | 16 points<br>1 common (shared with input)    |                              |                     |           |                                           |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-32DT1   |                                      |                          |                         |                    |                      |          |                      |               |                |                  |                            | 32 points<br>1 common (shared with input)    |                              |                     |           |                                           |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65DBTB1-32DT1   | Transistor output * 12 (sink type)   | 16 points                |                         | 0.5A               | 4A                   |          |                      |               |                |                  | 1-wire terminal block      | 16 points<br>1 common                        |                              |                     |           |                                           |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-32DTE1  | Transistor output * 12 (source type) | 16 points                |                         |                    |                      |          |                      |               |                |                  |                            | 24 VDC                                       |                              |                     |           |                                           |                            |                                           |                                           | 32 points<br>1 common (shared with input) |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-16DT2   | Transistor output * 12 (sink type)   | 8 points                 |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           |                                           | 16 points<br>1 common (shared with input) |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-32DT2   |                                      | 16 points                |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           |                                           | 32 points<br>1 common (shared with input) |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-32KDT2  |                                      | 8 points                 |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           |                                           | 16 points<br>1 common (shared with input) |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-16DT3   |                                      | 16 points                |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           |                                           | 32 points<br>1 common (shared with input) |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-32DT3   |                                      | 8 points                 |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           |                                           | 16 points<br>1 common (shared with input) |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-32KDT8  |                                      | 16 points                |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           |                                           | 32 points<br>1 common (shared with input) |  |  |  |  |  |  |  |  |
|             | AJ65SBTB1-32KDT8  |                                      | 16 points                |                         |                    |                      |          |                      |               |                |                  |                            |                                              |                              |                     |           |                                           |                            |                                           |                                           | 32 points<br>1 common (shared with input) |  |  |  |  |  |  |  |  |
|             | AJ65SBTB32-8DT    | Transistor output * 13 (sink type)   | 4 points                 |                         |                    | 24 VDC               |          |                      |               |                |                  | 1.2A                       | Input 3-wire<br>Output 2-wire terminal block |                              |                     |           | 8 points<br>1 common (shared with input)  |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB32-16DT   |                                      | 8 points                 |                         |                    |                      |          |                      |               |                |                  | 2.4A                       |                                              |                              |                     |           | 16 points<br>1 common (shared with input) |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB32-8DT2   | Transistor output * 12 (sink type)   | 4 points                 |                         |                    |                      |          |                      |               |                |                  | 1.2A                       |                                              |                              |                     |           | 8 points<br>1 common (shared with input)  |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB32-16DT2  |                                      | 8 points                 |                         |                    |                      |          |                      |               |                |                  | 2.4A                       |                                              |                              |                     |           | 16 points<br>1 common (shared with input) |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB32-16KDT2 |                                      | 8 points                 |                         |                    |                      |          |                      |               |                |                  | 2.4A                       |                                              |                              |                     |           | 16 points<br>1 common (shared with input) |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB32-16KDT8 |                                      | 8 points                 |                         |                    |                      |          |                      |               |                |                  | 2.4A                       |                                              |                              |                     |           | 16 points<br>1 common (shared with input) |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB32-16KDT8 |                                      | 8 points                 |                         |                    |                      |          |                      |               |                |                  | 2.4A                       |                                              |                              |                     |           | 16 points<br>1 common (shared with input) |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |
|             | AJ65SBTB32-16KDT8 |                                      | 8 points                 |                         |                    |                      |          |                      |               |                |                  | 2.4A                       |                                              |                              |                     |           | 16 points<br>1 common (shared with input) |                            |                                           |                                           |                                           |  |  |  |  |  |  |  |  |

\* 12 : Leakage current when the transistor output is OFF (0.1mA or less)

\* 13 : Leakage current when the transistor output is OFF (0.25mA or less)

\* 14 : Leakage current when the transistor output is OFF (0.3mA or less)

| Division    | Model           | Output format  | No. of points per module | Insulation method                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Rated load voltage | Maximum load current |          | Output response time |          | Output display | Surge suppressor | External connection | Common connection | Internal current consumption | External dimensions | Reference |
|-------------|-----------------|----------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------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|             |                 |                |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                    | 1 point              | 1 common | OFF → ON             | ON → OFF |                |                  |                     |                   |                              |                     |           |
| Output side | AJ65SBTB32-16DR | Contact output | 8 points                 | Relay insulation<br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><br><b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|                    |                      |          |                      |          |                |                  |                     |                   |                              |                     |           |

\* 12 : Leakage current when the transistor output is OFF (0.1mA or less)

\* 13 : Leakage current when the transistor output is OFF (0.25mA or less)

\* 14 : Leakage current when the transistor output is OFF (0.3mA or less)

## 1.5 Parts Sold Separately

Plugs for one-touch connector type modules are sold separately.  
Please purchase them as necessary.

|                                                                     | Mitsubishi model name | Part model name (manufacturer) | Specifications                                                                                                                                        |                                  |                       | Color of the cover |
|---------------------------------------------------------------------|-----------------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------|--------------------|
| Plug for one-touch connector * 1                                    |                       |                                | Applicable cable size (core)                                                                                                                          | Applicable cable size (diameter) | Maximum rated current |                    |
|                                                                     | A6CON-P214            | 33104-6000FL (3M)              | 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG)                                                                                                             | φ 1.0 to 1.4mm                   | 2A * 5                | Transparent        |
|                                                                     | A6CON-P220            | 33104-6100FL (3M)              |                                                                                                                                                       | φ 1.4 to 2.0mm                   |                       | Yellow             |
|                                                                     | A6CON-P514            | 33104-6200FL (3M)              | 0.3 to 0.5mm <sup>2</sup> (22 to 20 AWG)                                                                                                              | φ 1.0 to 1.4mm                   | 3A * 5                | Red                |
|                                                                     | A6CON-P520            | 33104-6300FL (3M)              |                                                                                                                                                       | φ 1.4 to 2.0mm                   |                       | Blue               |
| One-touch connector for communication * 2                           | A6CON-L5P             | 35505-6000-BOM GF (3M)         | Communication line 0.5mm <sup>2</sup> (20 AWG)                                                                                                        | φ 2.2 to 3.0mm                   |                       | Red                |
|                                                                     |                       |                                | Shielded cable 0.5mm <sup>2</sup> (20 AWG)                                                                                                            |                                  |                       |                    |
| One-touch connector for power supply and FG * 2 * 4                 | A6CON-PW5P            | 35505-6080-A00 GF (3M)         | 0.75mm <sup>2</sup> (0.66 to 0.98mm <sup>2</sup> ) (18 AWG)<br><br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant) | φ 2.2 to 3.0mm                   | 7A * 5                | Gray               |
|                                                                     | A6CON-PW5P-SOD        | 35505-6180-A00 GF(3M)          |                                                                                                                                                       | φ 2.0 to 2.3mm                   |                       | Blue               |
| Dustproof cap * 1                                                   | A6CAP-DC1             | —                              | (AJ65SBTW□-16□ only)                                                                                                                                  |                                  | —                     | —                  |
| Waterproof cap * 1                                                  | A6CAP-WP1             | —                              | Protection construction : IP67 (AJ65SBTW□-16□ only)                                                                                                   |                                  | —                     | —                  |
|                                                                     | A6CAP-WP2             |                                | Protection of degree : IP67 (AJ65FBTA□-16□ only)                                                                                                      |                                  | —                     | —                  |
| FCN connector                                                       | A6CON1                | —                              | Soldering type (Straight-out type)                                                                                                                    |                                  | —                     | —                  |
|                                                                     | A6CON2                |                                | Crimp-contact type (Straight-out type)                                                                                                                |                                  | —                     | —                  |
|                                                                     | A6CON3                |                                | Pressure-displacement type (Flat cable type)                                                                                                          |                                  | —                     | —                  |
|                                                                     | A6CON4                |                                | Soldering type (Straight-out/diagonal-out type)                                                                                                       |                                  | —                     | —                  |
| Online connector for communication * 3                              | A6CON-LJ5P            | 35720-L200-B00 AK (3M)         | —                                                                                                                                                     |                                  | —                     | —                  |
| Online connector for power supply * 3                               | A6CON-PWJ5P           | 35720-L200-A00 AK (3M)         | —                                                                                                                                                     |                                  | —                     | —                  |
| One-touch connector plug with terminating resistor (1 piece)        | A6CON-TR11            | —                              | With terminating resistor (110Ω)                                                                                                                      |                                  | —                     | —                  |
|                                                                     | A6CON-TR11N           |                                | With terminating resistor (110Ω) (built-in type)                                                                                                      |                                  | —                     | —                  |
| Metal installation fitting for the connector type module (set of 5) | A6PLT-J65V1           | —                              | For modules with a width of 41mm (AJ65VBTCU□-8□, AJ65VBTCU□-32□, AJ65VBTCU-68□)<br>10 M4 × 8 SWPW attached hole section screws                        |                                  | —                     | —                  |
|                                                                     | A6PLT-J65V2           | —                              | For modules with a width of 60mm (AJ65VBTCU□-16□)<br>10 M4 × 8 SWPW attached hole section screws                                                      |                                  | —                     | —                  |

\*1 The A6CON-□□□ and A6CAP-□□□1 (manufactured by Mitsubishi) are available in packs of 20 pieces.

\*2 The A6CON-□5P (manufactured by Mitsubishi) is available in packs of 10 pieces.

\*3 The A6CON-□J5P (manufactured by Mitsubishi) is available in packs of 5 pieces.

\*4 Check the outside diameter of an applicable cable and select a connector.

\*5 Keep the current within the allowable range of the connected cable.

|                                                                                    | Mitsubishi<br>model name | Applicable module                                                   |                                                                                                                                                                             |                                                                                                                                                              |                                                                                                                                                                                                                                  |
|------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protective<br>cover for the<br>compact type<br>remote I/O<br>module<br>(10 pieces) | A6CVR-8                  | Input :<br>Output :<br>Repeater :                                   | AJ65SBTB1-8D<br>AJ65SBTB1-8T<br>AJ65SBT-RPT                                                                                                                                 | AJ65SBTB1-8TE                                                                                                                                                | AJ65SBTB1-8T1                                                                                                                                                                                                                    |
|                                                                                    | A6CVR-16                 | Input :<br><br>Output :<br><br>Combined :<br><br>Optical Repeater : | AJ65SBTB1-16D<br>AJ65SBTC4-16D<br>AJ65SBTB2-8A<br>AJ65SBTB1-16T<br>AJ65SBTB1-16TE<br>AJ65SBTB2N-8S<br>AJ65SBTB2N-8S<br>AJ65SBTC1-32DT<br>AJ65SBTB1-16DT1<br>AJ65SBTC1-32DT3 | AJ65SBTB1-16D1<br>AJ65SBTC4-16DN<br>AJ65SBTB2N-8A<br>AJ65SBTC1-32T<br>AJ65SBTB2-8R<br>AJ65SBTB2-8T1<br>AJ65SBTC1-32DT1<br>AJ65SBTB1-16DT2<br>AJ65SBTC4-16DT2 | AJ65SBTC1-32D<br>AJ65SBTC4-16DE<br>AJ65SBTB3-8D<br>AJ65SBTB1-16T1<br>AJ65SBTB2-8T<br>AJ65SBTB2-8S<br>AJ65SBTB2N-8R<br>AJ65SBTC4-16DT<br>AJ65SBTB1-6DT<br>AJ65SBTC1-32DT2<br>AJ65SBTB1-16DT3<br>AJ65SBTB32-8DT<br>AJ65SBTB32-8DT2 |
|                                                                                    | A6CVR-32                 | Input :<br><br>Output :<br><br>Combined :                           | AJ65SBTB1-32D<br>AJ65SBTB3-16D<br>AJ65SBTB1-32T<br>AJ65SBTB2-16S<br>AJ65SBTB1-32DT<br>AJ65SBTB1-32DT3                                                                       | AJ65SBTB1-32D1<br>AJ65SBTB1-32T1<br>AJ65SBTB2N-16R<br>AJ65SBTB2N-16S<br>AJ65SBTB1-32DT1<br>AJ65SBTB32-16DT2                                                  | AJ65SBTB2-16A<br>AJ65SBTB2N-16A<br>AJ65SBTB2-16T<br>AJ65SBTB2-16R<br>AJ65SBTB2N-16S<br>AJ65SBTB2-16T1<br>AJ65SBTB32-16DT                                                                                                         |
|                                                                                    | A6CVR-VCE8               | Input :<br>Output :                                                 | AJ65VBTCE3-8D<br>AJ65VBTCE2-8T                                                                                                                                              |                                                                                                                                                              |                                                                                                                                                                                                                                  |
|                                                                                    | A6CVR-VCE16              | Input :<br>Output :<br>Combined :                                   | AJ65VBTCE3-16D<br>AJ65VBTCE2-16T<br>AJ65VBTCE32-16DT                                                                                                                        | AJ65VBTCE3-16DE<br>AJ65VBTCE3-16TE<br>AJ65VBTCE3-16DTE                                                                                                       |                                                                                                                                                                                                                                  |
| DIN adapter                                                                        | A6DIN1C                  | Input :<br>Output :<br>Combined :                                   | AJ65DBTB1-32D<br>AJ65DBTB1-32T1<br>AJ65DBTB1-32DT1                                                                                                                          | AJ65DBTB1-32R<br>AJ65DBTB1-32DR                                                                                                                              |                                                                                                                                                                                                                                  |
| Common<br>terminal block                                                           | A2CCOM-TB                | Input :<br>Output :<br>Combined :                                   | AJ65DBTB1-32D<br>AJ65DBTB1-32T1<br>AJ65DBTB1-32DT1                                                                                                                          | AJ65DBTB1-32R<br>AJ65DBTB1-32DR                                                                                                                              |                                                                                                                                                                                                                                  |

## 1.6 Recommended Connection Device List

## 1.6.1 Recommended connection devices for low profile waterproof remote I/O module

The following shows communication devices needed for use of the low profile waterproof type remote I/O module (AJ65FBTA□-16□).

(1) Communications Module Waterproof Plug (Male / Female) . . . 4-pin / 5-pin can be used.

(a) For LINK In Side (Female)

| Model name      | Maker      | Specifications                    | Connection cable diameter |
|-----------------|------------|-----------------------------------|---------------------------|
| ELKA 4012 PG9   | HIRSCHMANN | M12-4-pin Female Straight Type    | φ6.0 to 8.0mm             |
| ELKA 5012 PG9   | HIRSCHMANN | M12-5-pin Female Straight Type    | φ6.0 to 8.0mm             |
| CM02A-8DP5S(03) | DDK Ltd.   | M12-4-pin Female Straight Type    | φ7.2 to 7.9mm             |
| ELWIKA 4012 PG9 | HIRSCHMANN | M12-4-pin Female Right-angle Type | φ6.0 to 8.0mm             |
| ELWIKA 5012 PG9 | HIRSCHMANN | M12-5-pin Female Right-angle Type | φ6.0 to 8.0mm             |

(b) For LINK OUT Side (Male)

| Model name      | Maker      | Specifications                  | Connection cable diameter |
|-----------------|------------|---------------------------------|---------------------------|
| ELST 4012 PG9   | HIRSCHMANN | M12-4-pin Male Straight Type    | φ6.0 to 8.0mm             |
| ELST 5012 PG9   | HIRSCHMANN | M12-5-pin Male Straight Type    | φ6.0 to 8.0mm             |
| CM02A-8DJ5P(03) | DDK Ltd.   | M12-4-pin Female Straight Type  | φ7.2 to 7.9mm             |
| ELWIST 4012 PG9 | HIRSCHMANN | M12-4-pin Male Right-angle Type | φ6.0 to 8.0mm             |
| ELWIST 5012 PG9 | HIRSCHMANN | M12-5-pin Male Right-angle Type | φ6.0 to 8.0mm             |

(2) Power Supply Module - Waterproof Plug (Female) . . . 5-pin only can be used.

| Model name      | Maker      | Specifications                    | Connection cable diameter |
|-----------------|------------|-----------------------------------|---------------------------|
| ELKA 5012 PG7   | HIRSCHMANN | M12-5-pin Female Straight Type    | φ4.0 to 6.0mm             |
| ELKA 5012 PG9   |            |                                   | φ6.0 to 8.0mm             |
| ELWIKA 5012 PG7 | HIRSCHMANN | M12-5-pin Female Right-angle Type | φ4.0 to 6.0mm             |
| ELWIKA 5012 PG9 |            |                                   | φ6.0 to 8.0mm             |

(3) I/O connector waterproof plug (male) . . . 4-pin/5-pin can be used.  
The plug for LINK OUT side (male) mentioned in Section (1) (b) can be used.

(4) I/O Connector Y Branch Connector

| Model name  | Maker               | Remarks |
|-------------|---------------------|---------|
| SAC-3P-M12Y | PHOENIX CONTACT     | —       |
| SAC-5P-M12Y |                     |         |
| XS2R series | OMRON Corporation   | —       |
| VA-4YG-2    | CORRENS Corporation | —       |

(5) CC-Link Cable

| Model name               | Maker                                   | Remarks                                           |
|--------------------------|-----------------------------------------|---------------------------------------------------|
| FA-CBL series            | MITSUBISHI ELECTRIC ENGINEERING Co.,Ltd | CC-Link dedicated cable with waterproof connector |
| Cable with M12 Connector | Shinwa Co.,Ltd                          | The CA series cannot be used.                     |



### 1.6.2 Recommended connection devices for low profile sensor connector (e-CON) remote I/O module

The following shows communication devices needed for use of the sensor connector (e-CON) remote I/O module (AJ65VBTCE□-□□).

For how to wire the sensor connector (e-CON), refer to the catalog of the corresponding maker.

#### (1) I/O sensor connector (e-CON) plug \*1

| Model name | Maker                                          | Specifications                                |                                  |                       | Color of the cover |
|------------|------------------------------------------------|-----------------------------------------------|----------------------------------|-----------------------|--------------------|
|            |                                                | Applicable cable size (core)                  | Applicable cable size (diameter) | Maximum rated current |                    |
| ECN-A014R  | (Mitsubishi Electric System Service Co., Ltd.) | 0.08 to 0.20mm <sup>2</sup><br>(28 to 24 AWG) | φ0.9 to 1.0mm                    | 2A * 2                | Red                |
| ECN-A004Y  |                                                | 0.20 to 0.30mm <sup>2</sup><br>(24 to 22 AWG) | φ1.0 to 1.15mm                   |                       | Yellow             |
| ECN-A024BL |                                                | 0.30 to 0.50mm <sup>2</sup><br>(22 to 20 AWG) | φ1.15 to 1.3mm                   |                       | Blue               |
| ECN-M014R  |                                                | 0.14 to 0.30mm <sup>2</sup><br>(26 to 24 AWG) | φ0.8 to 1.0mm                    |                       | Red                |
| ECN-M024Y  |                                                |                                               | φ1.0 to 1.2mm                    |                       | Yellow             |
| ECN-M034OR |                                                |                                               | φ1.2 to 1.6mm                    |                       | Orange             |
| ECN-M044GN |                                                | 0.30 to 0.50mm <sup>2</sup><br>(22 to 20 AWG) | φ1.0 to 1.2mm                    |                       | Green              |
| ECN-M054BL |                                                |                                               | φ1.2 to 1.6mm                    |                       | Blue               |
| ECN-M064GY |                                                |                                               | φ1.6 to 2.0mm                    |                       | Gray               |

\*1 The ECN-□□□□ is available in packs of 20 pieces.

\*2 Keep the current within the allowable range of the connected cable.

## 1.7 About the Generic, Abbreviated and Technical Terms Used in This Manual

The abbreviated and technical terms used in this manual are listed below:

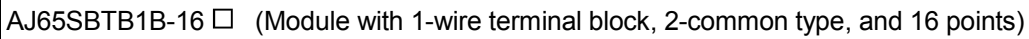
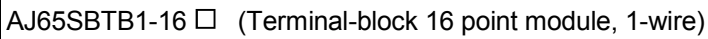
| Generic/abbreviated/<br>technical term             | Description                                                                                                                                                               |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Master/local module                                | Generic term for the AJ61BT11, A1SJ61BT11, AJ61QBT11, A1SJ61QBT11, QJ61BT11, QJ61BT11N, L26CPU-BT, L26CPU-PBT, LJ61BT11, and RJ61BT11 CC-Link system master/local modules |
| Compact remote I/O module                          | Generic term for the AJ65SBT□□-□□ CC-Link system compact remote I/O modules                                                                                               |
| Conventional remote I/O module                     | Generic term for the AJ65BT□□-□□ CC-Link system remote I/O modules                                                                                                        |
| Remote I/O module                                  | Generic term for the AJ65BT□□-□□/AJ65SBT□□-□□/AJ65V□□-□□/AJ65F□□-□□ CC-Link system remote I/O modules                                                                     |
| Input module                                       | Generic term for the AJ65SBT□□-□□A/D(1) remote I/O modules                                                                                                                |
| Output module                                      | Generic term for the AJ65SBT□□-□□R/T /T1/TE remote I/O modules                                                                                                            |
| Combined module                                    | Generic term for the AJ65SBT□□-□□DT(1) remote I/O modules                                                                                                                 |
| Waterproof type remote I/O module                  | Generic term for the AJ65SBTW4-16□ remote I/O modules                                                                                                                     |
| Low profile waterproof type remote I/O module      | Generic term for the AJ65FBTA□-16□ remote I/O modules                                                                                                                     |
| Spring clamp terminal block type remote I/O module | Generic term for the AJ65VBTS□-□□ remote I/O modules                                                                                                                      |
| Sensor connector (e-CON) type remote I/O module    | Generic term for the AJ65VBTC□-□□ remote I/O modules                                                                                                                      |

# MEMO

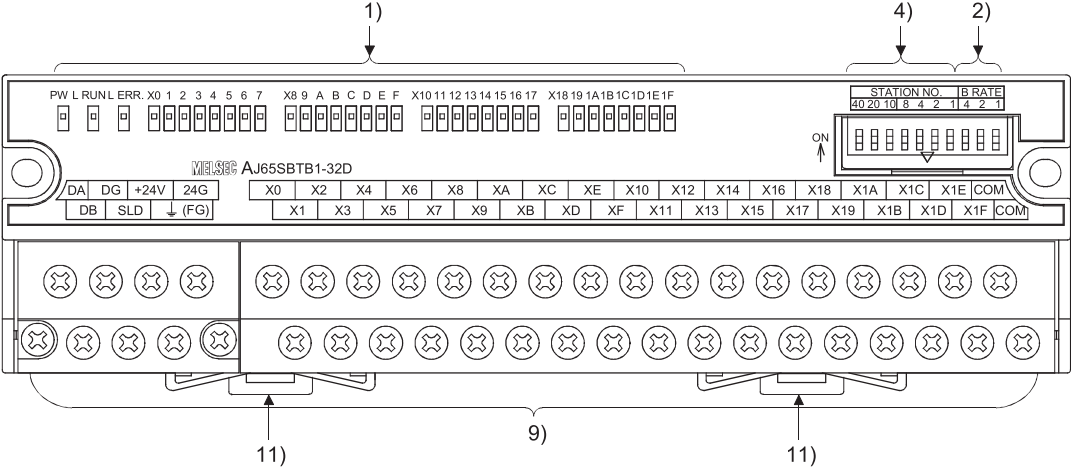
[illegible]

## 2

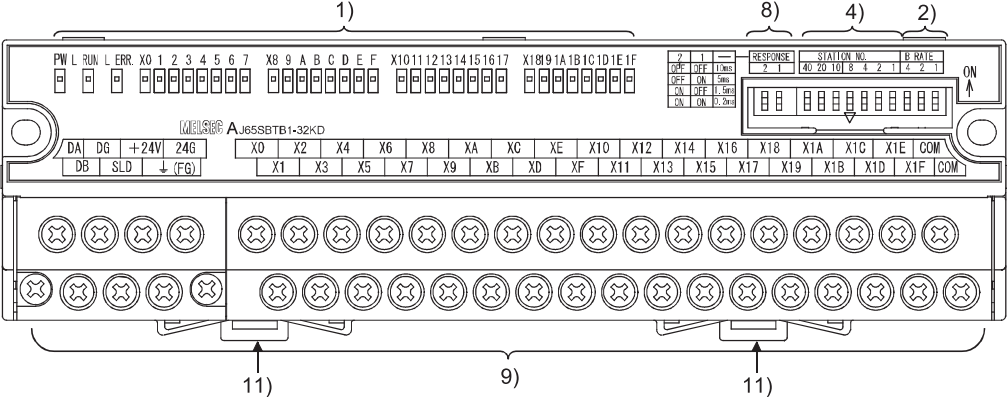
AJ65SBTB1-8 □ (Terminal-block 8 point module, 1-wire)



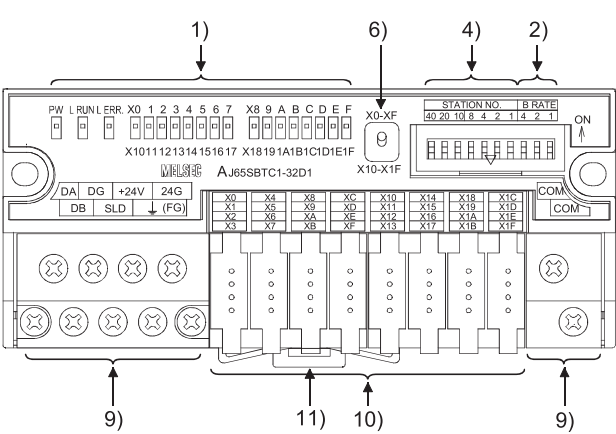
AJ65SBTB1-32 □ (Terminal-block 32 point module, 1-wire)



AJ65SBTB1-32K □ (Terminal-block 32 point module, 1-wire)



AJ65SBTC1-32 □ (One-touch connector 32 point module, 1-wire)



(AJ65SBTC4-16D only)

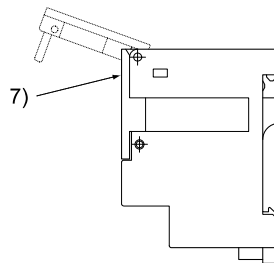
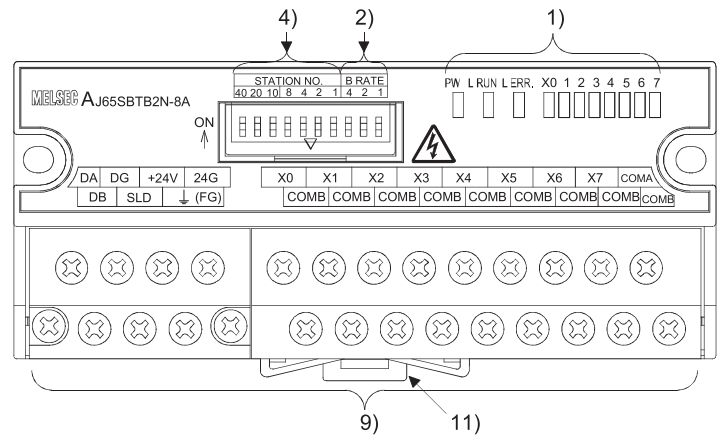


Diagram of the rear panel of the AJ65SBTCF1-32D module. The panel features various ports and connectors labeled with numbers 1) through 11):

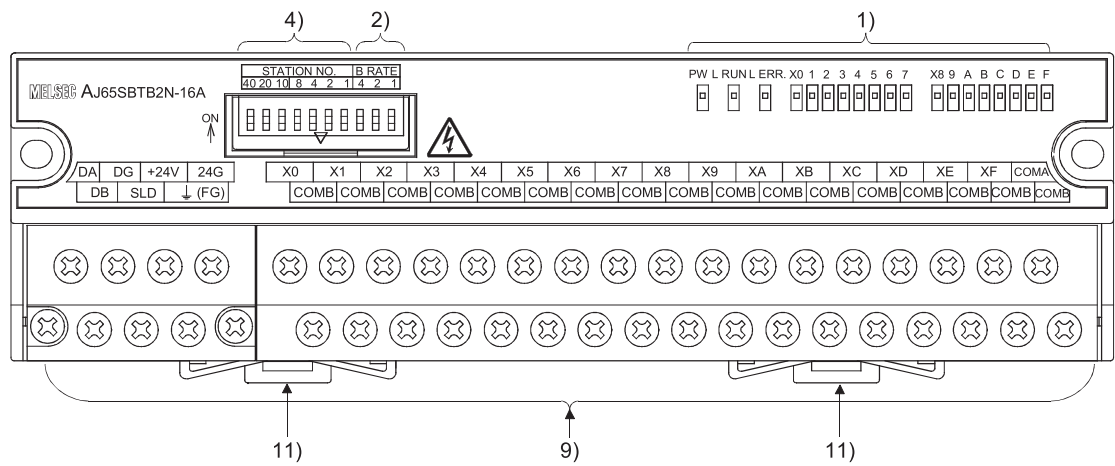
- 1)** Points to the top row of digital input/output terminals (X0 to X16).
- 2)** Points to the top row of digital input/output terminals (X17 to X31).
- 3)** Points to the top row of digital input/output terminals (X32 to X46).
- 4)** Points to the top row of digital input/output terminals (X47 to X61).
- 5)** Points to the top row of digital input/output terminals (X62 to X76).
- 6)** Points to the X0-XF terminal block.
- 7)** Points to the X10-X1F terminal block.
- 8)** Points to the X10-X1F terminal block.
- 9)** Points to the bottom row of digital input/output terminals (X0 to X16).
- 10)** Points to the bottom row of digital input/output terminals (X17 to X31).
- 11)** Points to the bottom row of digital input/output terminals (X32 to X46).

The rear panel also includes a power supply section with terminals for DA, DG, +24V, 24G, DB, SLD, and (FG). It also features a terminal block for X10 to X16, X17 to X31, X32 to X46, and X47 to X61. The module is labeled "AJ65SBTCF1-32D" and "X10-X1F".

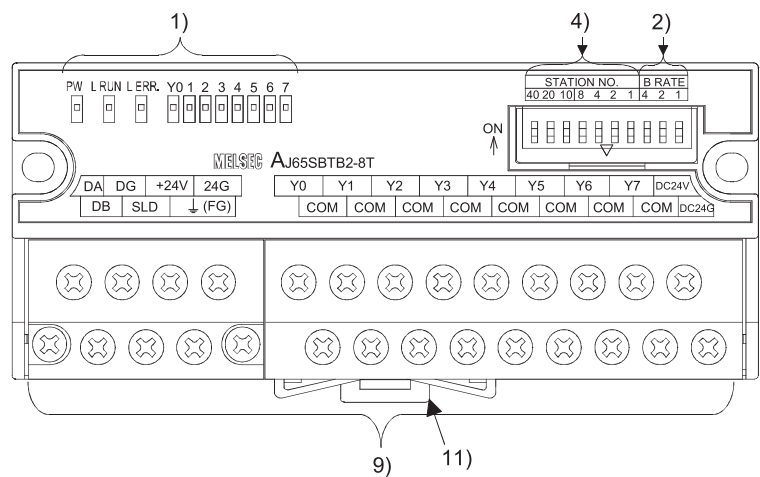
AJ65SBTB2N-8 □ (Terminal block 8 point module, 2-wire)



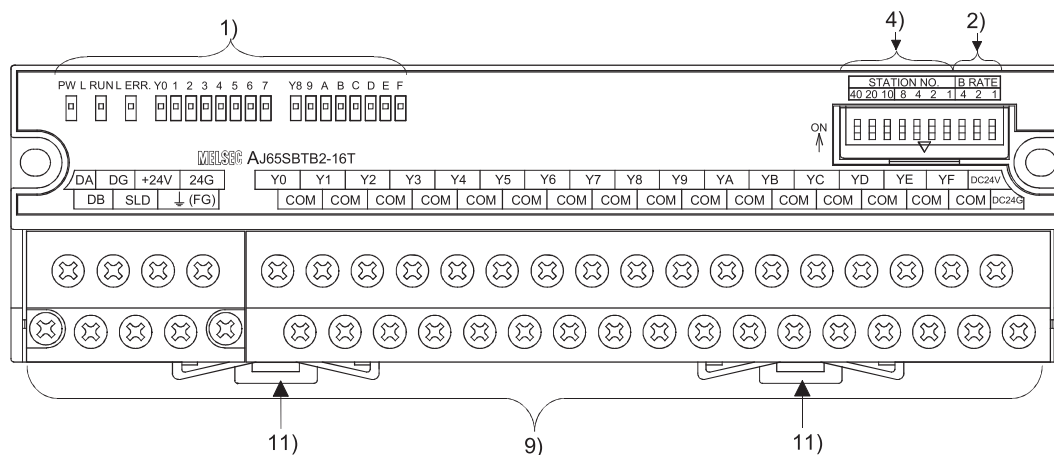
AJ65SBTB2N-16 □ (Terminal block 16 point module, 2-wire)



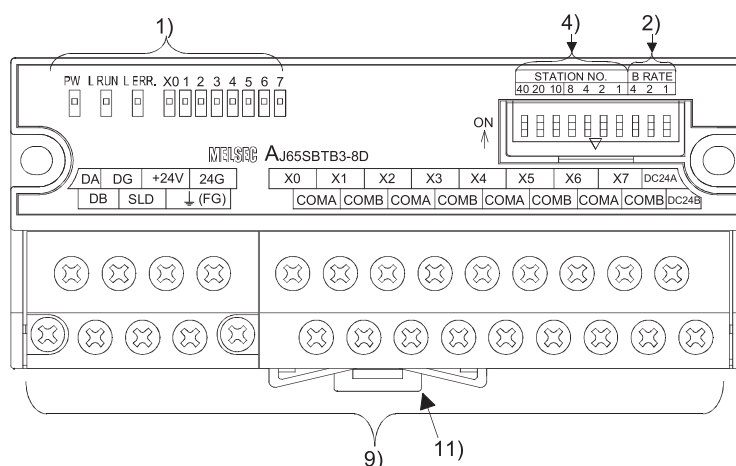
AJ65SBTB2-8 □ (Terminal block 8 point module, 2-wire)



AJ65SBTB2-16 □ (Terminal block 16 point module, 2-wire)



AJ65SBTB3-8 □ (Terminal block 8 point module, 3-wire)



AJ65SBTB3-16 □ (Terminal block 16 point module, 3-wire)

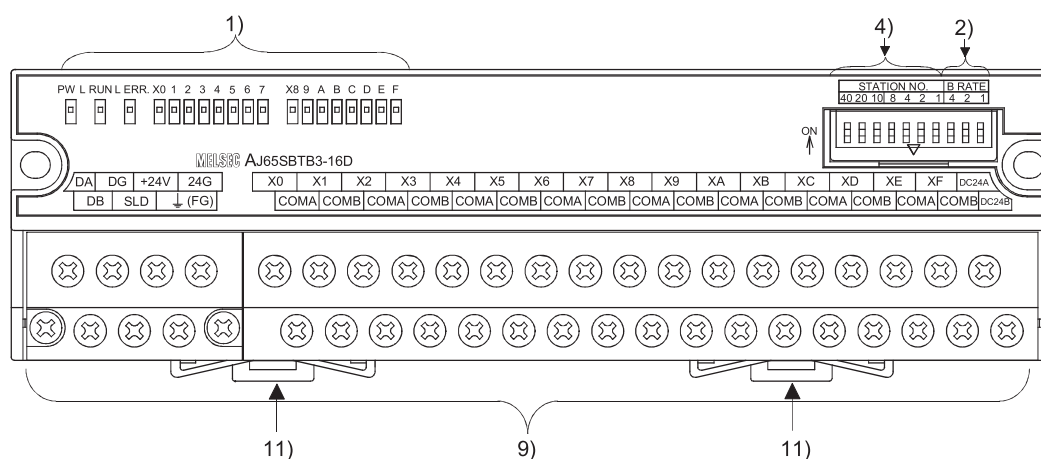
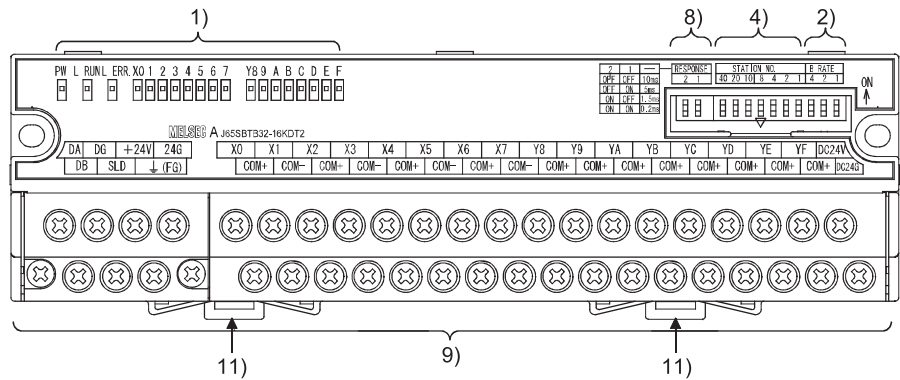




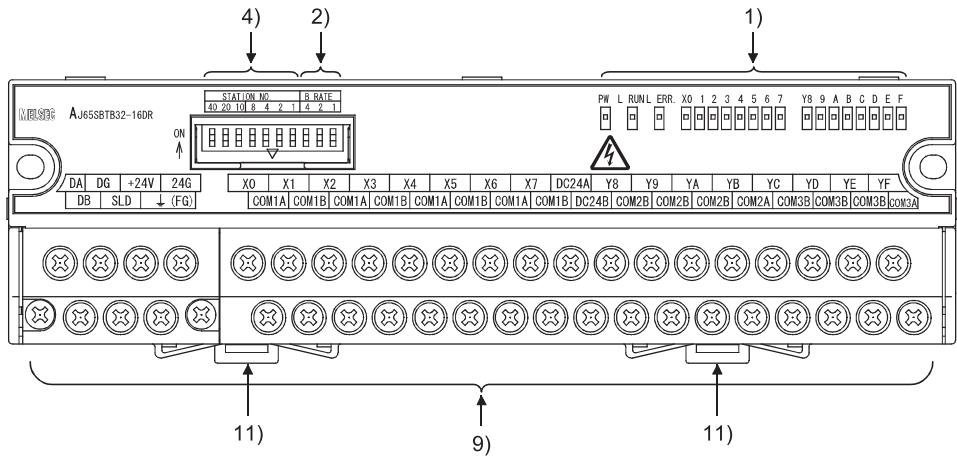
Figure 1 is a schematic diagram of the A6658TB3-16KD device. The diagram shows the top view of the device with various pins and components labeled. The top edge features a PM L RUN L FERRIO 1 2 3 4 5 6 7 X8 9 A B C D E F. Below this is a row of pins labeled DA DG +24V 24G DB SLD +FG. The bottom edge has pins labeled X0 X1 X2 X3 X4 X5 X6 X7 X8 X9 XA XB XC XD XE XF DG24A. A central label reads 'A6658TB3-16KD'. A small table on the right side of the device shows 'RESPONSE' and 'DATA' fields. A 'ON' label is on the far right. The diagram is divided into sections labeled 1), 2), 3), 4), 9), and 11).

Figure 1 shows the front panel of the AJ65SBTB32-8DT module. The top section includes a row of indicator lights labeled PW, L RUN, L ERR, X0, 1, 2, 3, Y8, 9, A, B. To the right is a display area with 'STATION NO.' (40, 20, 10, 8, 4, 2, 1) and 'B RATE' (4, 2, 1). Below the display is an 'ON' button. The bottom section features a large terminal block with two rows of terminals. The top row is labeled DA, DG, +24V, 24G, DB, SLD, (FG), X0, X1, X2, X3, Y8, Y9, YA, YB, DC24V. The bottom row is labeled COM+, COM-, COM+, COM-, COM+, COM+, COM+, COM+, DC24V, DC24V, DC24V. The terminal block is secured by a screw (11) and has a cover (9) that can be removed (10).

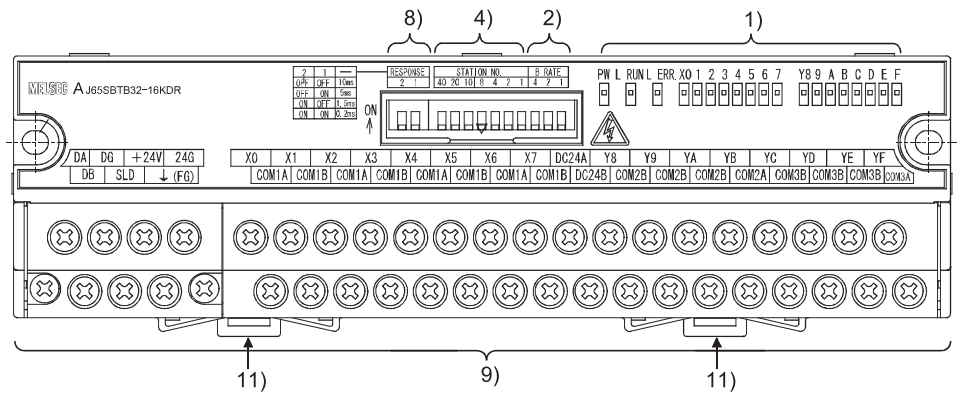
AJ65SBTB32-16K □ (Terminal block 16 point module, 3-wire input, 2-wire output)



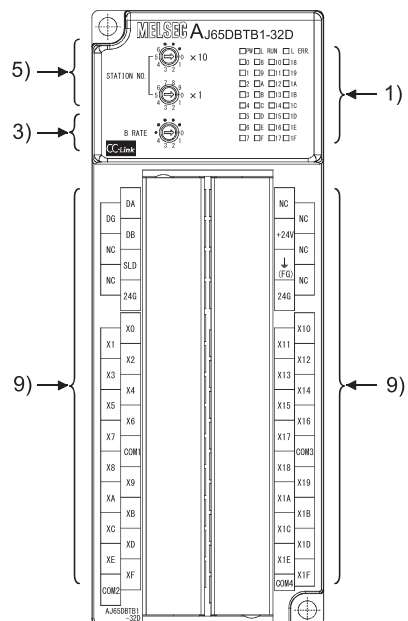
AJ65SBTB32-16DR (Terminal block 16 point module, 3-wire input, 2-wire output)



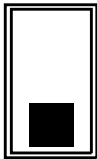
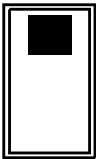
AJ65SBTB32-16KDR (Terminal block 16 point module, 3-wire input, 2-wire output)



AJ65DBTB1-32 □ (Terminal block 32 point module, 1-wire)



| No.     | Item                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
|---------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--|---------|--------------------|---|---------|--------------------|---------|---|----------|---|----------|-----|---------|---------|---|-----|-----|----|---------|---|-----|----|-----|----------|---|-----|----|----|----------|---|----|-----|-----|---------|
| 1)      | Operation status indicator LED    | LED name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Details                                                                                                                                                                                                                                                                                                        |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
|         |                                   | PW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | On: Power being supplied<br>Off: No power supplied                                                                                                                                                                                                                                                             |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
|         |                                   | L RUN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | On: Normal communication<br>Off: No communication (timeout error)                                                                                                                                                                                                                                              |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
|         |                                   | L ERR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | On: Communication error<br>Flashing regularly:<br>The station number or transmission speed switch setting is changed while power is on.<br>Flashing irregularly:<br>The terminating resistor setting is incorrect.<br>The module or CC-Link dedicated cable is affected by noise.<br>Off: Normal communication |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
|         |                                   | X0 to 1F<br>Y0 to 1F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | On: Input/output ON<br>Off: Input/output OFF                                                                                                                                                                                                                                                                   |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 2)      | Transmission speed setting switch | <table><tr><th rowspan="2">Setting</th><th colspan="3">Switch status</th><th rowspan="2">Transmission speed</th></tr><tr><th>4</th><th>2</th><th>1</th></tr><tr><td>0</td><td>OFF</td><td>OFF</td><td>OFF</td><td>156kbps</td></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>ON</td><td>625kbps</td></tr><tr><td>2</td><td>OFF</td><td>ON</td><td>OFF</td><td>2.5 Mbps</td></tr><tr><td>3</td><td>OFF</td><td>ON</td><td>ON</td><td>5.0 Mbps</td></tr><tr><td>4</td><td>ON</td><td>OFF</td><td>OFF</td><td>10 Mbps</td></tr></table> <p>Set the transmission speed within the above range.</p> |                                                                                                                                                                                                                                                                                                                |                    |  | Setting | Switch status      |   |         | Transmission speed | 4       | 2 | 1        | 0 | OFF      | OFF | OFF     | 156kbps | 1 | OFF | OFF | ON | 625kbps | 2 | OFF | ON | OFF | 2.5 Mbps | 3 | OFF | ON | ON | 5.0 Mbps | 4 | ON | OFF | OFF | 10 Mbps |
| Setting | Switch status                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                | Transmission speed |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
|         | 4                                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1                                                                                                                                                                                                                                                                                                              |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 0       | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | 156kbps            |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 1       | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ON                                                                                                                                                                                                                                                                                                             | 625kbps            |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 2       | OFF                               | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OFF                                                                                                                                                                                                                                                                                                            | 2.5 Mbps           |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 3       | OFF                               | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ON                                                                                                                                                                                                                                                                                                             | 5.0 Mbps           |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 4       | ON                                | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | 10 Mbps            |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 3)      | Transmission speed setting switch | <table><tr><th>Setting</th><th>Transmission speed</th></tr><tr><td>0</td><td>156kbps</td></tr><tr><td>1</td><td>625kbps</td></tr><tr><td>2</td><td>2.5 Mbps</td></tr><tr><td>3</td><td>5.0 Mbps</td></tr><tr><td>4</td><td>10 Mbps</td></tr></table> <p>Set the transmission speed within the above range.</p>                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                |                    |  | Setting | Transmission speed | 0 | 156kbps | 1                  | 625kbps | 2 | 2.5 Mbps | 3 | 5.0 Mbps | 4   | 10 Mbps |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| Setting | Transmission speed                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 0       | 156kbps                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 1       | 625kbps                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 2       | 2.5 Mbps                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 3       | 5.0 Mbps                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |
| 4       | 10 Mbps                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                |                    |  |         |                    |   |         |                    |         |   |          |   |          |     |         |         |   |     |     |    |         |   |     |    |     |          |   |     |    |    |          |   |    |     |     |         |

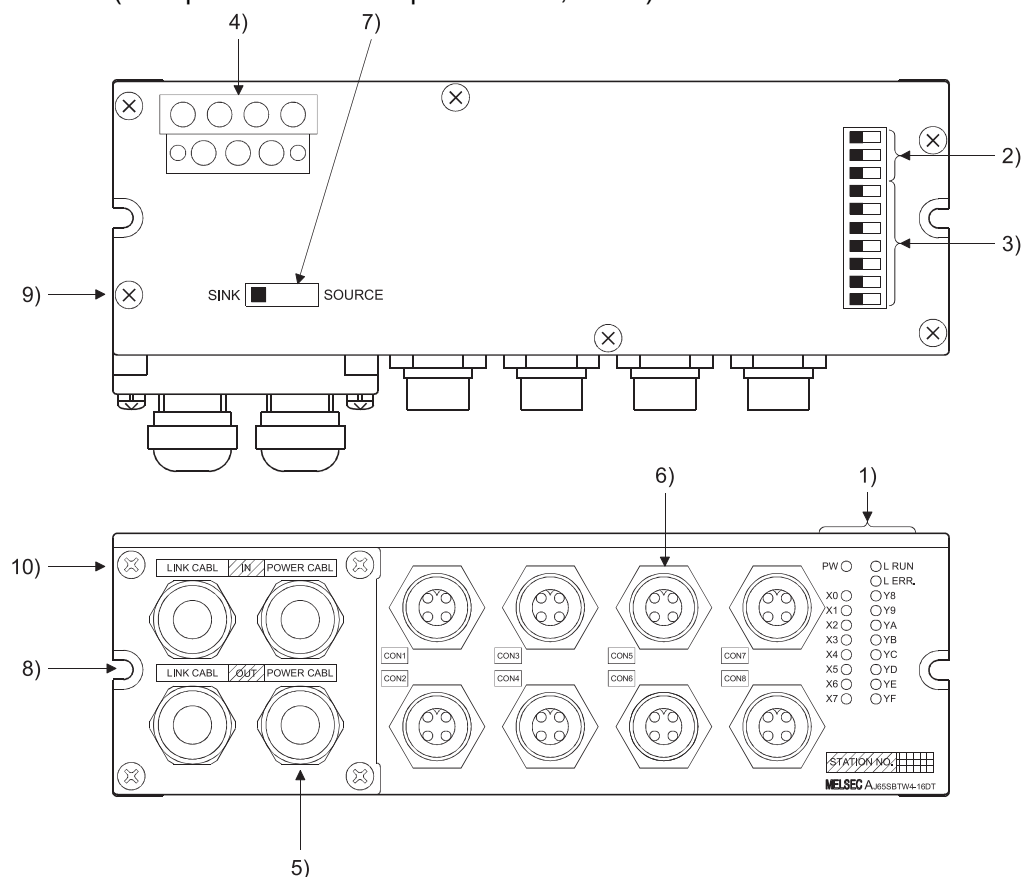
| No.            | Item                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|----------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------|-----|----------------------|------------|---|---|-----|-----|------|----|-----|----|-----|---|----|-----|-------|-----|-----|-----|-------|----|---|-----|-----|-----|-----|-----|----|-----|---|-----|-----|-----|-----|-----|----|--|---|-----|-----|-----|-----|-----|-----|-----|---|---|---|---|---|---|---|---|----|-----|-----|----|-----|-----|-----|-----|----|-----|-----|----|-----|-----|-----|----|---|---|---|---|---|---|---|---|----|----|----|-----|-----|----|-----|-----|----------------|------------|--|--|------------|--|--|--|----|----|----|---|---|---|---|----|-----|----|----|-----|-----|----|-----|
| 4)             | Station number setting switch                  | <p>Select "10", "20", or "40" for the tens place.</p> <p>Select "1", "2", "4", or "8" for the ones place.</p> <p>Set the station number within the range of 1 to 64.<sup>*1</sup></p> <table><tr><th rowspan="2">Station number</th><th colspan="3">Tens place</th><th colspan="4">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>2</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr><tr><td>3</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td></td></tr><tr><td>4</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>10</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>11</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>64</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td></tr></table> <p>(Example) Setting the station number to 32:</p> <table><tr><th rowspan="2">Station number</th><th colspan="3">Tens place</th><th colspan="4">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr><tr><td>32</td><td>OFF</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr></table> | Station number | Tens place           |     |                      | Ones place |   |   |     | 40  | 20   | 10 | 8   | 4  | 2   | 1 | 1  | OFF | OFF   | OFF | OFF | OFF | OFF   | ON | 2 | OFF | OFF | OFF | OFF | OFF | ON | OFF | 3 | OFF | OFF | OFF | OFF | OFF | ON |  | 4 | OFF | OFF | OFF | OFF | OFF | OFF | OFF | : | : | : | : | : | : | : | : | 10 | OFF | OFF | ON | OFF | OFF | OFF | OFF | 11 | OFF | OFF | ON | OFF | OFF | OFF | ON | : | : | : | : | : | : | : | : | 64 | ON | ON | OFF | OFF | ON | OFF | OFF | Station number | Tens place |  |  | Ones place |  |  |  | 40 | 20 | 10 | 8 | 4 | 2 | 1 | 32 | OFF | ON | ON | OFF | OFF | ON | OFF |
| Station number | Tens place                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                | Ones place           |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 40                                             | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10             | 8                    | 4   | 2                    | 1          |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 1              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OFF            | OFF                  | OFF | OFF                  | ON         |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OFF            | OFF                  | OFF | ON                   | OFF        |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OFF            | OFF                  | OFF | ON                   |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OFF            | OFF                  | OFF | OFF                  | OFF        |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| :              | :                                              | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | :              | :                    | :   | :                    | :          |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 10             | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ON             | OFF                  | OFF | OFF                  | OFF        |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 11             | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ON             | OFF                  | OFF | OFF                  | ON         |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| :              | :                                              | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | :              | :                    | :   | :                    | :          |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 64             | ON                                             | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | OFF            | OFF                  | ON  | OFF                  | OFF        |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| Station number | Tens place                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                | Ones place           |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 40                                             | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10             | 8                    | 4   | 2                    | 1          |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 32             | OFF                                            | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ON             | OFF                  | OFF | ON                   | OFF        |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 5)             | Station number setting switch                  | <p>Set the station number within the range of 1 to 64.<sup>*1</sup></p> <ul style="list-style-type: none"><li>• Use "×10" for the tens place.</li><li>• Use "×1" for the ones place.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 6)             | Indication selector switch <sup>*2</sup>       | <p>When the switch is set to "X0-XF", LEDs indicate the ON/OFF status of X0 to XF.</p> <p>When the switch is set to "X10-X1F", LEDs indicate the ON/OFF status of X10 to X1F.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 7)             | Sink/source switch<br>(For AJ65SBTC1-16D only) | <p>Switches the input type (sink or source).</p> <p>Open the module top cover to set the switch.</p> <div><div>&lt;When setting for sink type&gt;</div><div><div>SOURCE</div><div></div><div>SINK</div></div><div>&lt;When setting for source type&gt;</div><div><div>SOURCE</div><div></div><div>SINK</div></div><div>Switch</div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 8)             | Input response speed switch                    | <table><tr><th rowspan="2">Setting</th><th colspan="2">Switch status</th><th rowspan="2">Input response speed</th></tr><tr><th>2</th><th>1</th></tr><tr><td>0</td><td>OFF</td><td>OFF</td><td>10ms</td></tr><tr><td>1</td><td>OFF</td><td>ON</td><td>5ms</td></tr><tr><td>2</td><td>ON</td><td>OFF</td><td>1.5ms</td></tr><tr><td>3</td><td>ON</td><td>ON</td><td>0.2ms</td></tr></table> <p>Default: 2 (1.5ms)<sup>*2</sup></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Setting        | Switch status        |     | Input response speed | 2          | 1 | 0 | OFF | OFF | 10ms | 1  | OFF | ON | 5ms | 2 | ON | OFF | 1.5ms | 3   | ON  | ON  | 0.2ms |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| Setting        | Switch status                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                | Input response speed |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 2                                              | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 0              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10ms           |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 1              | OFF                                            | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5ms            |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2              | ON                                             | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1.5ms          |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3              | ON                                             | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 0.2ms          |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 9)             | Terminal block                                 | Terminal block for module power supply, transmission, and I/O signals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 10)            | Connector                                      | Connector for I/O signals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 11)            | DIN rail hook                                  | When mounting the module to a DIN rail, push in the DIN rail hook until it clicks.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                      |     |                      |            |   |   |     |     |      |    |     |    |     |   |    |     |       |     |     |     |       |    |   |     |     |     |     |     |    |     |   |     |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |

\*<sup>1</sup> A unique station number should be set.

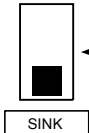
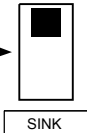
\*<sup>2</sup> The switch setting is reflected/held at power-on.

When it is changed while power is on, turn off the power and then on again.

AJ65SBTW4-16 □ (waterproof connector 16 point module, 1-wire)

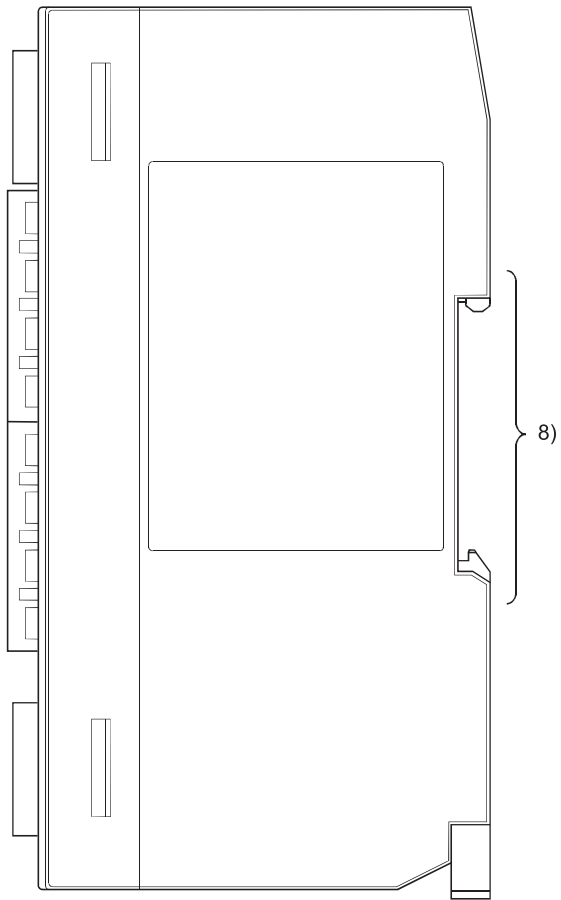
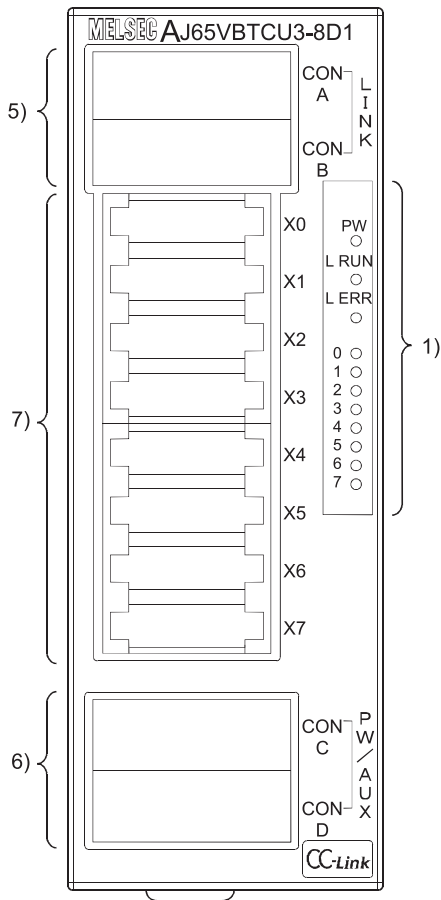
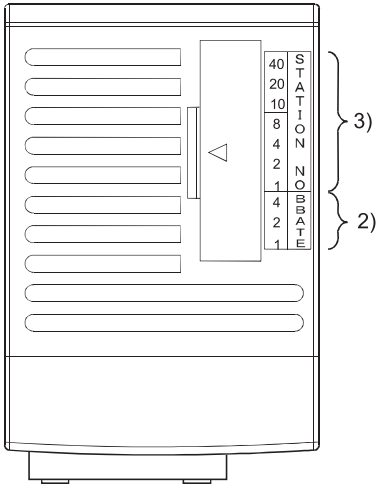


| No. | Item                           | Description        |                                                                                                                                                                                                                                                                                                                |
|-----|--------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                                | LED name           | Details                                                                                                                                                                                                                                                                                                        |
| 1)  | Operating status indicator LED | PW                 | On: Power being supplied<br>Off: No power supplied                                                                                                                                                                                                                                                             |
|     |                                | L RUN              | On: Normal communication<br>Off: No communication (timeout error)                                                                                                                                                                                                                                              |
|     |                                | L ERR.             | On: Communication error<br>Flashing regularly:<br>The station number or transmission speed switch setting is changed while power is on.<br>Flashing irregularly:<br>The terminating resistor setting is incorrect.<br>The module or CC-Link dedicated cable is affected by noise.<br>Off: Normal communication |
|     |                                | X0 to 7<br>Y8 to F | On: Input/output ON<br>Off: Input/output OFF                                                                                                                                                                                                                                                                   |
|     |                                |                    |                                                                                                                                                                                                                                                                                                                |

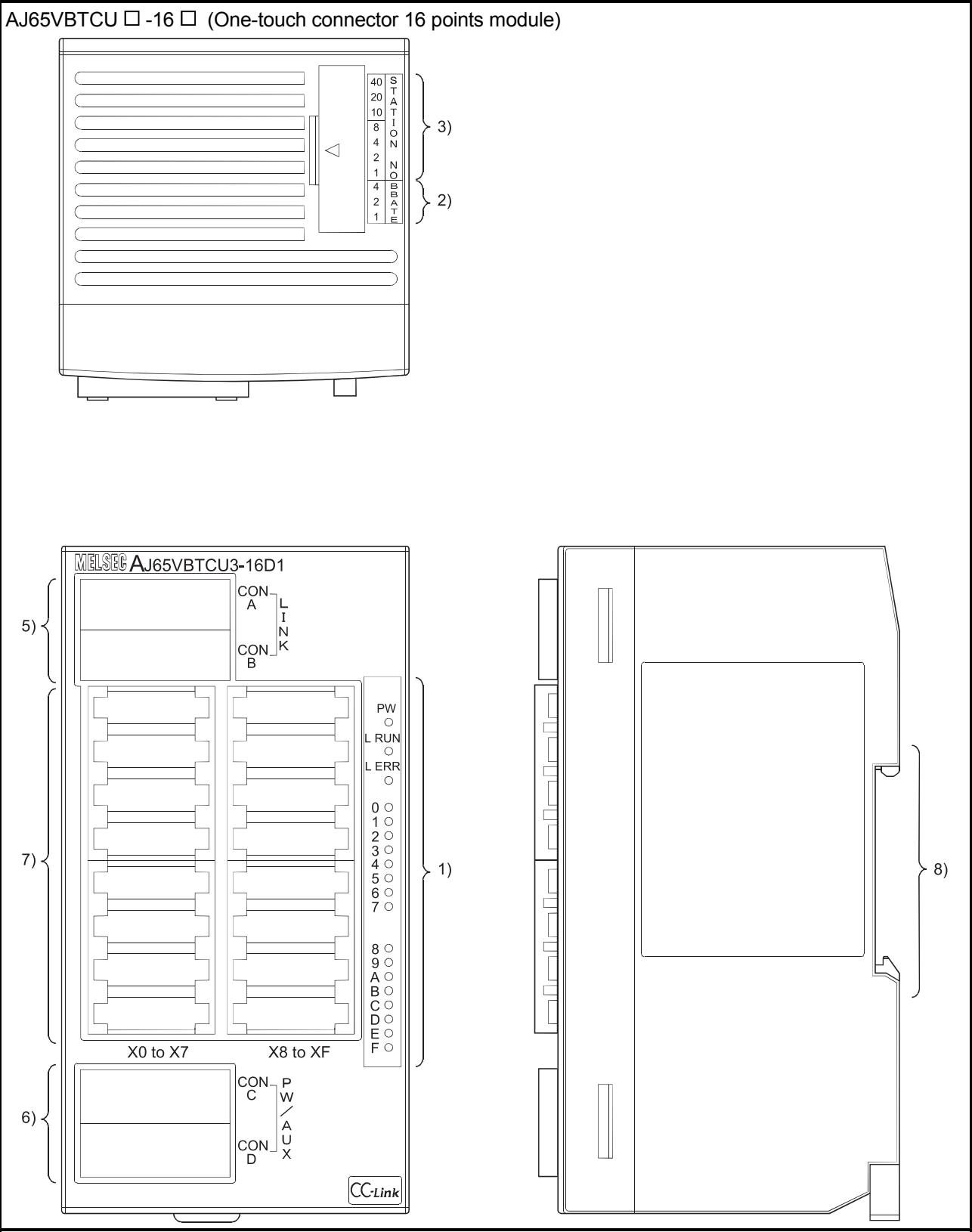
| No.            | Item                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                    |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|----------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------|-----|-----|--------------------|---|---|---|----|-----|-----|-----|---------|---|-----|-----|-----|---------|-----|-----|-----|-----|----------|---|-----|-----|-----|----------|-----|----|-----|-----|---------|-----|-----|-----|-----|----|--|---|-----|-----|-----|-----|-----|-----|-----|---|---|---|---|---|---|---|---|----|-----|-----|----|-----|-----|-----|-----|----|-----|-----|----|-----|-----|-----|----|---|---|---|---|---|---|---|---|----|----|----|-----|-----|----|-----|-----|----------------|------------|--|--|------------|--|--|--|----|----|----|---|---|---|---|----|-----|----|----|-----|-----|----|-----|
| 2)             | Transmission speed setting switch              | <table border="1"><thead><tr><th rowspan="2">Setting</th><th colspan="3">Switch status</th><th rowspan="2">Transmission speed</th></tr><tr><th>4</th><th>2</th><th>1</th></tr></thead><tbody><tr><td>0</td><td>OFF</td><td>OFF</td><td>OFF</td><td>156kbps</td></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>ON</td><td>625kbps</td></tr><tr><td>2</td><td>OFF</td><td>ON</td><td>OFF</td><td>2.5 Mbps</td></tr><tr><td>3</td><td>OFF</td><td>ON</td><td>ON</td><td>5.0 Mbps</td></tr><tr><td>4</td><td>ON</td><td>OFF</td><td>OFF</td><td>10 Mbps</td></tr></tbody></table> <p>Set the transmission speed within the above range.<br/>Open the module top cover to set the transmission speed.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Setting        | Switch status      |     |     | Transmission speed | 4 | 2 | 1 | 0  | OFF | OFF | OFF | 156kbps | 1 | OFF | OFF | ON  | 625kbps | 2   | OFF | ON  | OFF | 2.5 Mbps | 3 | OFF | ON  | ON  | 5.0 Mbps | 4   | ON | OFF | OFF | 10 Mbps |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| Setting        | Switch status                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | Transmission speed |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 4                                              | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1              |                    |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 0              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | OFF            | 156kbps            |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 1              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ON             | 625kbps            |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2              | OFF                                            | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | OFF            | 2.5 Mbps           |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3              | OFF                                            | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ON             | 5.0 Mbps           |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4              | ON                                             | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | OFF            | 10 Mbps            |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3)             | Station number setting switch                  | <p>Select "10", "20", or "40" for the tens place.<br/>Select "1", "2", "4", or "8" for the ones place.<br/>Set the station number within the range of 1 to 64.*1</p> <table border="1"><thead><tr><th rowspan="2">Station number</th><th colspan="3">Tens place</th><th colspan="4">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr></thead><tbody><tr><td>1</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>2</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr><tr><td>3</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td></td></tr><tr><td>4</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>10</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>11</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>64</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td></tr></tbody></table> <p>(Example) Setting the station number to 32:</p> <table border="1"><thead><tr><th rowspan="2">Station number</th><th colspan="3">Tens place</th><th colspan="4">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr></thead><tbody><tr><td>32</td><td>OFF</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr></tbody></table> <p>Open the module top cover to set the station number.</p> | Station number | Tens place         |     |     | Ones place         |   |   |   | 40 | 20  | 10  | 8   | 4       | 2 | 1   | 1   | OFF | OFF     | OFF | OFF | OFF | OFF | ON       | 2 | OFF | OFF | OFF | OFF      | OFF | ON | OFF | 3   | OFF     | OFF | OFF | OFF | OFF | ON |  | 4 | OFF | OFF | OFF | OFF | OFF | OFF | OFF | : | : | : | : | : | : | : | : | 10 | OFF | OFF | ON | OFF | OFF | OFF | OFF | 11 | OFF | OFF | ON | OFF | OFF | OFF | ON | : | : | : | : | : | : | : | : | 64 | ON | ON | OFF | OFF | ON | OFF | OFF | Station number | Tens place |  |  | Ones place |  |  |  | 40 | 20 | 10 | 8 | 4 | 2 | 1 | 32 | OFF | ON | ON | OFF | OFF | ON | OFF |
| Station number | Tens place                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | Ones place         |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 40                                             | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10             | 8                  | 4   | 2   | 1                  |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 1              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | OFF            | OFF                | OFF | OFF | ON                 |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | OFF            | OFF                | OFF | ON  | OFF                |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | OFF            | OFF                | OFF | ON  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4              | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | OFF            | OFF                | OFF | OFF | OFF                |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| :              | :                                              | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | :              | :                  | :   | :   | :                  |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 10             | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ON             | OFF                | OFF | OFF | OFF                |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 11             | OFF                                            | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ON             | OFF                | OFF | OFF | ON                 |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| :              | :                                              | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | :              | :                  | :   | :   | :                  |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 64             | ON                                             | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | OFF            | OFF                | ON  | OFF | OFF                |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| Station number | Tens place                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                | Ones place         |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 40                                             | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10             | 8                  | 4   | 2   | 1                  |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 32             | OFF                                            | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ON             | OFF                | OFF | ON  | OFF                |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4)             | Terminal block                                 | Terminal block for module power supply and transmission circuit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                    |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 5)             | Pipe for transmission or power supply line     | <p>Pipe for connecting a transmission cable or a power supply cable to the terminal block.</p> <p>Open the module top cover to connect a transmission cable or a power supply cable to the terminal block.</p> <p>Attach a waterproof plug provided with the product to the unused pipe.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |                    |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 6)             | Waterproof connector for I/O                   | <p>Waterproof connectors for I/O signals.</p> <p>Attach an optional dustproof cap (A6CAP-DC1) to the unused waterproof connector.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |                    |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 7)             | Sink/source switch<br>(For AJ65SBTW4-16D only) | <p>Switches the input type (sink or source).<br/>Open the module top cover to set the switch.</p> <p>&lt; When setting for sink type &gt;   &lt; When setting for source type &gt;</p> <div><div><div>SOURCE</div><div></div><div>SINK</div></div><div>← Switch →</div><div><div>SOURCE</div><div></div><div>SINK</div></div></div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                    |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 8)             | Metal fitting                                  | FG terminal for module.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                    |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 9)             | Module top-cover installation screw (M3)       | Refer to Section 7.1 for tightening torque value for installation screws.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                    |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 10)            | Module front-cover installation screw (M3)     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                    |     |     |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |

\*1 A unique station number should be set.

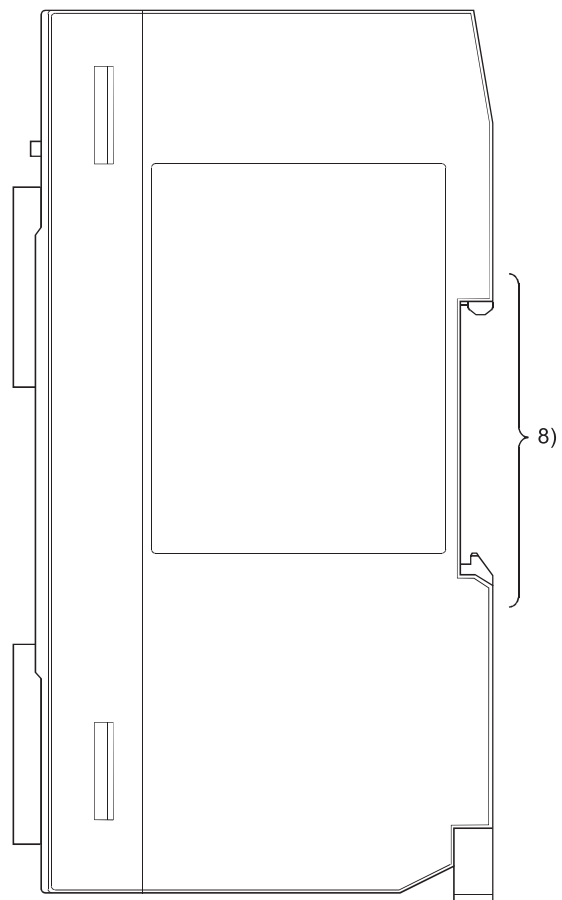
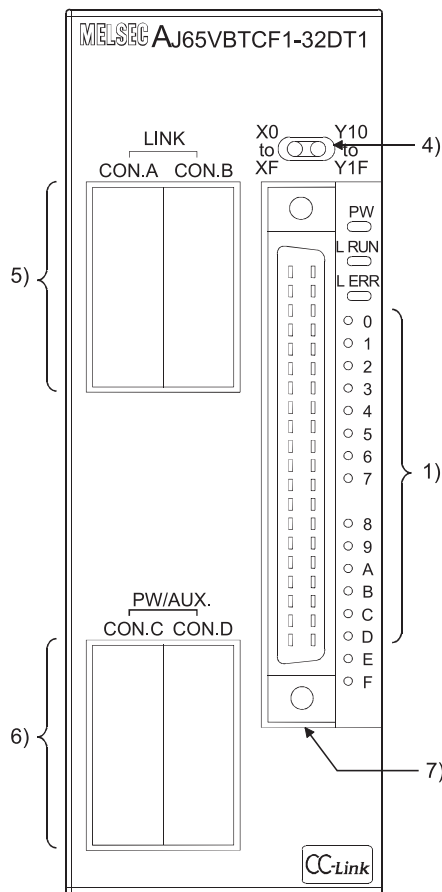
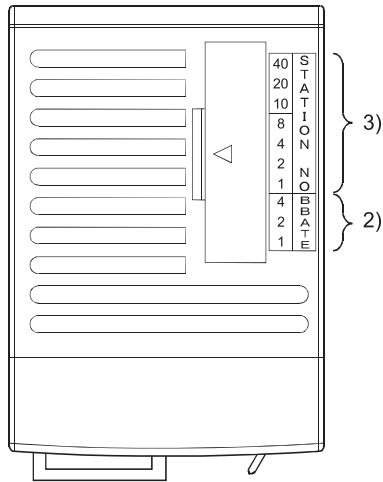
AJ65VBTCU □ -8 □ (One-touch connector 8 points module)







AJ65VBTCF1-32DT1 (1-wire FCN connector 32 points module)



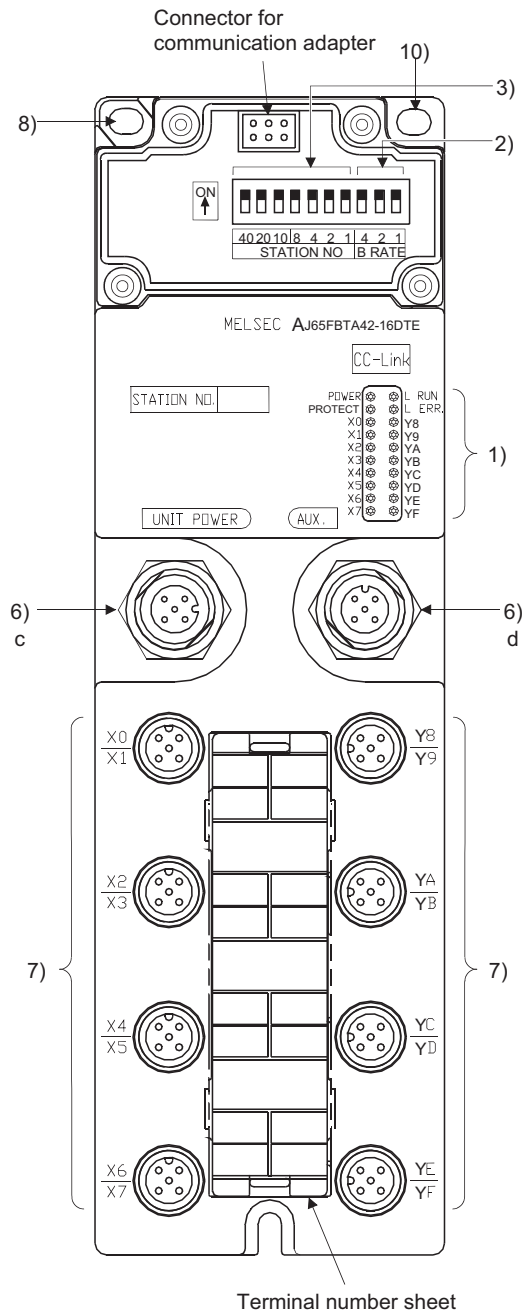
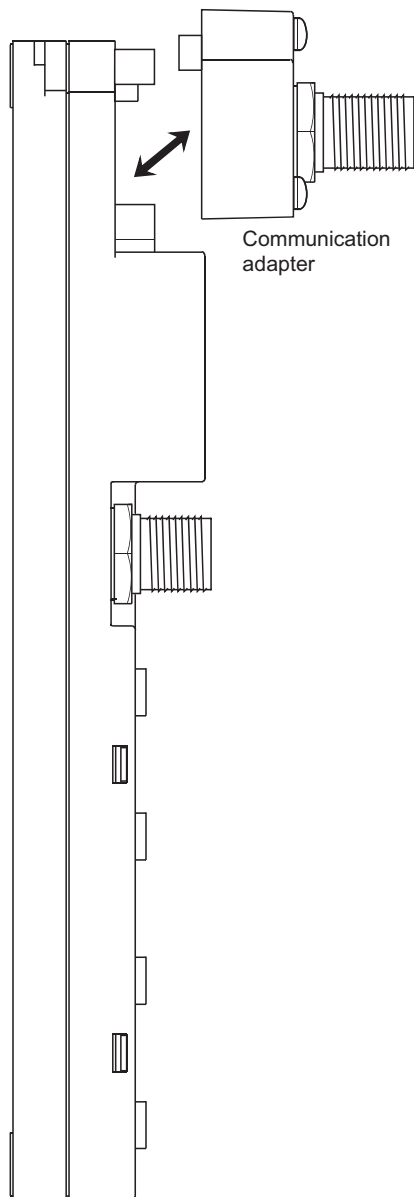
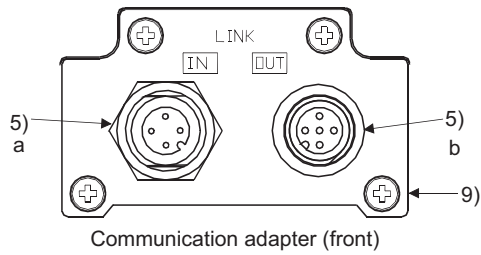
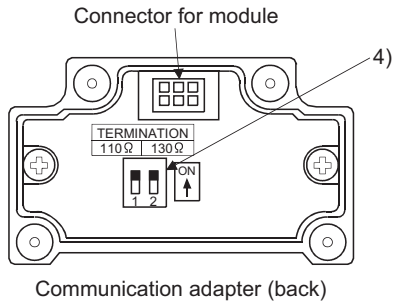
| No.            | Item                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|----------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|----------------|---------------|--|--|--------------------|---|---|---|----|-----|-----|-----|---------|---|-----|-----|-----|---------|-----|-----|-----|-----|----------|---|-----|-----|-----|----------|-----|----|-----|-----|---------|-----|-----|-----|-----|----|--|---|-----|-----|-----|-----|-----|-----|-----|---|---|---|---|---|---|---|---|----|-----|-----|----|-----|-----|-----|-----|----|-----|-----|----|-----|-----|-----|----|---|---|---|---|---|---|---|---|----|----|----|-----|-----|----|-----|-----|----------------|------------|--|--|------------|--|--|--|----|----|----|---|---|---|---|----|-----|----|----|-----|-----|----|-----|
| 1)             | Operating status indicator LED    | LED name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Details                                                                                                                                                                                                                                                                                                        |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                   | PW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | On: Power being supplied<br>Off: No power supplied                                                                                                                                                                                                                                                             |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                   | L RUN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | On: Normal communication<br>Off: No communication (timeout error)                                                                                                                                                                                                                                              |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                   | L ERR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | On: Communication error<br>Flashing regularly:<br>The station number or transmission speed switch setting is changed while power is on.<br>Flashing irregularly:<br>The terminating resistor setting is incorrect.<br>The module or CC-Link dedicated cable is affected by noise.<br>Off: Normal communication |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                   | 0 to F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | On: Input/output ON<br>Off: Input/output OFF                                                                                                                                                                                                                                                                   |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2)             | Transmission speed setting switch | <table><tr><th rowspan="2">Setting</th><th colspan="3">Switch status</th><th rowspan="2">Transmission speed</th></tr><tr><th>4</th><th>2</th><th>1</th></tr><tr><td>0</td><td>OFF</td><td>OFF</td><td>OFF</td><td>156kbps</td></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>ON</td><td>625kbps</td></tr><tr><td>2</td><td>OFF</td><td>ON</td><td>OFF</td><td>2.5 Mbps</td></tr><tr><td>3</td><td>OFF</td><td>ON</td><td>ON</td><td>5.0 Mbps</td></tr><tr><td>4</td><td>ON</td><td>OFF</td><td>OFF</td><td>10 Mbps</td></tr></table> <p>Set the transmission speed within the above range.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                |                    |     | Setting        | Switch status |  |  | Transmission speed | 4 | 2 | 1 | 0  | OFF | OFF | OFF | 156kbps | 1 | OFF | OFF | ON  | 625kbps | 2   | OFF | ON  | OFF | 2.5 Mbps | 3 | OFF | ON  | ON  | 5.0 Mbps | 4   | ON | OFF | OFF | 10 Mbps |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| Setting        | Switch status                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                | Transmission speed |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 4                                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1                                                                                                                                                                                                                                                                                                              |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 0              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | 156kbps            |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 1              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ON                                                                                                                                                                                                                                                                                                             | 625kbps            |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2              | OFF                               | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OFF                                                                                                                                                                                                                                                                                                            | 2.5 Mbps           |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3              | OFF                               | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ON                                                                                                                                                                                                                                                                                                             | 5.0 Mbps           |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4              | ON                                | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | 10 Mbps            |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3)             | Station number setting switch     | <p>Select "10", "20", or "40" for the tens place.<br/>Select "1", "2", "4", or "8" for the ones place.<br/>Set the station number within the range of 1 to 64.*1</p> <table><tr><th rowspan="2">Station number</th><th colspan="3">Tens place</th><th colspan="4">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>2</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr><tr><td>3</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td></td></tr><tr><td>4</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>10</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>11</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>64</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td></tr></table> <p>(Example) Setting the station number to 32:</p> <table><tr><th rowspan="2">Station number</th><th colspan="3">Tens place</th><th colspan="4">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr><tr><td>32</td><td>OFF</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr></table> |                                                                                                                                                                                                                                                                                                                |                    |     | Station number | Tens place    |  |  | Ones place         |   |   |   | 40 | 20  | 10  | 8   | 4       | 2 | 1   | 1   | OFF | OFF     | OFF | OFF | OFF | OFF | ON       | 2 | OFF | OFF | OFF | OFF      | OFF | ON | OFF | 3   | OFF     | OFF | OFF | OFF | OFF | ON |  | 4 | OFF | OFF | OFF | OFF | OFF | OFF | OFF | : | : | : | : | : | : | : | : | 10 | OFF | OFF | ON | OFF | OFF | OFF | OFF | 11 | OFF | OFF | ON | OFF | OFF | OFF | ON | : | : | : | : | : | : | : | : | 64 | ON | ON | OFF | OFF | ON | OFF | OFF | Station number | Tens place |  |  | Ones place |  |  |  | 40 | 20 | 10 | 8 | 4 | 2 | 1 | 32 | OFF | ON | ON | OFF | OFF | ON | OFF |
| Station number | Tens place                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                | Ones place         |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 40                                | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10                                                                                                                                                                                                                                                                                                             | 8                  | 4   | 2              | 1             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 1              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | OFF            | ON            |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | ON             | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | ON             |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | OFF            | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| :              | :                                 | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | :                                                                                                                                                                                                                                                                                                              | :                  | :   | :              | :             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 10             | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ON                                                                                                                                                                                                                                                                                                             | OFF                | OFF | OFF            | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 11             | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ON                                                                                                                                                                                                                                                                                                             | OFF                | OFF | OFF            | ON            |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| :              | :                                 | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | :                                                                                                                                                                                                                                                                                                              | :                  | :   | :              | :             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 64             | ON                                | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OFF                                                                                                                                                                                                                                                                                                            | OFF                | ON  | OFF            | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| Station number | Tens place                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                | Ones place         |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 40                                | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10                                                                                                                                                                                                                                                                                                             | 8                  | 4   | 2              | 1             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 32             | OFF                               | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ON                                                                                                                                                                                                                                                                                                             | OFF                | OFF | ON             | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |

\*1 A unique station number should be set.

| No. | Item                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4)  | Indication selector switch <sup>*2</sup> | When the switch is set to "X0-XF", LEDs indicate the ON/OFF status of X0 to XF.<br>When the switch is set to "Y10-Y1F", LEDs indicate the ON/OFF status of Y10 to Y1F.                                                                                                                                                                                                                                                                                                                                                                                             |
| 5)  | Connector for communication              | One-touch connector for communication line.<br>When carrying out wiring, connect two optional one-touch connector plugs for communication (A6CON-L5P) at top and bottom.<br>When changing the module online, connect the optional online connectors (A6CON-LJ5P) between the connector and plugs.<br>When the module is used at either end of the CC-Link system, attach an optional one-touch connector plug with terminating resistor (110Ω) (A6CON-TR11(N)).                                                                                                    |
| 6)  | Connector for power supply and FG        | One-touch connector for module power supply line, I/O power supply line, and FG.<br>When carrying out jumper wiring, connect two optional one-touch connector plugs for power supply and FG at top and bottom. Two different types (A6CON-PW5P, A6CON-PW5P-SOD) are available as the one-touch connector plugs for power supply and FG.<br>When not carrying out jumper wiring, also connect the plugs (for safety and dust prevention).<br>When changing the module online, connect the optional online connectors (A6CON-PWJ5P) between the connector and plugs. |
| 7)  | Connector                                | Connector for I/O signals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 8)  | DIN rail hook                            | Hook to install the module to the DIN rail or connector type Metal installation fitting (option).<br>When mounting the module to a DIN rail, push in the DIN rail hook until it clicks.                                                                                                                                                                                                                                                                                                                                                                            |

\*2 To operate the indication selector switch, do not use a tool such as a screwdriver. Doing so may damage the switch.

AJ65FBTA□-16□ (Low profile waterproof connector 16 points module)



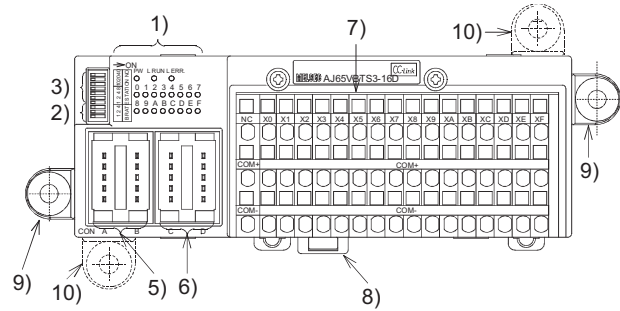
| No.            | Item                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
|----------------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|-----|----------------|---------------|------------|---|--------------------|-----|-----|-------------------------|----|-----|---------------------------|-----|---------|---------------------------|-----|-----|--------------------|---------|-----|-----|-----|-----|----------|-----|-----|----|----|----------|---|----|-----|-----|---------|
| 1)             | Operating status indicator LED    | LED name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Details                                                                                                                                                                                                                                                                                                        |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
|                |                                   | POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | On: Power being supplied<br>Off: No power supplied                                                                                                                                                                                                                                                             |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
|                |                                   | PROTECT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | On: Any protection of the output part was activated.<br>(The blown fuse was detected in the master module.)<br>Off: Normal operation                                                                                                                                                                           |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
|                |                                   | L RUN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | On: Normal communication<br>Off: No communication (timeout error)                                                                                                                                                                                                                                              |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
|                |                                   | L ERR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | On: Communication error<br>Flashing regularly:<br>The station number or transmission speed switch setting is changed while power is on.<br>Flashing irregularly:<br>The terminating resistor setting is incorrect.<br>The module or CC-Link dedicated cable is affected by noise.<br>Off: Normal communication |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
|                |                                   | X0 to X7/<br>Y0 to YF/<br>X0 to X7,<br>Y8 to YF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | On: Input/output ON<br>Off: Input/output OFF                                                                                                                                                                                                                                                                   |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| 2)             | Transmission speed setting switch | <table><tr><th rowspan="2">Setting</th><th colspan="3">Switch status</th><th rowspan="2">Transmission speed</th></tr><tr><th>4</th><th>2</th><th>1</th></tr><tr><td>0</td><td>OFF</td><td>OFF</td><td>OFF</td><td>156kbps</td></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>ON</td><td>625kbps</td></tr><tr><td>2</td><td>OFF</td><td>ON</td><td>OFF</td><td>2.5 Mbps</td></tr><tr><td>3</td><td>OFF</td><td>ON</td><td>ON</td><td>5.0 Mbps</td></tr><tr><td>4</td><td>ON</td><td>OFF</td><td>OFF</td><td>10 Mbps</td></tr></table> <p>Set the transmission speed within the above range.<br/>Remove the communication adapter to set the transmission speed. (Default: all OFF)</p> |                                                                                                                                                                                                                                                                                                                |                    |     |     | Setting        | Switch status |            |   | Transmission speed | 4   | 2   | 1                       | 0  | OFF | OFF                       | OFF | 156kbps | 1                         | OFF | OFF | ON                 | 625kbps | 2   | OFF | ON  | OFF | 2.5 Mbps | 3   | OFF | ON | ON | 5.0 Mbps | 4 | ON | OFF | OFF | 10 Mbps |
| Setting        | Switch status                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                | Transmission speed |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
|                | 4                                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1                                                                                                                                                                                                                                                                                                              |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| 0              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | OFF                                                                                                                                                                                                                                                                                                            | 156kbps            |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| 1              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ON                                                                                                                                                                                                                                                                                                             | 625kbps            |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| 2              | OFF                               | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | OFF                                                                                                                                                                                                                                                                                                            | 2.5 Mbps           |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| 3              | OFF                               | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ON                                                                                                                                                                                                                                                                                                             | 5.0 Mbps           |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| 4              | ON                                | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | OFF                                                                                                                                                                                                                                                                                                            | 10 Mbps            |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| 3)             | Station number setting switch     | <p>Select "10", "20", or "40" for the tens place.<br/>Select "1", "2", "4", or "8" for the ones place.<br/>Set the station number within the range of 1 to 64.*1<br/>(Example) Setting the station number to 32:</p> <table><tr><th rowspan="2">Station number</th><th>Tens place</th><th colspan="7">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr><tr><td>10</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr></table> <p>Remove the communication adapter to set the station number. (Default: all OFF)</p>                                                                      |                                                                                                                                                                                                                                                                                                                |                    |     |     | Station number | Tens place    | Ones place |   |                    |     |     |                         |    | 40  | 20                        | 10  | 8       | 4                         | 2   | 1   | 10                 | ON      | OFF | ON  | OFF | OFF | OFF      | OFF |     |    |    |          |   |    |     |     |         |
| Station number | Tens place                        | Ones place                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
|                | 40                                | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 10                                                                                                                                                                                                                                                                                                             | 8                  | 4   | 2   | 1              |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| 10             | ON                                | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ON                                                                                                                                                                                                                                                                                                             | OFF                | OFF | OFF | OFF            |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| 4)             | Terminal resistor setting switch  | <p>Used to set the terminating resistor.</p> <table><tr><th colspan="2">DIP switch</th><th rowspan="2">Contents</th></tr><tr><th>1</th><th>2</th></tr><tr><td>OFF</td><td>OFF</td><td>No terminating resistor</td></tr><tr><td>ON</td><td>OFF</td><td>110Ω terminating resistor</td></tr><tr><td>OFF</td><td>ON</td><td>130Ω terminating resistor</td></tr><tr><td>ON</td><td>ON</td><td>Setting prohibited</td></tr></table> <p>(Default: all OFF)</p>                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                |                    |     |     | DIP switch     |               | Contents   | 1 | 2                  | OFF | OFF | No terminating resistor | ON | OFF | 110Ω terminating resistor | OFF | ON      | 130Ω terminating resistor | ON  | ON  | Setting prohibited |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| DIP switch     |                                   | Contents                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| 1              | 2                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| OFF            | OFF                               | No terminating resistor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| ON             | OFF                               | 110Ω terminating resistor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| OFF            | ON                                | 130Ω terminating resistor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |
| ON             | ON                                | Setting prohibited                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                |                    |     |     |                |               |            |   |                    |     |     |                         |    |     |                           |     |         |                           |     |     |                    |         |     |     |     |     |          |     |     |    |    |          |   |    |     |     |         |

\*1 A unique station number should be set.

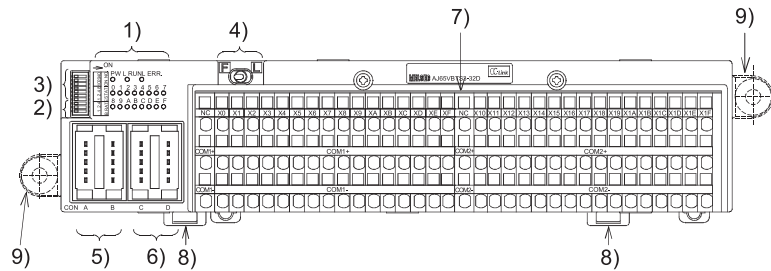
| No. | Item                                                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |
|-----|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|-------------|---|--------------------------------------------------------------------------|----------------------------------------------------------------------------------|---|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5)  | Waterproof connector for transmission line <sup>*2</sup>                 | <table> <tr> <th></th><th>Printing</th><th>Description</th></tr> <tr> <td>a</td><td>LINK <span style="border: 1px solid black; padding: 0 2px;">IN</span></td><td>Connector (male, 4 pins) for the IN-side (master station side) transmission line</td></tr> <tr> <td>b</td><td>LINK <span style="border: 1px solid black; padding: 0 2px;">OUT</span></td><td>Connector (female, 5 pins) for the OUT-side transmission line.<br/>Attach a waterproof cap (accessory) to the unused connector.<br/>(Tightening torque range: 0.29 to 0.34N•m)</td></tr> </table> |  | Printing | Description | a | LINK <span style="border: 1px solid black; padding: 0 2px;">IN</span>    | Connector (male, 4 pins) for the IN-side (master station side) transmission line | b | LINK <span style="border: 1px solid black; padding: 0 2px;">OUT</span> | Connector (female, 5 pins) for the OUT-side transmission line.<br>Attach a waterproof cap (accessory) to the unused connector.<br>(Tightening torque range: 0.29 to 0.34N•m) |
|     | Printing                                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |
| a   | LINK <span style="border: 1px solid black; padding: 0 2px;">IN</span>    | Connector (male, 4 pins) for the IN-side (master station side) transmission line                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |
| b   | LINK <span style="border: 1px solid black; padding: 0 2px;">OUT</span>   | Connector (female, 5 pins) for the OUT-side transmission line.<br>Attach a waterproof cap (accessory) to the unused connector.<br>(Tightening torque range: 0.29 to 0.34N•m)                                                                                                                                                                                                                                                                                                                                                                                     |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |
| 6)  | Waterproof connector for power line <sup>*2</sup>                        | <table> <tr> <th></th><th>Printing</th><th>Description</th></tr> <tr> <td>c</td><td><span style="border: 1px solid black; padding: 0 2px;">UNIT POWER</span></td><td>Connector (male, 5 pins) for supplying power to the module</td></tr> <tr> <td>d</td><td><span style="border: 1px solid black; padding: 0 2px;">AUX.</span></td><td>Connector (male, 5 pins) for supplying power to loads</td></tr> </table>                                                                                                                                                 |  | Printing | Description | c | <span style="border: 1px solid black; padding: 0 2px;">UNIT POWER</span> | Connector (male, 5 pins) for supplying power to the module                       | d | <span style="border: 1px solid black; padding: 0 2px;">AUX.</span>     | Connector (male, 5 pins) for supplying power to loads                                                                                                                        |
|     | Printing                                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |
| c   | <span style="border: 1px solid black; padding: 0 2px;">UNIT POWER</span> | Connector (male, 5 pins) for supplying power to the module                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |
| d   | <span style="border: 1px solid black; padding: 0 2px;">AUX.</span>       | Connector (male, 5 pins) for supplying power to loads                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |
| 7)  | Waterproof connector for I/O <sup>*2</sup>                               | Waterproof connectors for I/O signals.<br>Attach an optional waterproof cap (A6CAP-WP2) to the unused waterproof connector.<br>(Tightening torque range: 0.29 to 0.34N•m)                                                                                                                                                                                                                                                                                                                                                                                        |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |
| 8)  | FG terminal                                                              | FG terminal for module                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |
| 9)  | Communication adapter mounting screw                                     | Used to mount or remove a communication adapter while the module is online.<br>(Tightening torque range: 0.42 to 0.58N•m)                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |
| 10) | Module mounting hole                                                     | Screw holes for mounting the module (2-4.5 × 6, M4 screw)<br>(Tightening torque range: 0.78 to 1.18N•m)                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |          |             |   |                                                                          |                                                                                  |   |                                                                        |                                                                                                                                                                              |

\*2 Waterproof connector (compliant with IEC 60947-5-2, M12)

**AJ65VBTS□-16□** (Spring clamp terminal block type 16 points module)



**AJ65VBTS□-32□** (Spring clamp terminal block type 32 points module)





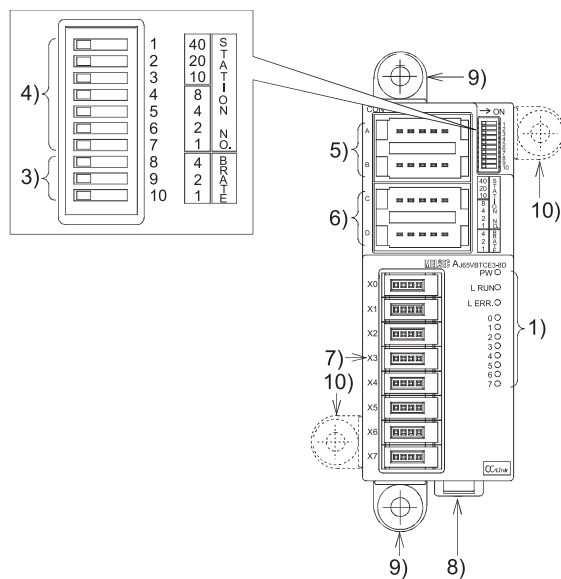
| No.            | Item                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|----------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|----------------|---------------|--|--|--------------------|---|---|---|----|-----|-----|-----|---------|---|-----|-----|-----|---------|-----|-----|-----|-----|----------|---|-----|-----|-----|----------|-----|----|-----|-----|---------|-----|-----|-----|-----|----|--|---|-----|-----|-----|-----|-----|-----|-----|---|---|---|---|---|---|---|---|----|-----|-----|----|-----|-----|-----|-----|----|-----|-----|----|-----|-----|-----|----|---|---|---|---|---|---|---|---|----|----|----|-----|-----|----|-----|-----|----------------|------------|--|--|------------|--|--|--|----|----|----|---|---|---|---|----|-----|----|----|-----|-----|----|-----|
| 1)             | Operating status indicator LED    | LED name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Details                                                                                                                                                                                                                                                                                                        |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                   | PW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | On: Power being supplied<br>Off: No power supplied                                                                                                                                                                                                                                                             |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                   | L RUN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | On: Normal communication<br>Off: No communication (timeout error)                                                                                                                                                                                                                                              |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                   | L ERR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | On: Communication error<br>Flashing regularly:<br>The station number or transmission speed switch setting is changed while power is on.<br>Flashing irregularly:<br>The terminating resistor setting is incorrect.<br>The module or CC-Link dedicated cable is affected by noise.<br>Off: Normal communication |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                   | 0 to F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | On: Input/output ON<br>Off: Input/output OFF                                                                                                                                                                                                                                                                   |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2)             | Transmission speed setting switch | <table><tr><th rowspan="2">Setting</th><th colspan="3">Switch status</th><th rowspan="2">Transmission speed</th></tr><tr><th>4</th><th>2</th><th>1</th></tr><tr><td>0</td><td>OFF</td><td>OFF</td><td>OFF</td><td>156kbps</td></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>ON</td><td>625kbps</td></tr><tr><td>2</td><td>OFF</td><td>ON</td><td>OFF</td><td>2.5 Mbps</td></tr><tr><td>3</td><td>OFF</td><td>ON</td><td>ON</td><td>5.0 Mbps</td></tr><tr><td>4</td><td>ON</td><td>OFF</td><td>OFF</td><td>10 Mbps</td></tr></table> <p>Set the transmission speed within the above range.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                |                    |     | Setting        | Switch status |  |  | Transmission speed | 4 | 2 | 1 | 0  | OFF | OFF | OFF | 156kbps | 1 | OFF | OFF | ON  | 625kbps | 2   | OFF | ON  | OFF | 2.5 Mbps | 3 | OFF | ON  | ON  | 5.0 Mbps | 4   | ON | OFF | OFF | 10 Mbps |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| Setting        | Switch status                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                | Transmission speed |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 4                                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1                                                                                                                                                                                                                                                                                                              |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 0              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | 156kbps            |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 1              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ON                                                                                                                                                                                                                                                                                                             | 625kbps            |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2              | OFF                               | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OFF                                                                                                                                                                                                                                                                                                            | 2.5 Mbps           |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3              | OFF                               | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ON                                                                                                                                                                                                                                                                                                             | 5.0 Mbps           |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4              | ON                                | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | 10 Mbps            |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3)             | Station number setting switch     | <p>Select "10", "20", or "40" for the tens place.<br/>Select "1", "2", "4", or "8" for the ones place.<br/>Set the station number within the range of 1 to 64.*1</p> <table><tr><th rowspan="2">Station number</th><th colspan="3">Tens place</th><th colspan="4">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>2</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr><tr><td>3</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td></td></tr><tr><td>4</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>10</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>11</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>64</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td></tr></table> <p>(Example) Setting the station number to 32:</p> <table><tr><th rowspan="2">Station number</th><th colspan="3">Tens place</th><th colspan="4">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr><tr><td>32</td><td>OFF</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr></table> |                                                                                                                                                                                                                                                                                                                |                    |     | Station number | Tens place    |  |  | Ones place         |   |   |   | 40 | 20  | 10  | 8   | 4       | 2 | 1   | 1   | OFF | OFF     | OFF | OFF | OFF | OFF | ON       | 2 | OFF | OFF | OFF | OFF      | OFF | ON | OFF | 3   | OFF     | OFF | OFF | OFF | OFF | ON |  | 4 | OFF | OFF | OFF | OFF | OFF | OFF | OFF | : | : | : | : | : | : | : | : | 10 | OFF | OFF | ON | OFF | OFF | OFF | OFF | 11 | OFF | OFF | ON | OFF | OFF | OFF | ON | : | : | : | : | : | : | : | : | 64 | ON | ON | OFF | OFF | ON | OFF | OFF | Station number | Tens place |  |  | Ones place |  |  |  | 40 | 20 | 10 | 8 | 4 | 2 | 1 | 32 | OFF | ON | ON | OFF | OFF | ON | OFF |
| Station number | Tens place                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                | Ones place         |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 40                                | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10                                                                                                                                                                                                                                                                                                             | 8                  | 4   | 2              | 1             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 1              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | OFF            | ON            |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | ON             | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | ON             |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4              | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | OFF            | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| :              | :                                 | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | :                                                                                                                                                                                                                                                                                                              | :                  | :   | :              | :             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 10             | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ON                                                                                                                                                                                                                                                                                                             | OFF                | OFF | OFF            | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 11             | OFF                               | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ON                                                                                                                                                                                                                                                                                                             | OFF                | OFF | OFF            | ON            |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| :              | :                                 | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | :                                                                                                                                                                                                                                                                                                              | :                  | :   | :              | :             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 64             | ON                                | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | OFF                                                                                                                                                                                                                                                                                                            | OFF                | ON  | OFF            | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| Station number | Tens place                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                | Ones place         |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 40                                | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10                                                                                                                                                                                                                                                                                                             | 8                  | 4   | 2              | 1             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 32             | OFF                               | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ON                                                                                                                                                                                                                                                                                                             | OFF                | OFF | ON             | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |

\*1 A unique station number should be set.

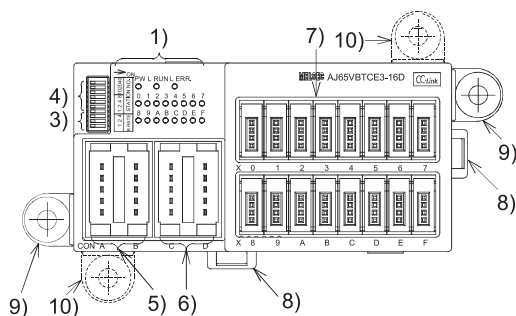
| No.       | Item                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4)        | Indication selector switch <sup>*2</sup> | When the switch is set to "F", LEDs indicate the ON/OFF status of the first 16 points.<br>When the switch is set to "L", LEDs indicate the ON/OFF status of the latter 16 points.                                                                                                                                                                                                                                                                                                                                                           |
| 5)        | Connector for communication              | One-touch connector for communication line.<br>When carrying out wiring, connect two optional one-touch connector plugs for communication (A6CON-L5P) at top and bottom.<br>When changing the module online, connect the optional online connectors (A6CON-LJ5P) between the connector and plugs.<br>When the module is used at either end of the CC-Link system, attach an optional one-touch connector plug with terminating resistor (110Ω) (A6CON-TR11(N)).                                                                             |
| 6)        | Connector for power supply and FG        | One-touch connector for module power supply line, and FG.<br>When carrying out jumper wiring, connect two optional one-touch connector plugs for power supply and FG at top and bottom. Two different types (A6CON-PW5P, A6CON-PW5P-SOD) are available as the one-touch connector plugs for power supply and FG.<br>When not carrying out jumper wiring, also connect the plugs (for safety and dust prevention).<br>When changing the module online, connect the optional online connectors (A6CON-PWJ5P) between the connector and plugs. |
| 7)        | 2-piece spring clamp terminal block      | 2-piece terminal block for I/O signals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 8)        | DIN rail hook                            | Hook to install the module to the DIN rail or connector type Metal installation fitting (option). When mounting the module to a DIN rail, push in the DIN rail hook until it clicks.                                                                                                                                                                                                                                                                                                                                                        |
| 9)<br>10) | Mounting bracket (accessory)             | Used to install the module to a control panel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

\*2 To operate the indication selector switch, do not use a tool such as a screwdriver. Doing so may damage the switch.

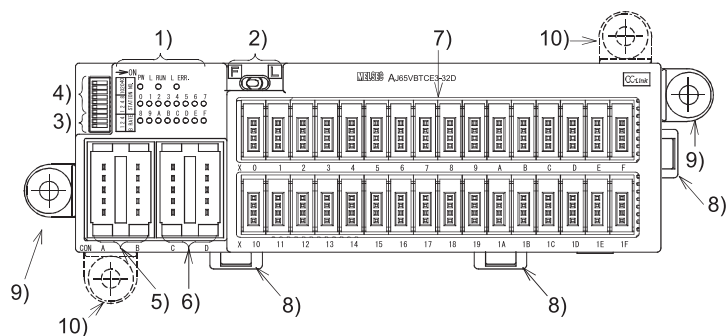
AJ65VBTCE□-8□ (Sensor connector (e-CON) type 8 points module)



AJ65VBTCE□-16□ (Sensor connector (e-CON) type 16 points module)



AJ65VBTCE□-32□ (Sensor connector (e-CON) type 32 points module)



| No.            | Item                                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|----------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|----------------|---------------|--|--|--------------------|---|---|---|----|-----|-----|-----|---------|---|-----|-----|-----|---------|-----|-----|-----|-----|----------|---|-----|-----|-----|----------|-----|----|-----|-----|---------|-----|-----|-----|-----|----|--|---|-----|-----|-----|-----|-----|-----|-----|---|---|---|---|---|---|---|---|----|-----|-----|----|-----|-----|-----|-----|----|-----|-----|----|-----|-----|-----|----|---|---|---|---|---|---|---|---|----|----|----|-----|-----|----|-----|-----|----------------|------------|--|--|------------|--|--|--|----|----|----|---|---|---|---|----|-----|----|----|-----|-----|----|-----|
| 1)             | Operating status indicator LED           | LED name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Details                                                                                                                                                                                                                                                                                                        |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                          | PW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | On: Power being supplied<br>Off: No power supplied                                                                                                                                                                                                                                                             |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                          | L RUN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | On: Normal communication<br>Off: No communication (timeout error)                                                                                                                                                                                                                                              |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                          | L ERR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | On: Communication error<br>Flashing regularly:<br>The station number or transmission speed switch setting is changed while power is on.<br>Flashing irregularly:<br>The terminating resistor setting is incorrect.<br>The module or CC-Link dedicated cable is affected by noise.<br>Off: Normal communication |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                |                                          | 0 to F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | On: Input/output ON<br>Off: Input/output OFF                                                                                                                                                                                                                                                                   |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2)             | Indication selector switch <sup>*1</sup> | When the switch is set to "F", LEDs indicate the ON/OFF status of the first 16 points.<br>When the switch is set to "L", LEDs indicate the ON/OFF status of the latter 16 points.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3)             | Transmission speed setting switch        | <table><tr><th rowspan="2">Setting</th><th colspan="3">Switch status</th><th rowspan="2">Transmission speed</th></tr><tr><th>4</th><th>2</th><th>1</th></tr><tr><td>0</td><td>OFF</td><td>OFF</td><td>OFF</td><td>156kbps</td></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>ON</td><td>625kbps</td></tr><tr><td>2</td><td>OFF</td><td>ON</td><td>OFF</td><td>2.5 Mbps</td></tr><tr><td>3</td><td>OFF</td><td>ON</td><td>ON</td><td>5.0 Mbps</td></tr><tr><td>4</td><td>ON</td><td>OFF</td><td>OFF</td><td>10 Mbps</td></tr></table><br>Set the transmission speed within the above range.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                |                    |     | Setting        | Switch status |  |  | Transmission speed | 4 | 2 | 1 | 0  | OFF | OFF | OFF | 156kbps | 1 | OFF | OFF | ON  | 625kbps | 2   | OFF | ON  | OFF | 2.5 Mbps | 3 | OFF | ON  | ON  | 5.0 Mbps | 4   | ON | OFF | OFF | 10 Mbps |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| Setting        | Switch status                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                | Transmission speed |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 4                                        | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1                                                                                                                                                                                                                                                                                                              |                    |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 0              | OFF                                      | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | OFF                                                                                                                                                                                                                                                                                                            | 156kbps            |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 1              | OFF                                      | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ON                                                                                                                                                                                                                                                                                                             | 625kbps            |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2              | OFF                                      | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | OFF                                                                                                                                                                                                                                                                                                            | 2.5 Mbps           |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3              | OFF                                      | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ON                                                                                                                                                                                                                                                                                                             | 5.0 Mbps           |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4              | ON                                       | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | OFF                                                                                                                                                                                                                                                                                                            | 10 Mbps            |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4)             | Station number setting switch            | Select "10", "20", or "40" for the tens place.<br>Select "1", "2", "4", or "8" for the ones place.<br>Set the station number within the range of 1 to 64. <sup>*1</sup><br><table><tr><th rowspan="2">Station number</th><th colspan="3">Tens place</th><th colspan="4">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr><tr><td>1</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>2</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr><tr><td>3</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td><td></td></tr><tr><td>4</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>10</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td></tr><tr><td>11</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td><td>:</td></tr><tr><td>64</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td><td>OFF</td></tr></table><br>(Example) Setting the station number to 32:<br><table><tr><th rowspan="2">Station number</th><th colspan="3">Tens place</th><th colspan="4">Ones place</th></tr><tr><th>40</th><th>20</th><th>10</th><th>8</th><th>4</th><th>2</th><th>1</th></tr><tr><td>32</td><td>OFF</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td><td>OFF</td></tr></table> |                                                                                                                                                                                                                                                                                                                |                    |     | Station number | Tens place    |  |  | Ones place         |   |   |   | 40 | 20  | 10  | 8   | 4       | 2 | 1   | 1   | OFF | OFF     | OFF | OFF | OFF | OFF | ON       | 2 | OFF | OFF | OFF | OFF      | OFF | ON | OFF | 3   | OFF     | OFF | OFF | OFF | OFF | ON |  | 4 | OFF | OFF | OFF | OFF | OFF | OFF | OFF | : | : | : | : | : | : | : | : | 10 | OFF | OFF | ON | OFF | OFF | OFF | OFF | 11 | OFF | OFF | ON | OFF | OFF | OFF | ON | : | : | : | : | : | : | : | : | 64 | ON | ON | OFF | OFF | ON | OFF | OFF | Station number | Tens place |  |  | Ones place |  |  |  | 40 | 20 | 10 | 8 | 4 | 2 | 1 | 32 | OFF | ON | ON | OFF | OFF | ON | OFF |
| Station number | Tens place                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                | Ones place         |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 40                                       | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10                                                                                                                                                                                                                                                                                                             | 8                  | 4   | 2              | 1             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 1              | OFF                                      | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | OFF            | ON            |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 2              | OFF                                      | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | ON             | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 3              | OFF                                      | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | ON             |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 4              | OFF                                      | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | OFF                                                                                                                                                                                                                                                                                                            | OFF                | OFF | OFF            | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| :              | :                                        | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | :                                                                                                                                                                                                                                                                                                              | :                  | :   | :              | :             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 10             | OFF                                      | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ON                                                                                                                                                                                                                                                                                                             | OFF                | OFF | OFF            | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 11             | OFF                                      | OFF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ON                                                                                                                                                                                                                                                                                                             | OFF                | OFF | OFF            | ON            |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| :              | :                                        | :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | :                                                                                                                                                                                                                                                                                                              | :                  | :   | :              | :             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 64             | ON                                       | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | OFF                                                                                                                                                                                                                                                                                                            | OFF                | ON  | OFF            | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| Station number | Tens place                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                | Ones place         |     |                |               |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
|                | 40                                       | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10                                                                                                                                                                                                                                                                                                             | 8                  | 4   | 2              | 1             |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |
| 32             | OFF                                      | ON                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ON                                                                                                                                                                                                                                                                                                             | OFF                | OFF | ON             | OFF           |  |  |                    |   |   |   |    |     |     |     |         |   |     |     |     |         |     |     |     |     |          |   |     |     |     |          |     |    |     |     |         |     |     |     |     |    |  |   |     |     |     |     |     |     |     |   |   |   |   |   |   |   |   |    |     |     |    |     |     |     |     |    |     |     |    |     |     |     |    |   |   |   |   |   |   |   |   |    |    |    |     |     |    |     |     |                |            |  |  |            |  |  |  |    |    |    |   |   |   |   |    |     |    |    |     |     |    |     |

\*1 A unique station number should be set.

| No.       | Item                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5)        | Connector for communication       | <p>One-touch connector for communication line.</p> <p>When carrying out wiring, connect two optional one-touch connector plugs for communication (A6CON-L5P) at top and bottom.</p> <p>When changing the module online, connect the optional online connectors (A6CON-LJ5P) between the connector and plugs.</p> <p>When the module is used at either end of the CC-Link system, attach an optional one-touch connector plug with terminating resistor (110Ω) (A6CON-TR11(N)).</p>                                                                                                    |
| 6)        | Connector for power supply and FG | <p>One-touch connector for module power supply line, I/O power supply line, and FG.</p> <p>When carrying out jumper wiring, connect two optional one-touch connector plugs for power supply and FG at top and bottom. Two different types (A6CON-PW5P, A6CON-PW5P-SOD) are available as the one-touch connector plugs for power supply and FG.</p> <p>When not carrying out jumper wiring, also connect the plugs (for safety and dust prevention).</p> <p>When changing the module online, connect the optional online connectors (A6CON-PWJ5P) between the connector and plugs.</p> |
| 7)        | Connector for I/O                 | Connector for I/O signals.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8)        | DIN rail hook                     | Hook to install the module to the DIN rail or connector type Metal installation fitting (option). When mounting the module to a DIN rail, push in the DIN rail hook until it clicks.                                                                                                                                                                                                                                                                                                                                                                                                  |
| 9)<br>10) | Mounting bracket (accessory)      | <p>Used to install the module to a control panel.</p> <p>(Can be attached in two different ways, 9) and 10).)</p> <p>Holding fixtures for screw installation are removal.</p>                                                                                                                                                                                                                                                                                                                                                                                                         |

## 3 GENERAL SPECIFICATIONS

The following table lists the general specifications of the compact type remote I/O module.

| Item                                | Specifications                                                                                                  |                              |              |                       |                |                                     |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------|--------------|-----------------------|----------------|-------------------------------------|
| Operating ambient temperature       | 0 to 55°C * <sup>6</sup>                                                                                        |                              |              |                       |                |                                     |
| Storage ambient temperature         | -20 to 75°C * <sup>6</sup>                                                                                      |                              |              |                       |                |                                     |
| Operating ambient humidity          | 10 to 90% RH, non-condensing<br>(The waterproof type remote I/O module is compliant with IP67. * <sup>4</sup> ) |                              |              |                       |                |                                     |
| Storage ambient humidity            | 10 to 90% RH, non-condensing                                                                                    |                              |              |                       |                |                                     |
| Vibration resistance                | Compliant with JIS B 3502 and IEC 61131-2                                                                       |                              | Frequency    | Constant acceleration | Half amplitude | Sweep count                         |
|                                     |                                                                                                                 | Under intermittent vibration | 5 to 8.4Hz   | —                     | 3.5mm          | 10 times each in X, Y, Z directions |
|                                     |                                                                                                                 |                              | 8.4 to 150Hz | 9.8m/s <sup>2</sup>   | —              |                                     |
|                                     |                                                                                                                 | Under continuous vibration   | 5 to 8.4Hz   | —                     | 1.75mm         | —                                   |
|                                     |                                                                                                                 |                              | 8.4 to 150Hz | 4.9m/s <sup>2</sup>   | —              |                                     |
| Shock resistance                    | Compliant with JIS B 3502 and IEC 61131-2<br>(147 m/s <sup>2</sup> , 3 times each in 3 directions X, Y, Z)      |                              |              |                       |                |                                     |
| Operating atmosphere                | No corrosive gases                                                                                              |                              |              |                       |                |                                     |
| Operating altitude * <sup>3</sup>   | 0 to 2000m                                                                                                      |                              |              |                       |                |                                     |
| Installation location               | Inside a control panel * <sup>5</sup>                                                                           |                              |              |                       |                |                                     |
| Overvoltage category * <sup>1</sup> | II or less                                                                                                      |                              |              |                       |                |                                     |
| Pollution degree * <sup>2</sup>     | 2 or less                                                                                                       |                              |              |                       |                |                                     |

- \*1 This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises.  
Category II applies to equipment for which electrical power is supplied from fixed facilities.  
The surge voltage withstand level for up to the rated voltage of 300V is 2500V.
- \*2 This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used.  
Pollution level 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensing must be expected occasionally.
- \*3 Do not use or store the programmable controller under pressure higher than the atmospheric pressure of altitude 0m. Doing so may cause malfunction. When using the programmable controller under pressure, please consult your local Mitsubishi representative.
- \*4 This applies only when all waterproof connectors are being used or when waterproof caps are attached to unused waterproof connectors or pipes. (Only the AJ65SBTW□-16□ has pipes.)
- \*5 The module can be used in an environment other than inside a control panel if the conditions such as the operating ambient temperature and humidity are satisfied.
- \*6 For the waterproof type remote I/O module (AJ65SBTW□-16□ only), the operating ambient temperature and storage ambient temperature will be as follows.

| Item                          | Specifications                   |             |
|-------------------------------|----------------------------------|-------------|
| Operating ambient temperature | 0 to 45°C                        |             |
| Storage ambient temperature   | Not wired (individual product)   | -20 to 65°C |
|                               | Wired (after cable installation) | -10 to 55°C |

**REMARK**

To ensure that the product maintains EMC and Low Voltage Directives, certain measures may be necessary. Please refer to the user's manual for the CPU module used.

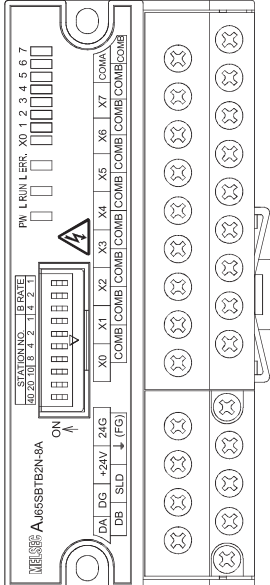
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## 4 SPECIFICATIONS FOR INPUT MODULES

This chapter describes the specifications for an input module that can be connected to the CC-Link system.

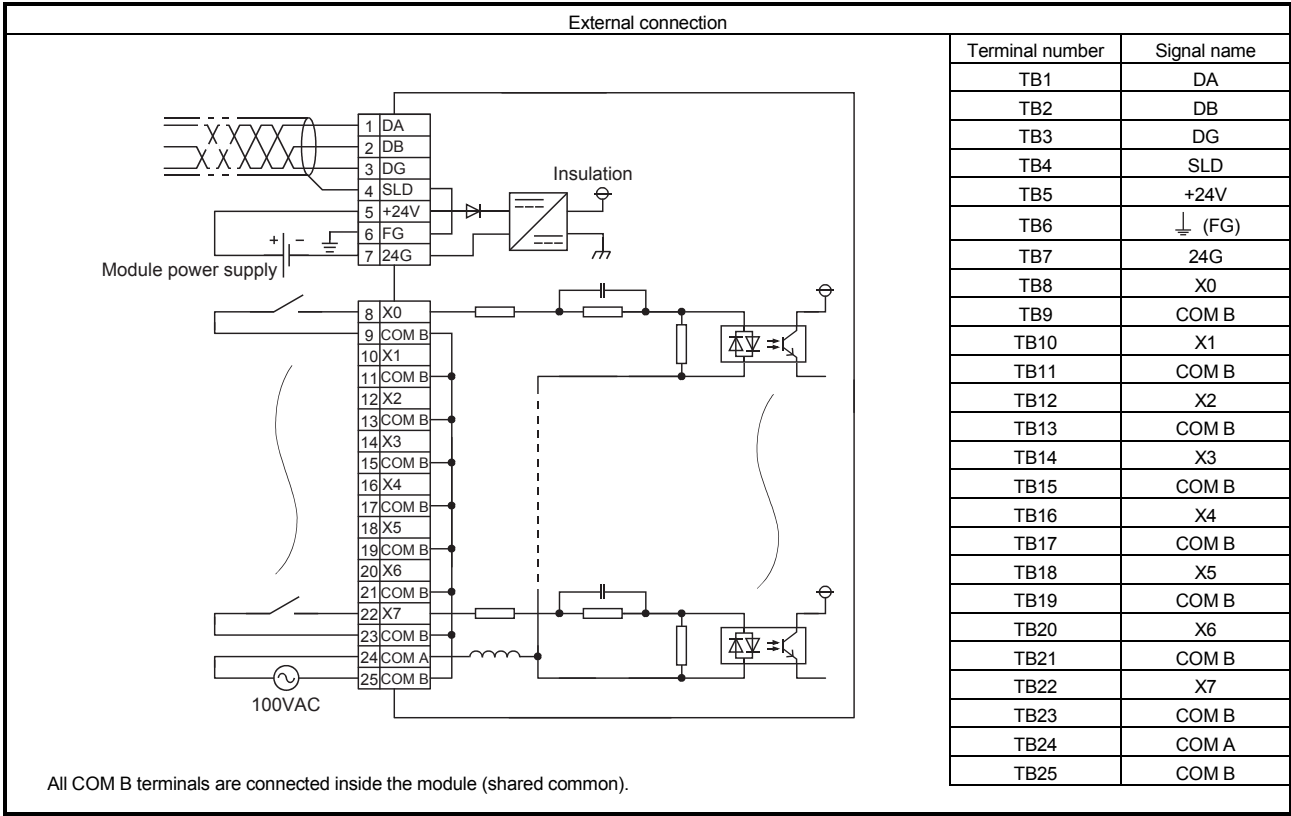
## 4.1 Terminal Block Type Input Module

## 4.1.1 AJ65SBTB2N-8A 100VAC input module

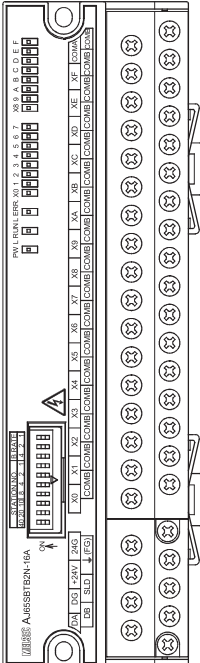
| Type                                     |                                              | AC input module                                                                                                                                                                                                                              |                                                                                       |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Item                                     |                                              | AJ65SBTB2N-8A                                                                                                                                                                                                                                | Appearance                                                                            |
| Number of input points                   |                                              | 8 points                                                                                                                                                                                                                                     |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 |                                                                                       |
| Rated input voltage/rated frequency      |                                              | 100 to 120VAC, 50/60Hz                                                                                                                                                                                                                       |                                                                                       |
| Rated input current                      |                                              | Approx. 7mA (at 100VAC, 60Hz)                                                                                                                                                                                                                |                                                                                       |
| Operating voltage range                  |                                              | 85 to 132VAC (50/60Hz $\pm 3$ Hz, ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                       |
| Max. number of simultaneous input points |                                              | 100% (at 110VAC)<br>60% (at 132VAC)                                                                                                                                                                                                          |                                                                                       |
| Max. inrush current                      |                                              | 200mA within 1ms (at 132VAC)                                                                                                                                                                                                                 |                                                                                       |
| ON voltage/ON current                    |                                              | 80VAC or higher/3.5mA or higher                                                                                                                                                                                                              |                                                                                       |
| OFF voltage/OFF current                  |                                              | 30VAC or lower/1.7mA or lower                                                                                                                                                                                                                |                                                                                       |
| Input resistance                         |                                              | Approx. 15k $\Omega$ at 60Hz, approx. 18k $\Omega$ at 50Hz                                                                                                                                                                                   |                                                                                       |
| Response time                            | OFF→ON                                       | 20ms or less (at 100VAC, 60Hz)                                                                                                                                                                                                               |                                                                                       |
|                                          | ON→OFF                                       | 20ms or less (at 100VAC, 60Hz)                                                                                                                                                                                                               |                                                                                       |
| Wiring method for common                 |                                              | 8 points/common (2-wire, terminal block type)                                                                                                                                                                                                |                                                                                       |
| Number of occupied stations              |                                              | 32-point assignment/station (8 points used)                                                                                                                                                                                                  |                                                                                       |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                                                                       |
|                                          | Current                                      | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                                                                       |
| Noise immunity                           |                                              | Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1 $\mu$ s, noise frequency 25 to 60Hz (noise simulator condition)<br>Fast transient/burst immunity test IEC 61000-4-4:1kV                                                  |                                                                                       |
| Withstand voltage                        |                                              | 1780VACrms for 3 cycles between all AC external terminals and ground (2000m above sea level)<br>500VAC for 1 minute between all DC external terminals and ground                                                                             |                                                                                       |
| Insulation resistance                    |                                              | 10M $\Omega$ or higher between all AC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                    |                                                                                       |
|                                          |                                              | 10M $\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                    |                                                                                       |
| Weight                                   |                                              | 0.20kg                                                                                                                                                                                                                                       |                                                                                       |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                  |                                                                                       |
|                                          | I/O power supply part, I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                               |                                                                                       |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                                                                                       |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                                                                       |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                                                                       |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                                                                                       |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                                                                                       |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                                                                                       |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

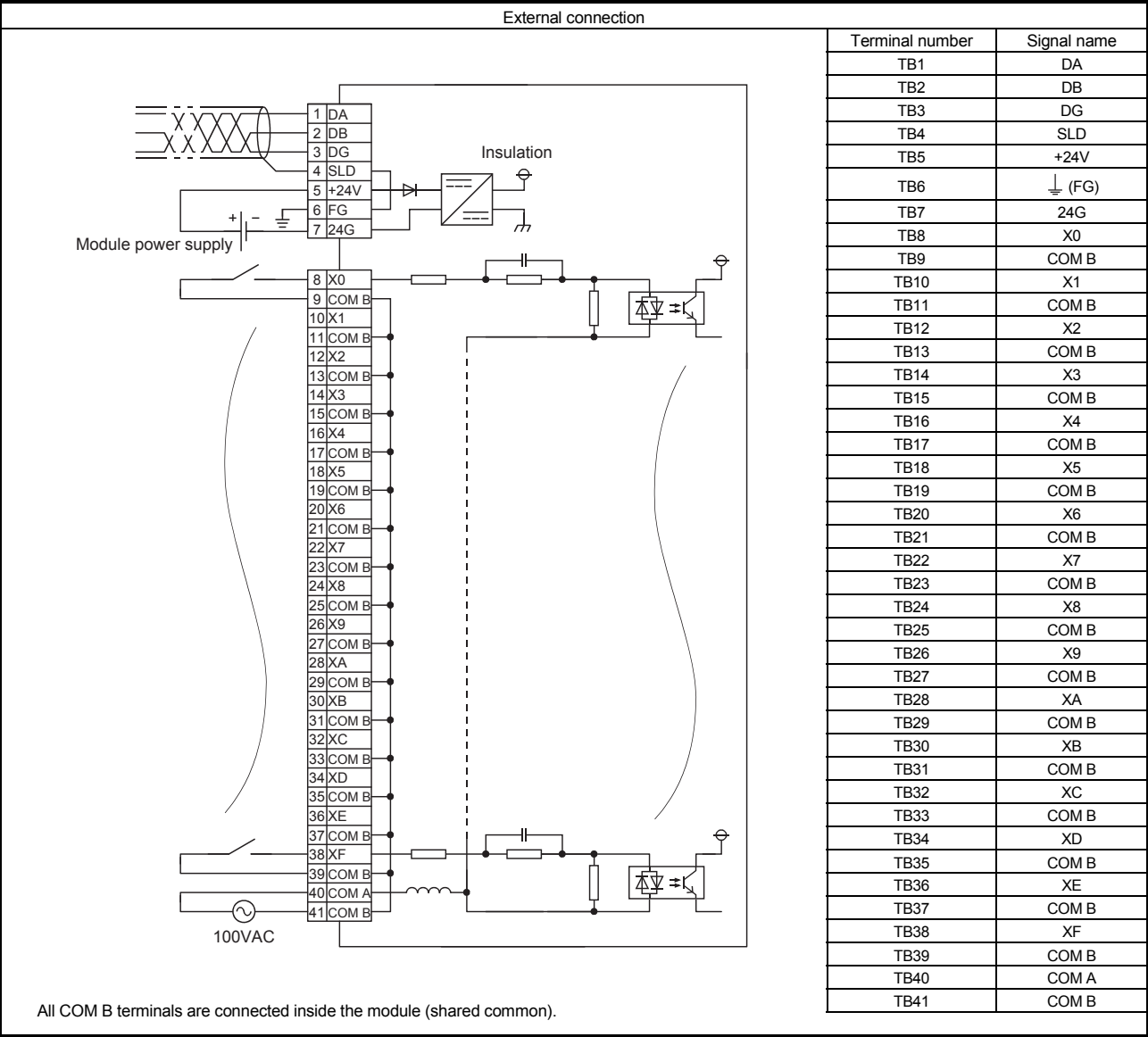




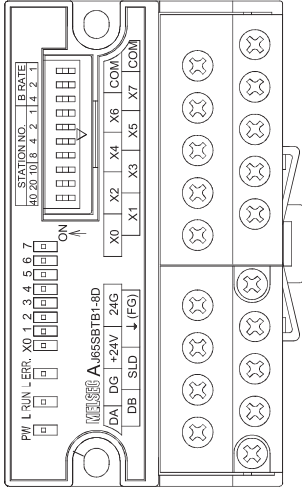
## 4.1.2 AJ65SBTB2N-16A 100VAC input module

| Item                                     |                                              | Type | AC input module                                                                                                                                                                                                                              | Appearance                                                                           |
|------------------------------------------|----------------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                              |      | AJ65SBTB2N-16A                                                                                                                                                                                                                               |                                                                                      |
| Number of input points                   |                                              |      | 16 points                                                                                                                                                                                                                                    |  |
| Isolation method                         |                                              |      | Photocoupler                                                                                                                                                                                                                                 |                                                                                      |
| Rated input voltage/rated frequency      |                                              |      | 100 to 120VAC, 50/60Hz                                                                                                                                                                                                                       |                                                                                      |
| Rated input current                      |                                              |      | Approx. 7mA (at 100VAC, 60Hz)                                                                                                                                                                                                                |                                                                                      |
| Operating voltage range                  |                                              |      | 85 to 132VAC (50/60Hz $\pm$ 3Hz, ripple ratio: within 5%)                                                                                                                                                                                    |                                                                                      |
| Max. number of simultaneous input points |                                              |      | 100% (at 110VAC),<br>60% (at 132VAC)                                                                                                                                                                                                         |                                                                                      |
| Max. inrush current                      |                                              |      | 200mA within 1ms (at 132VAC)                                                                                                                                                                                                                 |                                                                                      |
| ON voltage/ON current                    |                                              |      | 80VAC or higher/5mA or higher                                                                                                                                                                                                                |                                                                                      |
| OFF voltage/OFF current                  |                                              |      | 30VAC or lower/1.7mA or lower                                                                                                                                                                                                                |                                                                                      |
| Input resistance                         |                                              |      | Approx. 15k $\Omega$ at 60Hz, approx. 18k $\Omega$ at 50Hz                                                                                                                                                                                   |                                                                                      |
| Response time                            | OFF→ON                                       |      | 20ms or less (at 100VAC, 60Hz)                                                                                                                                                                                                               |                                                                                      |
|                                          | ON→OFF                                       |      | 20ms or less (at 100VAC, 60Hz)                                                                                                                                                                                                               |                                                                                      |
| Wiring method for common                 |                                              |      | 16 points/common (2-wire, terminal block type)                                                                                                                                                                                               |                                                                                      |
| Number of occupied stations              |                                              |      | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |                                                                                      |
| Module power supply                      | Voltage                                      |      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                                                                      |
|                                          | Current                                      |      | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                                                                      |
| Noise immunity                           |                                              |      | Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1 $\mu$ s,<br>noise frequency 25 to 60Hz (noise simulator condition)<br>Fast transient/burst immunity test IEC61000-4-4:1kV                                                |                                                                                      |
| Withstand voltage                        |                                              |      | 1780VACrms for 3 cycles between all AC external terminals and ground (2000m above sea level)<br>500VAC for 1 minute between all DC external terminals and ground                                                                             |                                                                                      |
| Insulation resistance                    |                                              |      | 10M $\Omega$ or higher between all AC external terminals and ground (500VDC insulation resistance tester)<br>10M $\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                       |                                                                                      |
| Weight                                   |                                              |      | 0.25kg                                                                                                                                                                                                                                       |                                                                                      |
| External connection system               | Communication part, module power supply part |      | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3 $\times$ 5.2 screw (tightening torque range: 0.59 to 0.88N $\cdot$ m)<br>Applicable solderless terminal: 2 or less                                 |                                                                                      |
|                                          | I/O power supply part, I/O part              |      | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3 $\times$ 5.2 screw (tightening torque range: 0.59 to 0.88N $\cdot$ m)<br>Applicable solderless terminal: 2 or less                                              |                                                                                      |
| Module mounting screw                    |                                              |      | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N $\cdot$ m)<br>Mountable with a DIN rail in 6 orientations                                                                                                  |                                                                                      |
| Applicable DIN rail                      |                                              |      | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                                                                      |
| Applicable solderless terminal           |                                              |      | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                                                                      |
| Wire                                     | Material                                     |      | Copper                                                                                                                                                                                                                                       |                                                                                      |
|                                          | Temperature rating                           |      | 75°C or more                                                                                                                                                                                                                                 |                                                                                      |
| Accessory                                |                                              |      | User's manual                                                                                                                                                                                                                                |                                                                                      |

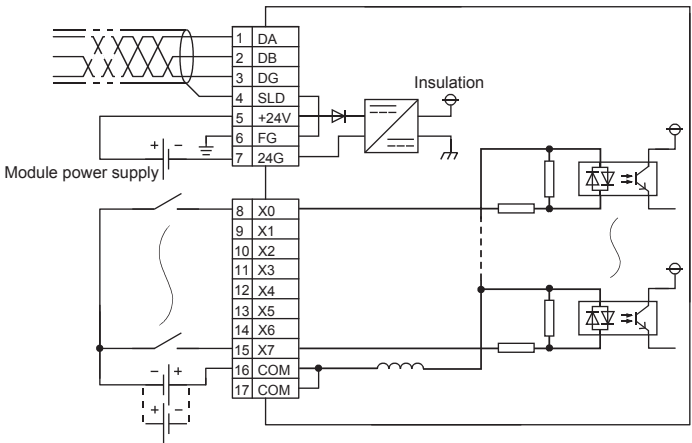
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 4.1.3 AJ65SBTB1-8D 24VDC input module (positive common (sink), negative common (source) loading)

| Type                                     |                          | DC input module                                                                                                                                                                                                                                                                                  |                                                                                      |
|------------------------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                     |                          | AJ65SBTB1-8D                                                                                                                                                                                                                                                                                     | Appearance                                                                           |
| Number of input points                   |                          | 8 points                                                                                                                                                                                                                                                                                         |  |
| Isolation method                         |                          | Photocoupler                                                                                                                                                                                                                                                                                     |                                                                                      |
| Rated input voltage                      |                          | 24VDC                                                                                                                                                                                                                                                                                            |                                                                                      |
| Rated input current                      |                          | Approx. 7mA                                                                                                                                                                                                                                                                                      |                                                                                      |
| Operating voltage range                  |                          | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
| Max. number of simultaneous input points |                          | 100%                                                                                                                                                                                                                                                                                             |                                                                                      |
| ON voltage/ON current                    |                          | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                                                                                  |                                                                                      |
| OFF voltage/OFF current                  |                          | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                                                                     |                                                                                      |
| Input resistance                         |                          | Approx. 3.3kΩ                                                                                                                                                                                                                                                                                    |                                                                                      |
| Response time                            | OFF→ON                   | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                         |                                                                                      |
|                                          | ON→OFF                   | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                         |                                                                                      |
| Wiring method for common                 |                          | 8 points/common (2 points) (1-wire, terminal block type)                                                                                                                                                                                                                                         |                                                                                      |
| Input type                               |                          | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                                                                   |                                                                                      |
| Number of occupied stations              |                          | 32-point assignment/station (8 points used)                                                                                                                                                                                                                                                      |                                                                                      |
| Module power supply                      | Voltage                  | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
|                                          | Current                  | 30mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |                                                                                      |
| Noise immunity                           |                          | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |                                                                                      |
| Withstand voltage                        |                          | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |                                                                                      |
| Insulation resistance                    |                          | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |                                                                                      |
| Protection degree                        |                          | IP2X                                                                                                                                                                                                                                                                                             |                                                                                      |
| Weight                                   |                          | 0.14kg                                                                                                                                                                                                                                                                                           |                                                                                      |
| External connection system               | Communication part       | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]                                                                                                                                                                                                                 |                                                                                      |
|                                          | module power supply part | M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)                                                                                                                                                                                                                                          |                                                                                      |
|                                          | I/O power supply part    | 10-point direct-mount terminal block [I/O power supply, I/O signal]                                                                                                                                                                                                                              |                                                                                      |
|                                          | I/O part                 | M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)                                                                                                                                                                                                                                          |                                                                                      |
| Module mounting screw                    |                          | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                              |                                                                                      |
| Applicable DIN rail                      |                          | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |                                                                                      |
| Applicable solderless terminal           |                          | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                     | Material                 | Copper                                                                                                                                                                                                                                                                                           |                                                                                      |
|                                          | Temperature rating       | 75°C or more                                                                                                                                                                                                                                                                                     |                                                                                      |
| Accessory                                |                          | User's manual                                                                                                                                                                                                                                                                                    |                                                                                      |

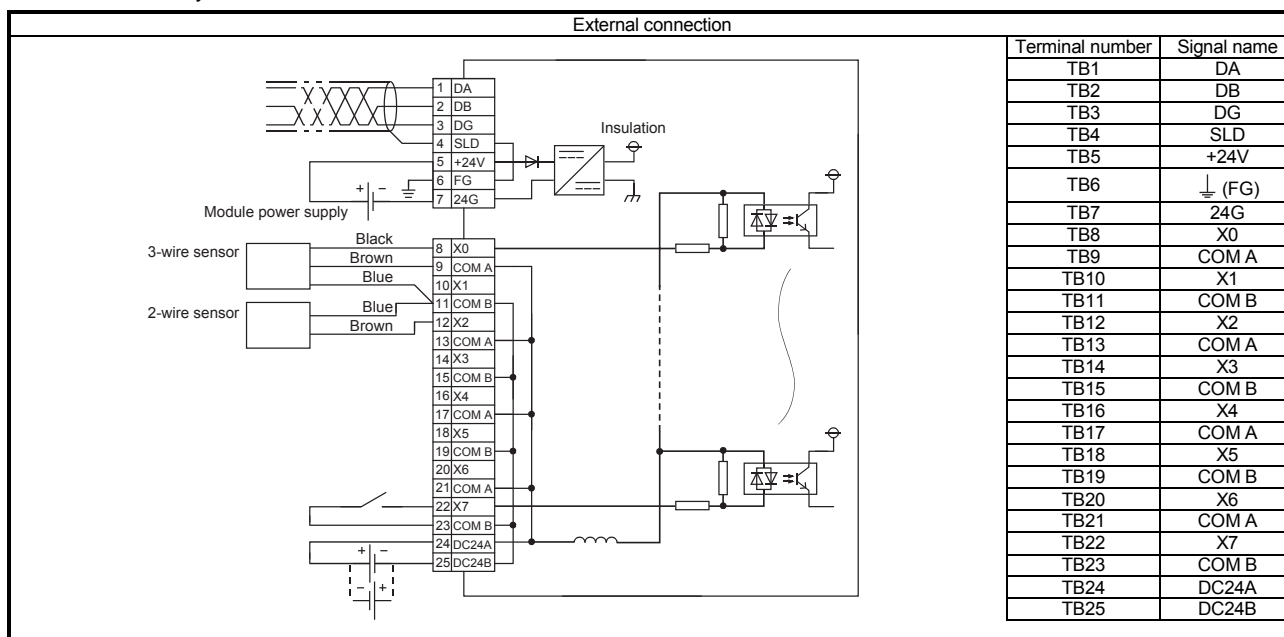
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

| External connection                                                                 |  | Terminal number | Signal name |
|-------------------------------------------------------------------------------------|--|-----------------|-------------|
|  |  | TB1             | DA          |
|                                                                                     |  | TB2             | DB          |
|                                                                                     |  | TB3             | DG          |
|                                                                                     |  | TB4             | SLD         |
|                                                                                     |  | TB5             | +24V        |
|                                                                                     |  | TB6             | ↓ (FG)      |
|                                                                                     |  | TB7             | 24G         |
|                                                                                     |  | TB8             | X0          |
|                                                                                     |  | TB9             | X1          |
|                                                                                     |  | TB10            | X2          |
|                                                                                     |  | TB11            | X3          |
|                                                                                     |  | TB12            | X4          |
|                                                                                     |  | TB13            | X5          |
|                                                                                     |  | TB14            | X6          |
|                                                                                     |  | TB15            | X7          |
|                                                                                     |  | TB16            | COM         |
|                                                                                     |  | TB17            | COM         |

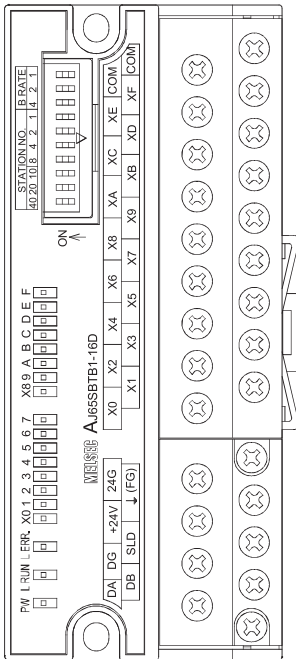
#### 4.1.4 AJ65SBTB3-8D 24VDC input module (positive common (sink), negative common (source) loading)

| Item                                     |                                              | Type | DC input module                                                                                                                                                                                                                              |  | Appearance |
|------------------------------------------|----------------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------|
|                                          |                                              |      | AJ65SBTB3-8D                                                                                                                                                                                                                                 |  |            |
| Number of input points                   |                                              |      | 8 points                                                                                                                                                                                                                                     |  |            |
| Isolation method                         |                                              |      | Photocoupler                                                                                                                                                                                                                                 |  |            |
| Rated input voltage                      |                                              |      | 24VDC                                                                                                                                                                                                                                        |  |            |
| Rated input current                      |                                              |      | Approx. 7mA                                                                                                                                                                                                                                  |  |            |
| Operating voltage range                  |                                              |      | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |            |
| Max. number of simultaneous input points |                                              |      | 100%                                                                                                                                                                                                                                         |  |            |
| ON voltage/ON current                    |                                              |      | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                              |  |            |
| OFF voltage/OFF current                  |                                              |      | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                 |  |            |
| Input resistance                         |                                              |      | Approx. 3.3kΩ                                                                                                                                                                                                                                |  |            |
| Response time                            | OFF→ON                                       |      | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |  |            |
|                                          | ON→OFF                                       |      | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |  |            |
| Wiring method for common                 |                                              |      | 8 points/common (3-wire, terminal block type)                                                                                                                                                                                                |  |            |
| Input type                               |                                              |      | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                               |  |            |
| Supply current for connected device      |                                              |      | 1.0A or lower/common                                                                                                                                                                                                                         |  |            |
| Number of occupied stations              |                                              |      | 32-point assignment/station (8 points used)                                                                                                                                                                                                  |  |            |
| Module power supply                      | Voltage                                      |      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |            |
|                                          | Current                                      |      | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |  |            |
| Noise immunity                           |                                              |      | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |  |            |
| Withstand voltage                        |                                              |      | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |  |            |
| Insulation resistance                    |                                              |      | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |  |            |
| Protection degree                        |                                              |      | IP2X                                                                                                                                                                                                                                         |  |            |
| Weight                                   |                                              |      | 0.18kg                                                                                                                                                                                                                                       |  |            |
| External connection system               | Communication part, module power supply part |      | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                     |  |            |
|                                          | I/O power supply part, I/O part              |      | 18-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                  |  |            |
| Module mounting screw                    |                                              |      | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |  |            |
| Applicable DIN rail                      |                                              |      | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |  |            |
| Applicable solderless terminal           |                                              |      | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |  |            |
| Wire                                     | Material                                     |      | Copper                                                                                                                                                                                                                                       |  |            |
|                                          | Temperature rating                           |      | 75°C or more                                                                                                                                                                                                                                 |  |            |
| Accessory                                |                                              |      | User's manual                                                                                                                                                                                                                                |  |            |

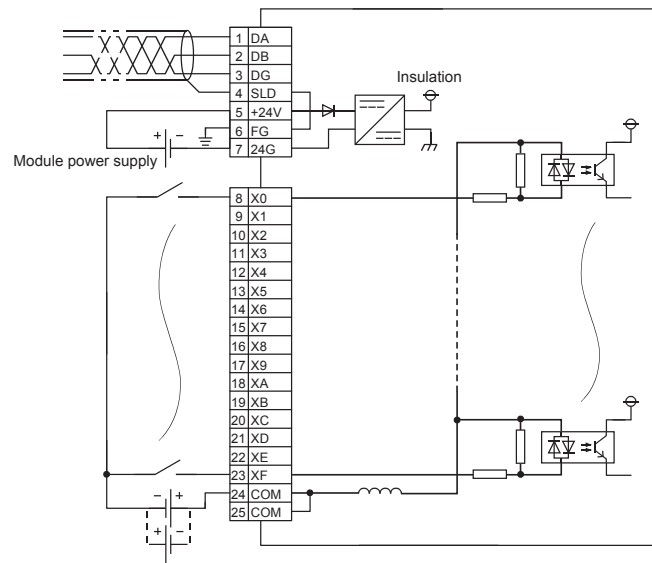
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



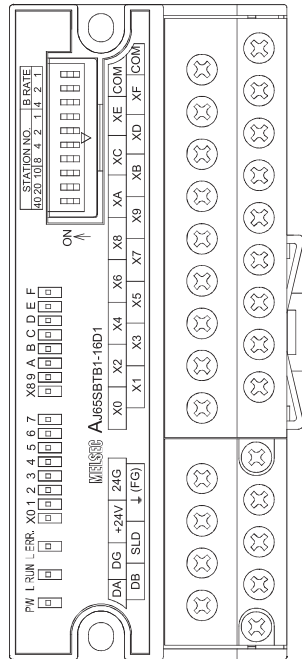
## 4.1.5 AJ65SBTB1-16D 24VDC input module (positive common (sink), negative common (source) loading)

| Type                                     |                                              | DC input module                                                                                                                                                                                                                              |  | Appearance                                                                           |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|
| Item                                     |                                              | AJ65SBTB1-16D                                                                                                                                                                                                                                |  |                                                                                      |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                                    |  |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 |  |                                                                                      |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        |  |                                                                                      |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                  |  |                                                                                      |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |                                                                                      |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         |  |                                                                                      |
| ON voltage/ON current                    |                                              | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                              |  |                                                                                      |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                 |  |                                                                                      |
| Input resistance                         |                                              | Approx. 3.3kΩ                                                                                                                                                                                                                                |  |                                                                                      |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |  |                                                                                      |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |  |                                                                                      |
| Wiring method for common                 |                                              | 16 points/common (2 points) (1-wire, terminal block type)                                                                                                                                                                                    |  |                                                                                      |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                               |  |                                                                                      |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |  |                                                                                      |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |                                                                                      |
|                                          | Current                                      | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |  |                                                                                      |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |  |                                                                                      |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |  |                                                                                      |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |  |                                                                                      |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |  |                                                                                      |
| Weight                                   |                                              | 0.18kg                                                                                                                                                                                                                                       |  |                                                                                      |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                  |  |                                                                                      |
|                                          | I/O power supply part, I/O part              | 18-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw(tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                   |  |                                                                                      |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |  |                                                                                      |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |  |                                                                                      |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |  |                                                                                      |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |  |                                                                                      |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |  |                                                                                      |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |  |                                                                                      |

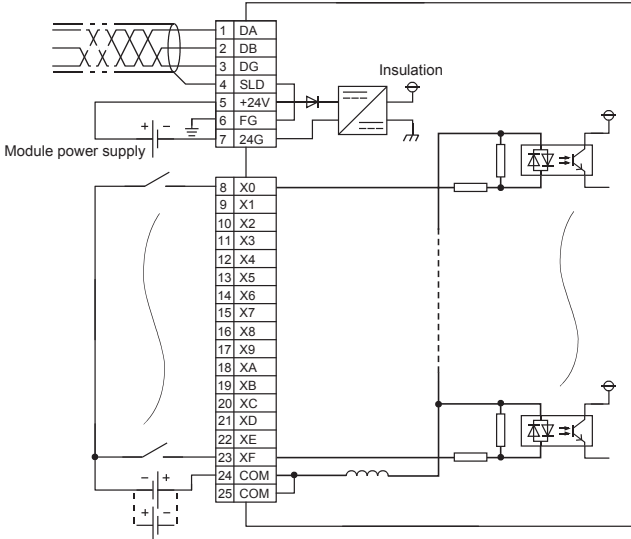
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

| External connection                                                                 |  | Terminal number | Signal name |
|-------------------------------------------------------------------------------------|--|-----------------|-------------|
|  |  | TB1             | DA          |
|                                                                                     |  | TB2             | DB          |
|                                                                                     |  | TB3             | DG          |
|                                                                                     |  | TB4             | SLD         |
|                                                                                     |  | TB5             | +24V        |
|                                                                                     |  | TB6             | ⏏ (FG)      |
|                                                                                     |  | TB7             | 24G         |
|                                                                                     |  | TB8             | X0          |
|                                                                                     |  | TB9             | X1          |
|                                                                                     |  | TB10            | X2          |
|                                                                                     |  | TB11            | X3          |
|                                                                                     |  | TB12            | X4          |
|                                                                                     |  | TB13            | X5          |
|                                                                                     |  | TB14            | X6          |
|                                                                                     |  | TB15            | X7          |
|                                                                                     |  | TB16            | X8          |
|                                                                                     |  | TB17            | X9          |
|                                                                                     |  | TB18            | XA          |
|                                                                                     |  | TB19            | XB          |
|                                                                                     |  | TB20            | XC          |
|                                                                                     |  | TB21            | XD          |
|                                                                                     |  | TB22            | XE          |
|                                                                                     |  | TB23            | XF          |
|                                                                                     |  | TB24            | COM         |
|                                                                                     |  | TB25            | COM         |

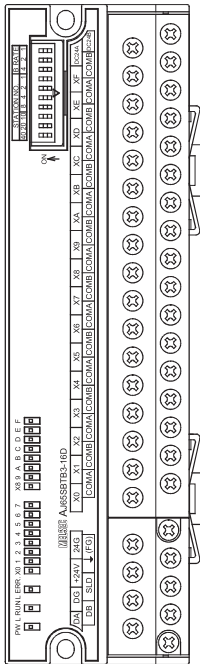
## 4.1.6 AJ65SBTB1-16D1 24VDC input module (positive common (sink), negative common (source) loading)

| Item                                     | Type                                         | DC input module                                                                                                                                                                                                                                                                                  |                                                                                      |
|------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                              | AJ65SBTB1-16D1                                                                                                                                                                                                                                                                                   | Appearance                                                                           |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                                                                                        |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                                                                     |                                                                                      |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                                                                            |                                                                                      |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                                                                                                                                                                                      |                                                                                      |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                                                                             |                                                                                      |
| ON voltage/ON current                    |                                              | 15VDC or higher/3mA or higher                                                                                                                                                                                                                                                                    |                                                                                      |
| OFF voltage/OFF current                  |                                              | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                                                                                     |                                                                                      |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                                                                                                                                                                                    |                                                                                      |
| Response time                            | OFF→ON                                       | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                                                                         |                                                                                      |
|                                          | ON→OFF                                       | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                                                                         |                                                                                      |
| Wiring method for common                 |                                              | 16 points/common (2 points) (1-wire, terminal block type)                                                                                                                                                                                                                                        |                                                                                      |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                                                                   |                                                                                      |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                                                                     |                                                                                      |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
|                                          | Current                                      | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |                                                                                      |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |                                                                                      |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |                                                                                      |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |                                                                                      |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                                                                             |                                                                                      |
| Weight                                   |                                              | 0.18kg                                                                                                                                                                                                                                                                                           |                                                                                      |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                      |                                                                                      |
|                                          | I/O power supply part, I/O part              | 18-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                      |                                                                                      |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                           |                                                                                      |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |                                                                                      |
| Applicable solderless terminal           |                                              | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                                                                           |                                                                                      |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                     |                                                                                      |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                                                                    |                                                                                      |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

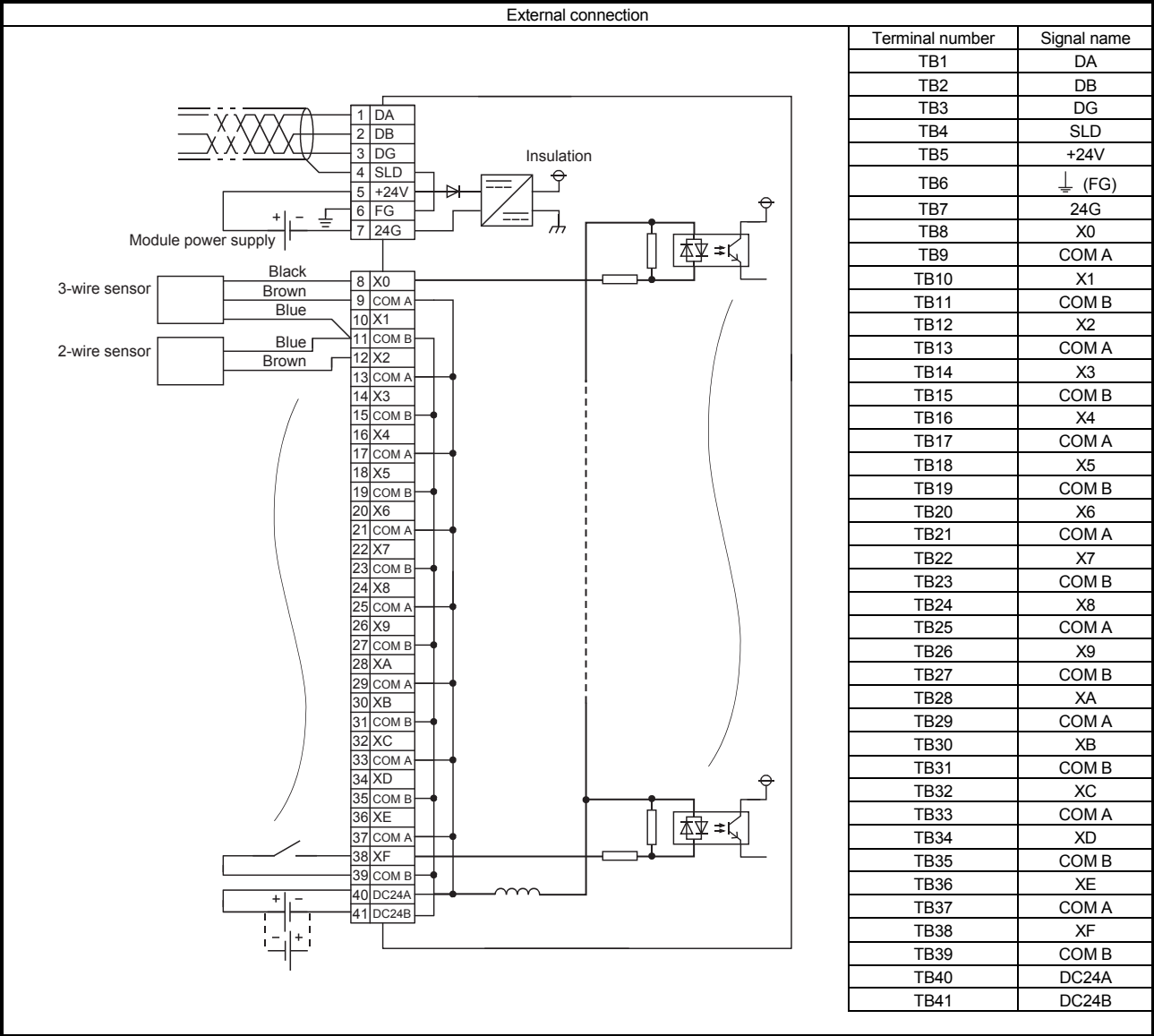
| External connection                                                                 |  | Terminal number | Signal name |
|-------------------------------------------------------------------------------------|--|-----------------|-------------|
|  |  | TB1             | DA          |
|                                                                                     |  | TB2             | DB          |
|                                                                                     |  | TB3             | DG          |
|                                                                                     |  | TB4             | SLD         |
|                                                                                     |  | TB5             | +24V        |
|                                                                                     |  | TB6             | ↓ (FG)      |
|                                                                                     |  | TB7             | 24G         |
|                                                                                     |  | TB8             | X0          |
|                                                                                     |  | TB9             | X1          |
|                                                                                     |  | TB10            | X2          |
|                                                                                     |  | TB11            | X3          |
|                                                                                     |  | TB12            | X4          |
|                                                                                     |  | TB13            | X5          |
|                                                                                     |  | TB14            | X6          |
|                                                                                     |  | TB15            | X7          |
|                                                                                     |  | TB16            | X8          |
|                                                                                     |  | TB17            | X9          |
|                                                                                     |  | TB18            | XA          |
|                                                                                     |  | TB19            | XB          |
|                                                                                     |  | TB20            | XC          |
|                                                                                     |  | TB21            | XD          |
|                                                                                     |  | TB22            | XE          |
|                                                                                     |  | TB23            | XF          |
|                                                                                     |  | TB24            | COM         |
|                                                                                     |  | TB25            | COM         |

## 4.1.7 AJ65SBTB3-16D 24VDC input module (positive common (sink), negative common (source) loading)

| Type                                     |                                              | DC input module                                                                                                                                                                                                                                                                                  | Appearance                                                                           |
|------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                     |                                              | AJ65SBTB3-16D                                                                                                                                                                                                                                                                                    |                                                                                      |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                                                                                        |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                                                                     |                                                                                      |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                                                                            |                                                                                      |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                                                                      |                                                                                      |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                                                                             |                                                                                      |
| ON voltage/ON current                    |                                              | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                                                                                  |                                                                                      |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                                                                     |                                                                                      |
| Input resistance                         |                                              | Approx. 3.3kΩ                                                                                                                                                                                                                                                                                    |                                                                                      |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                         |                                                                                      |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                         |                                                                                      |
| Wiring method for common                 |                                              | 16points/common (3-wire, terminal block type)                                                                                                                                                                                                                                                    |                                                                                      |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                                                                   |                                                                                      |
| Supply current for connected device      |                                              | 1.0A or lower/common                                                                                                                                                                                                                                                                             |                                                                                      |
| Number of occupied stations              |                                              | 32-point assignment/station (16points used)                                                                                                                                                                                                                                                      |                                                                                      |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
|                                          | Current                                      | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |                                                                                      |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |                                                                                      |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |                                                                                      |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |                                                                                      |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                                                                             |                                                                                      |
| Weight                                   |                                              | 0.25kg                                                                                                                                                                                                                                                                                           |                                                                                      |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                         |                                                                                      |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                      |                                                                                      |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                              |                                                                                      |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |                                                                                      |
| Applicable solderless terminal           |                                              | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                                                                           |                                                                                      |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                     |                                                                                      |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                                                                    |                                                                                      |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



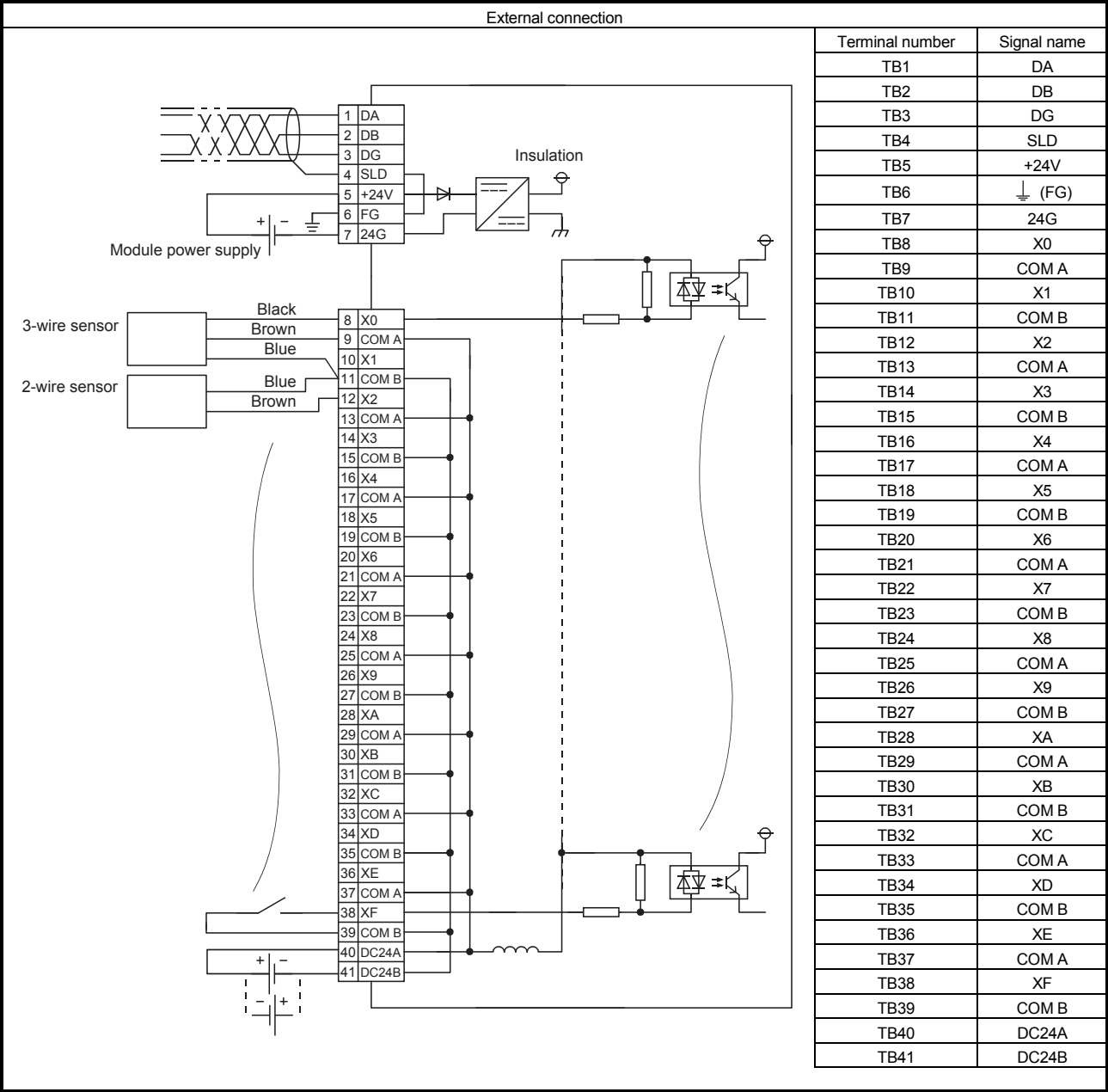


## 4.1.8 AJ65SBTB3-16KD 24VDC input module (positive common (sink), negative common (source) loading)

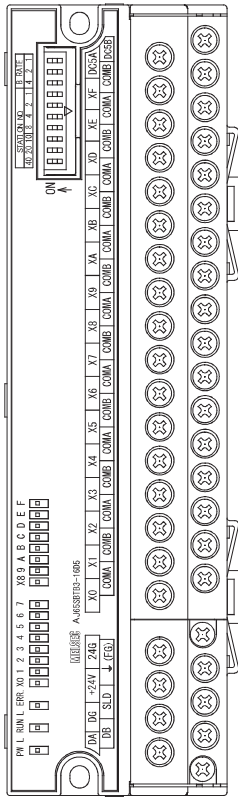
| Item                                     |                                              | Type                                                                                                                                                                                                                                         | DC input module |             |              |  | Appearance |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------|--------------|--|------------|
|                                          |                                              | AJ65SBTB3-16KD                                                                                                                                                                                                                               |                 |             |              |  |            |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                                    |                 |             |              |  |            |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 |                 |             |              |  |            |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        |                 |             |              |  |            |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                  |                 |             |              |  |            |
| Operating voltage range                  |                                              | 20.4 to 28.8VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                 |             |              |  |            |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         |                 |             |              |  |            |
| ON voltage/ON current                    |                                              | 14VDC or higher/4mA or higher                                                                                                                                                                                                                |                 |             |              |  |            |
| OFF voltage/OFF current                  |                                              | 5.5VDC or lower/1.7mA or lower                                                                                                                                                                                                               |                 |             |              |  |            |
| Input resistance                         |                                              | Approx. 3.0kΩ                                                                                                                                                                                                                                |                 |             |              |  |            |
| Response time                            | Input response speed                         | 0.2ms                                                                                                                                                                                                                                        | 1.5ms           | 5ms         | 10ms         |  |            |
|                                          | OFF→ON                                       | 0.2ms or less                                                                                                                                                                                                                                | 1.5ms or less   | 5ms or less | 10ms or less |  |            |
|                                          | ON→OFF                                       | 0.2ms or less                                                                                                                                                                                                                                | 1.5ms or less   | 5ms or less | 10ms or less |  |            |
| Wiring method for common                 |                                              | 16 points/common (3-wire, terminal block type)                                                                                                                                                                                               |                 |             |              |  |            |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                               |                 |             |              |  |            |
| Supply current for connected device      |                                              | 1.0A or lower/common                                                                                                                                                                                                                         |                 |             |              |  |            |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |                 |             |              |  |            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                 |             |              |  |            |
|                                          | Current                                      | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                 |             |              |  |            |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |                 |             |              |  |            |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                 |             |              |  |            |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                 |             |              |  |            |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |                 |             |              |  |            |
| Weight                                   |                                              | 0.26kg                                                                                                                                                                                                                                       |                 |             |              |  |            |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                     |                 |             |              |  |            |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                  |                 |             |              |  |            |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                 |             |              |  |            |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                 |             |              |  |            |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                 |             |              |  |            |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                 |             |              |  |            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                 |             |              |  |            |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                 |             |              |  |            |

The diagram illustrates the physical layout of the AJ65SBTB3-16KD module. It features a 7-point terminal block on the left for communication, power supply, and ground (FG). A 34-point direct-mount terminal block is located on the right, organized into two rows of 17 points each. The top row includes terminals for power supply (V+, V-, GND) and I/O signals (X1 to X16). The bottom row includes terminals for I/O signals (Y1 to Y16) and ground (GND). The module is designed for DIN rail mounting, with a DIN rail shown at the bottom. The module is labeled with 'AJ65SBTB3-16KD' and 'Mitsubishi Electric'.

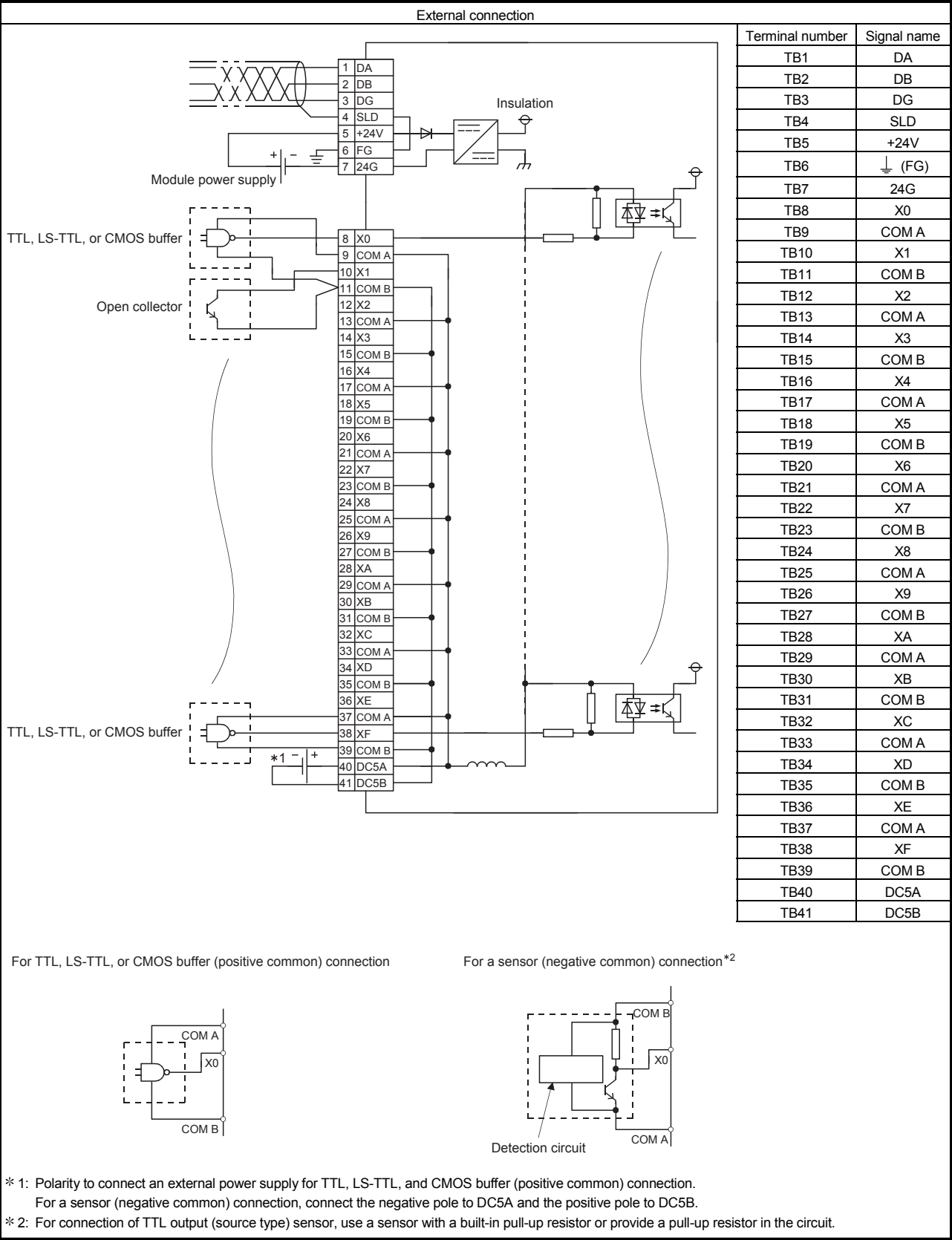
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



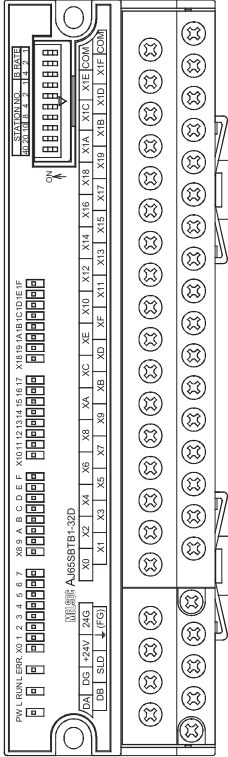
## 4.1.9 AJ65SBTB3-16D5 5VDC input module (positive common (sink), negative common (source) loading)

| Type                                     |                                              | DC input module                                                                                                                                                                                                                              |  | Appearance                                                                           |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|
| Item                                     |                                              | AJ65SBTB3-16D5                                                                                                                                                                                                                               |  |                                                                                      |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                                    |  |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 |  |                                                                                      |
| Rated input voltage                      |                                              | 5VDC                                                                                                                                                                                                                                         |  |                                                                                      |
| Rated input current                      |                                              | Approx. 4mA                                                                                                                                                                                                                                  |  |                                                                                      |
| Operating voltage range                  |                                              | 4.25 to 6VDC (ripple ratio: within 5%)                                                                                                                                                                                                       |  |                                                                                      |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         |  |                                                                                      |
| ON voltage/ON current                    |                                              | 3.5VDC or higher/2mA or higher                                                                                                                                                                                                               |  |                                                                                      |
| OFF voltage/OFF current                  |                                              | 1.5VDC or lower/1mA or lower                                                                                                                                                                                                                 |  |                                                                                      |
| Input resistance                         |                                              | Approx. 1.0kΩ                                                                                                                                                                                                                                |  |                                                                                      |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 5VDC)                                                                                                                                                                                                                      |  |                                                                                      |
|                                          | ON→OFF                                       | 1.5ms or less (at 5VDC)                                                                                                                                                                                                                      |  |                                                                                      |
| Wiring method for common                 |                                              | 16 points/common (3-wire, terminal block type)                                                                                                                                                                                               |  |                                                                                      |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                               |  |                                                                                      |
| Supply current for connected device      |                                              | 1.0A or lower/common                                                                                                                                                                                                                         |  |                                                                                      |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |  |                                                                                      |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |                                                                                      |
|                                          | Current                                      | 30mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |  |                                                                                      |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |  |                                                                                      |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |  |                                                                                      |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |  |                                                                                      |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |  |                                                                                      |
| Weight                                   |                                              | 0.25kg                                                                                                                                                                                                                                       |  |                                                                                      |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                     |  |                                                                                      |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                  |  |                                                                                      |
|                                          |                                              |                                                                                                                                                                                                                                              |  |                                                                                      |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |  |                                                                                      |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |  |                                                                                      |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |  |                                                                                      |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |  |                                                                                      |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |  |                                                                                      |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |  |                                                                                      |

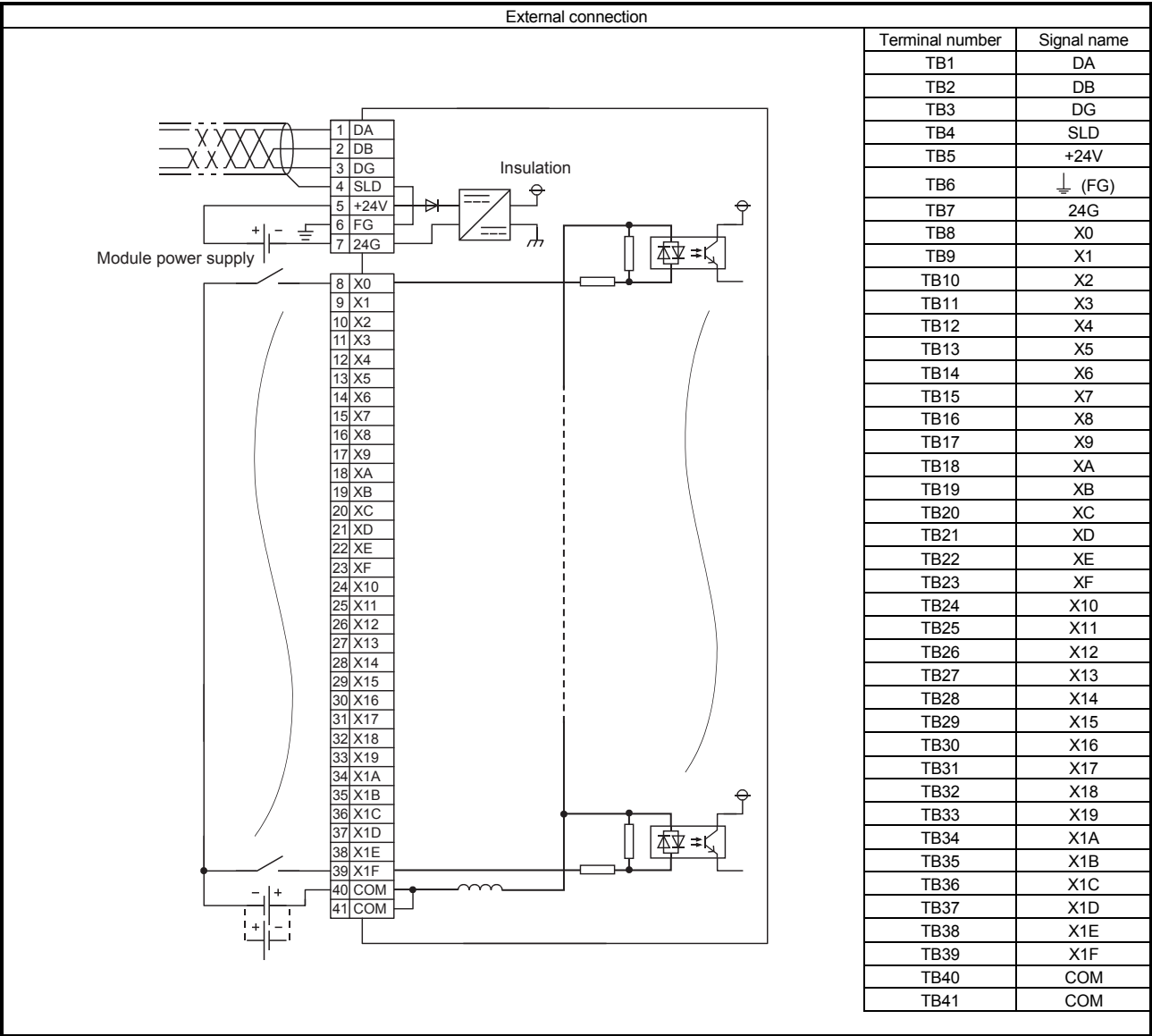
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 4.1.10 AJ65SBTB1-32D 24VDC input module (positive common (sink), negative common (source) loading)

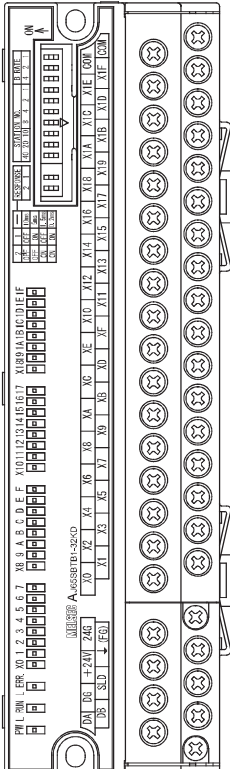
| Type                                     |                                              | DC input module                                                                                                                                                                                                                                                                                      | Appearance                                                                           |
|------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                     |                                              | AJ65SBTB1-32D                                                                                                                                                                                                                                                                                        |                                                                                      |
| Number of input points                   |                                              | 32 points                                                                                                                                                                                                                                                                                            |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                                                                         |                                                                                      |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                                                                                |                                                                                      |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                                                                          |                                                                                      |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                                                                                 |                                                                                      |
| ON voltage/ON current                    |                                              | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                                                                                      |                                                                                      |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                                                                         |                                                                                      |
| Input resistance                         |                                              | Approx. 3.3kΩ                                                                                                                                                                                                                                                                                        |                                                                                      |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                             |                                                                                      |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                             |                                                                                      |
| Wiring method for common                 |                                              | 32 points/common (2 points) (1-wire, terminal block type)                                                                                                                                                                                                                                            |                                                                                      |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                                                                       |                                                                                      |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                                         |                                                                                      |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                          | Current                                      | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                           |                                                                                      |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                               |                                                                                      |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                     |                                                                                      |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                    |                                                                                      |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Weight                                   |                                              | 0.25kg                                                                                                                                                                                                                                                                                               |                                                                                      |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                             |                                                                                      |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw(tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                           |                                                                                      |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                                  |                                                                                      |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                    |                                                                                      |
| Applicable solderless terminal           |                                              | <ul style="list-style-type: none"> <li>• RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                                                                               |                                                                                      |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                         |                                                                                      |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                                                                        |                                                                                      |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



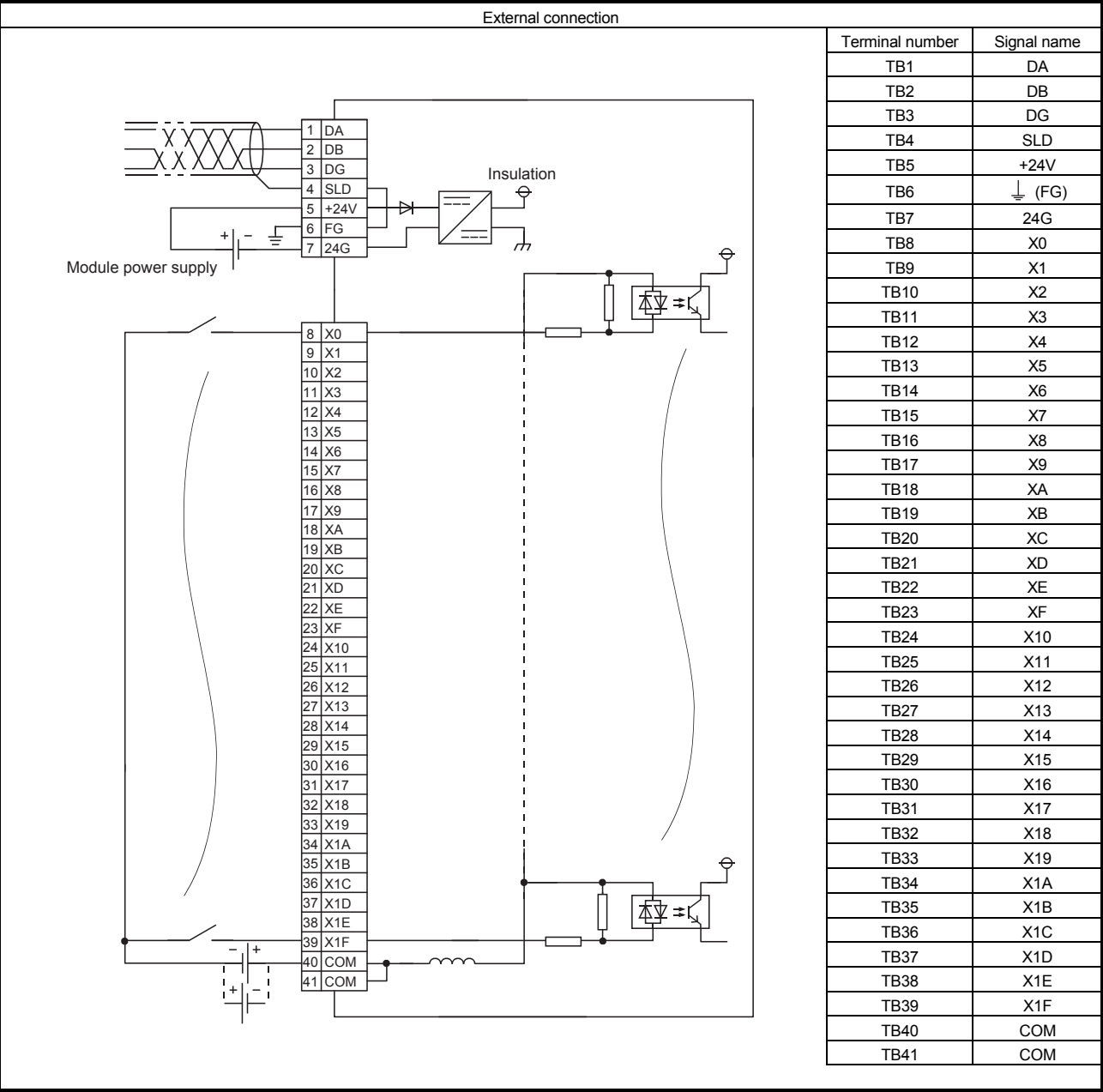
## 4.1.11 AJ65SBTB1-32KD 24VDC input module (positive common (sink), negative common (source) loading)

| Type                                     |                                              | DC input module                                                                                                                                                                                                                              |               |             |              | Appearance |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|--------------|------------|
| Item                                     |                                              | AJ65SBTB1-32KD                                                                                                                                                                                                                               |               |             |              |            |
| Number of input points                   |                                              | 32 points                                                                                                                                                                                                                                    |               |             |              |            |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 |               |             |              |            |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        |               |             |              |            |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                  |               |             |              |            |
| Operating voltage range                  |                                              | 20.4 to 28.8VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |               |             |              |            |
| Max. number of simultaneous input points |                                              | 100% (at 26.4VDC), 50% (at 28.8VDC)                                                                                                                                                                                                          |               |             |              |            |
| ON voltage/ON current                    |                                              | 14VDC or higher/4mA or higher                                                                                                                                                                                                                |               |             |              |            |
| OFF voltage/OFF current                  |                                              | 5.5VDC or lower/1.7mA or lower                                                                                                                                                                                                               |               |             |              |            |
| Input resistance                         |                                              | Approx. 3.0kΩ                                                                                                                                                                                                                                |               |             |              |            |
| Response time                            | Input response speed                         | 0.2ms                                                                                                                                                                                                                                        | 1.5ms         | 5ms         | 10ms         |            |
|                                          | OFF→ON                                       | 0.2ms or less                                                                                                                                                                                                                                | 1.5ms or less | 5ms or less | 10ms or less |            |
|                                          | ON→OFF                                       | 0.2ms or less                                                                                                                                                                                                                                | 1.5ms or less | 5ms or less | 10ms or less |            |
| Wiring method for common                 |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                               |               |             |              |            |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                               |               |             |              |            |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                 |               |             |              |            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |               |             |              |            |
|                                          | Current                                      | 75mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |               |             |              |            |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |               |             |              |            |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |               |             |              |            |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |               |             |              |            |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |               |             |              |            |
| Weight                                   |                                              | 0.26kg                                                                                                                                                                                                                                       |               |             |              |            |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                     |               |             |              |            |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                  |               |             |              |            |
|                                          |                                              |                                                                                                                                                                                                                                              |               |             |              |            |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                       |               |             |              |            |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |               |             |              |            |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |               |             |              |            |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |               |             |              |            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |               |             |              |            |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |               |             |              |            |

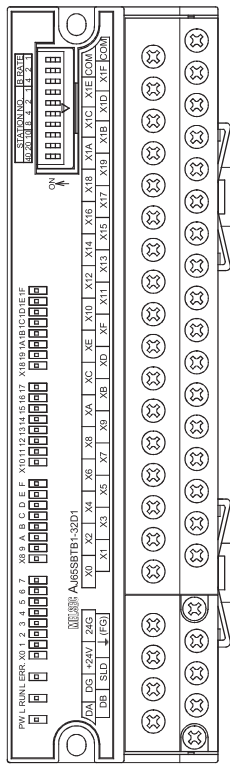


\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

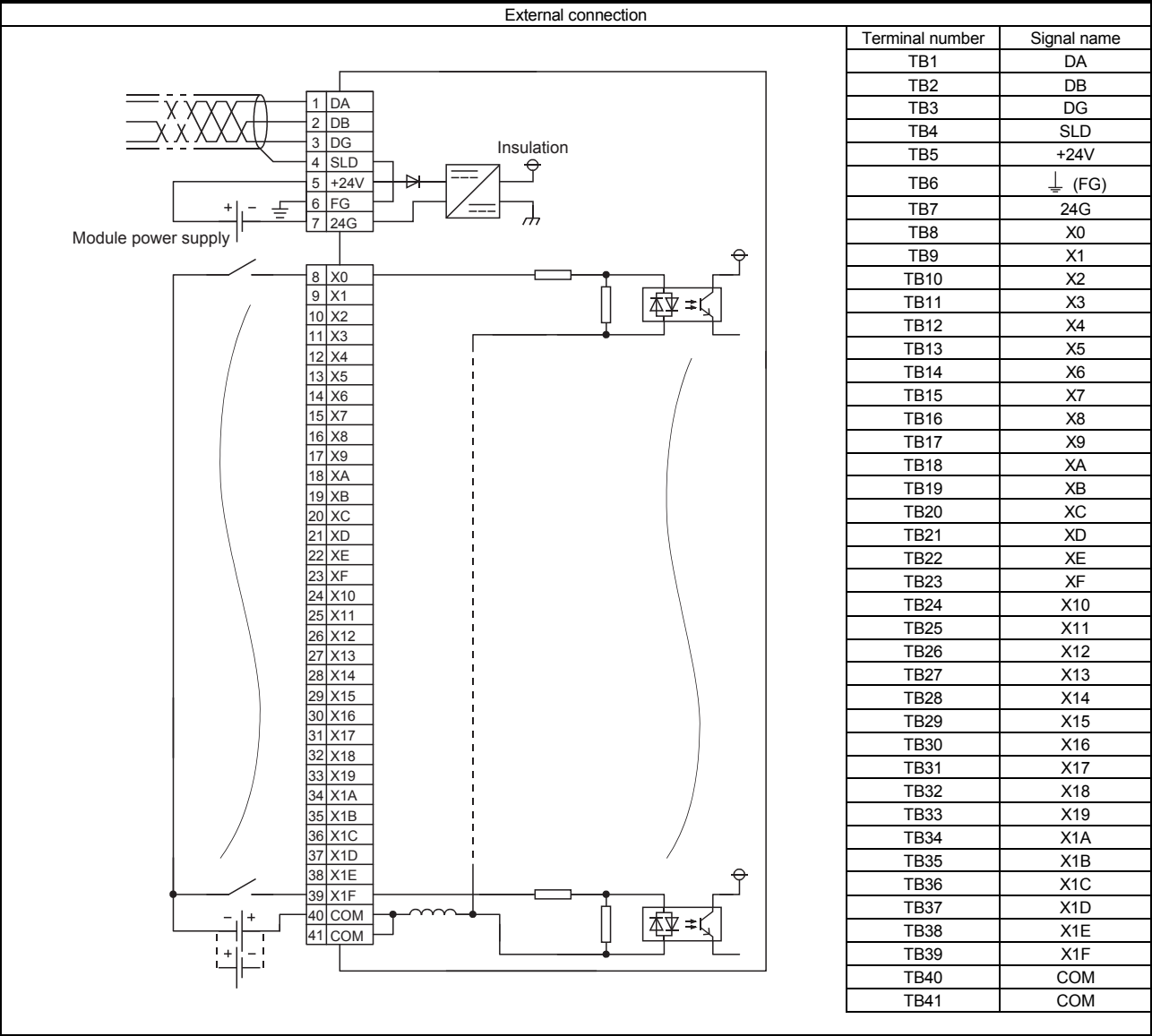




## 4.1.12 AJ65SBTB1-32D1 24VDC input module (positive common (sink), negative common (source) loading)

| Item                                     |                                              | Type | DC input module                                                                                                                                                                                                                                                                                  | Appearance                                                                           |
|------------------------------------------|----------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                              |      | AJ65SBTB1-32D1                                                                                                                                                                                                                                                                                   |                                                                                      |
| Number of input points                   |                                              |      | 32 points                                                                                                                                                                                                                                                                                        |  |
| Isolation method                         |                                              |      | Photocoupler                                                                                                                                                                                                                                                                                     |                                                                                      |
| Rated input voltage                      |                                              |      | 24VDC                                                                                                                                                                                                                                                                                            |                                                                                      |
| Rated input current                      |                                              |      | Approx. 5mA                                                                                                                                                                                                                                                                                      |                                                                                      |
| Operating voltage range                  |                                              |      | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
| Max. number of simultaneous input points |                                              |      | 100%                                                                                                                                                                                                                                                                                             |                                                                                      |
| ON voltage/ON current                    |                                              |      | 15VDC or higher/3mA or higher                                                                                                                                                                                                                                                                    |                                                                                      |
| OFF voltage/OFF current                  |                                              |      | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                                                                                     |                                                                                      |
| Input resistance                         |                                              |      | Approx. 4.7kΩ                                                                                                                                                                                                                                                                                    |                                                                                      |
| Response time                            | OFF→ON                                       |      | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                                                                         |                                                                                      |
|                                          | ON→OFF                                       |      | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                                                                         |                                                                                      |
| Wiring method for common                 |                                              |      | 32 points/common (2 points) (1-wire, terminal block type)                                                                                                                                                                                                                                        |                                                                                      |
| Input type                               |                                              |      | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                                                                   |                                                                                      |
| Number of occupied stations              |                                              |      | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                                     |                                                                                      |
| Module power supply                      | Voltage                                      |      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
|                                          | Current                                      |      | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |                                                                                      |
| Noise immunity                           |                                              |      | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |                                                                                      |
| Withstand voltage                        |                                              |      | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |                                                                                      |
| Insulation resistance                    |                                              |      | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |                                                                                      |
| Protection degree                        |                                              |      | IP2X                                                                                                                                                                                                                                                                                             |                                                                                      |
| Weight                                   |                                              |      | 0.25kg                                                                                                                                                                                                                                                                                           |                                                                                      |
| External connection system               | Communication part, module power supply part |      | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                         |                                                                                      |
|                                          | I/O power supply part, I/O part              |      | 34-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                      |                                                                                      |
| Module mounting screw                    |                                              |      | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                              |                                                                                      |
| Applicable DIN rail                      |                                              |      | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |                                                                                      |
| Applicable solderless terminal           |                                              |      | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                     | Material                                     |      | Copper                                                                                                                                                                                                                                                                                           |                                                                                      |
|                                          | Temperature rating                           |      | 75°C or more                                                                                                                                                                                                                                                                                     |                                                                                      |
| Accessory                                |                                              |      | User's manual                                                                                                                                                                                                                                                                                    |                                                                                      |

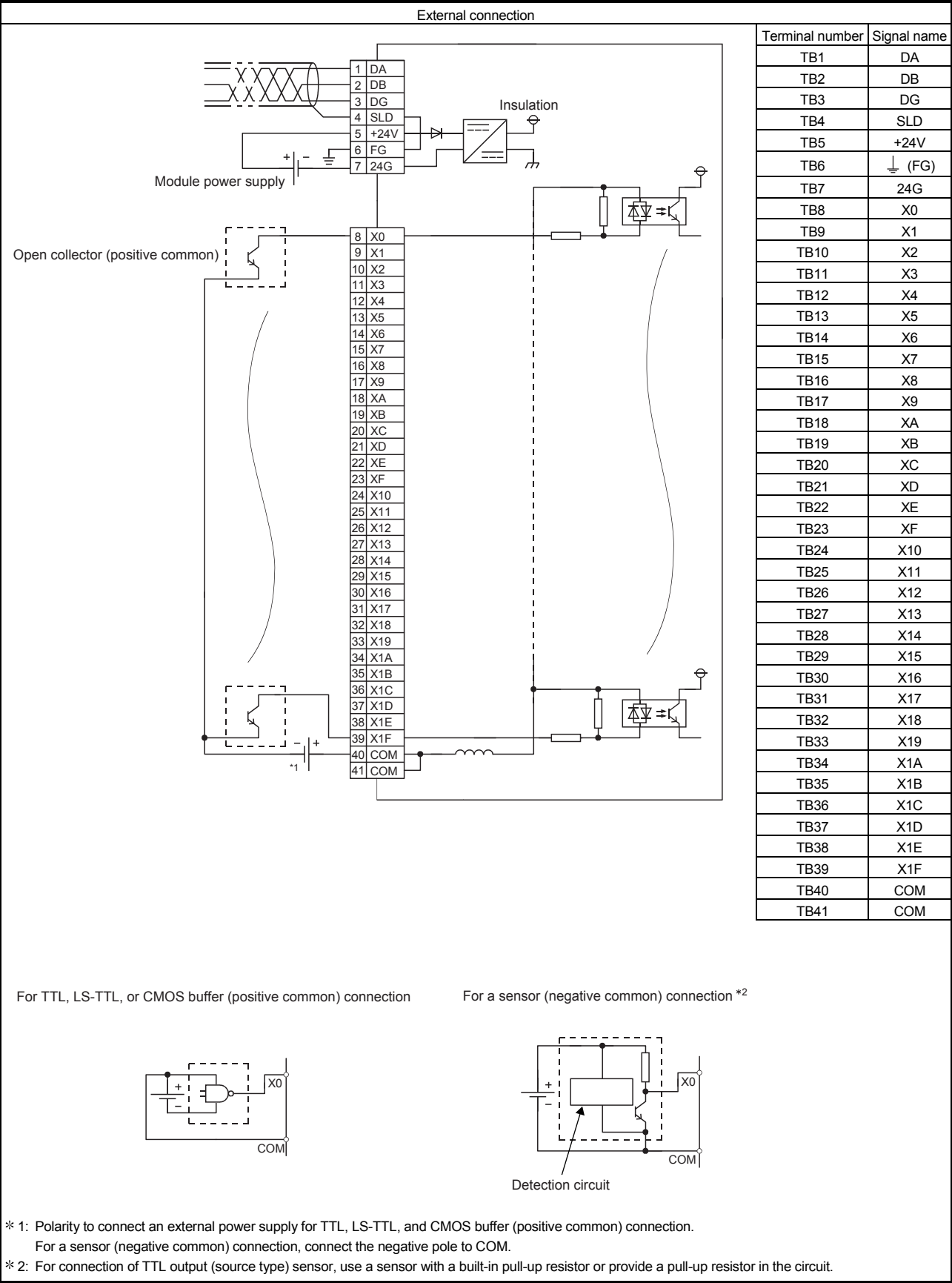
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



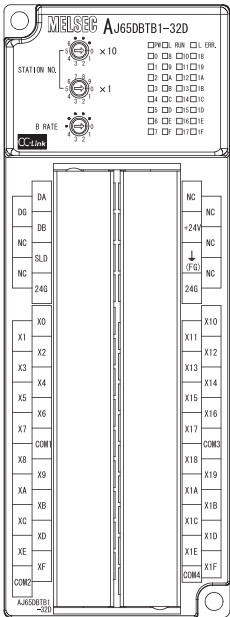
## 4.1.13 AJ65SBTB1-32D5 5VDC input module (positive common (sink), negative common (source) loading)

| Type                                     |                                              | DC input module                                                                                                                                                                                                                                                                                  |            |
|------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Item                                     |                                              | AJ65SBTB1-32D5                                                                                                                                                                                                                                                                                   | Appearance |
| Number of input points                   |                                              | 32 points                                                                                                                                                                                                                                                                                        |            |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                                                                     |            |
| Rated input voltage                      |                                              | 5VDC                                                                                                                                                                                                                                                                                             |            |
| Rated input current                      |                                              | Approx. 4mA                                                                                                                                                                                                                                                                                      |            |
| Operating voltage range                  |                                              | 4.25 to 6VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                           |            |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                                                                             |            |
| ON voltage/ON current                    |                                              | 3.5VDC or higher/2mA or higher                                                                                                                                                                                                                                                                   |            |
| OFF voltage/OFF current                  |                                              | 1.5VDC or lower/1mA or lower                                                                                                                                                                                                                                                                     |            |
| Input resistance                         |                                              | Approx. 1.0kΩ                                                                                                                                                                                                                                                                                    |            |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 5VDC)                                                                                                                                                                                                                                                                          |            |
|                                          | ON→OFF                                       | 1.5ms or less (at 5VDC)                                                                                                                                                                                                                                                                          |            |
| Wiring method for common                 |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                                   |            |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                                                                   |            |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                                     |            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |            |
|                                          | Current                                      | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |            |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |            |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |            |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |            |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                                                                             |            |
| Weight                                   |                                              | 0.26kg                                                                                                                                                                                                                                                                                           |            |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                      |            |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                      |            |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                              |            |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |            |
| Applicable solderless terminal           |                                              | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |            |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                                                                           |            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                     |            |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                                                                    |            |

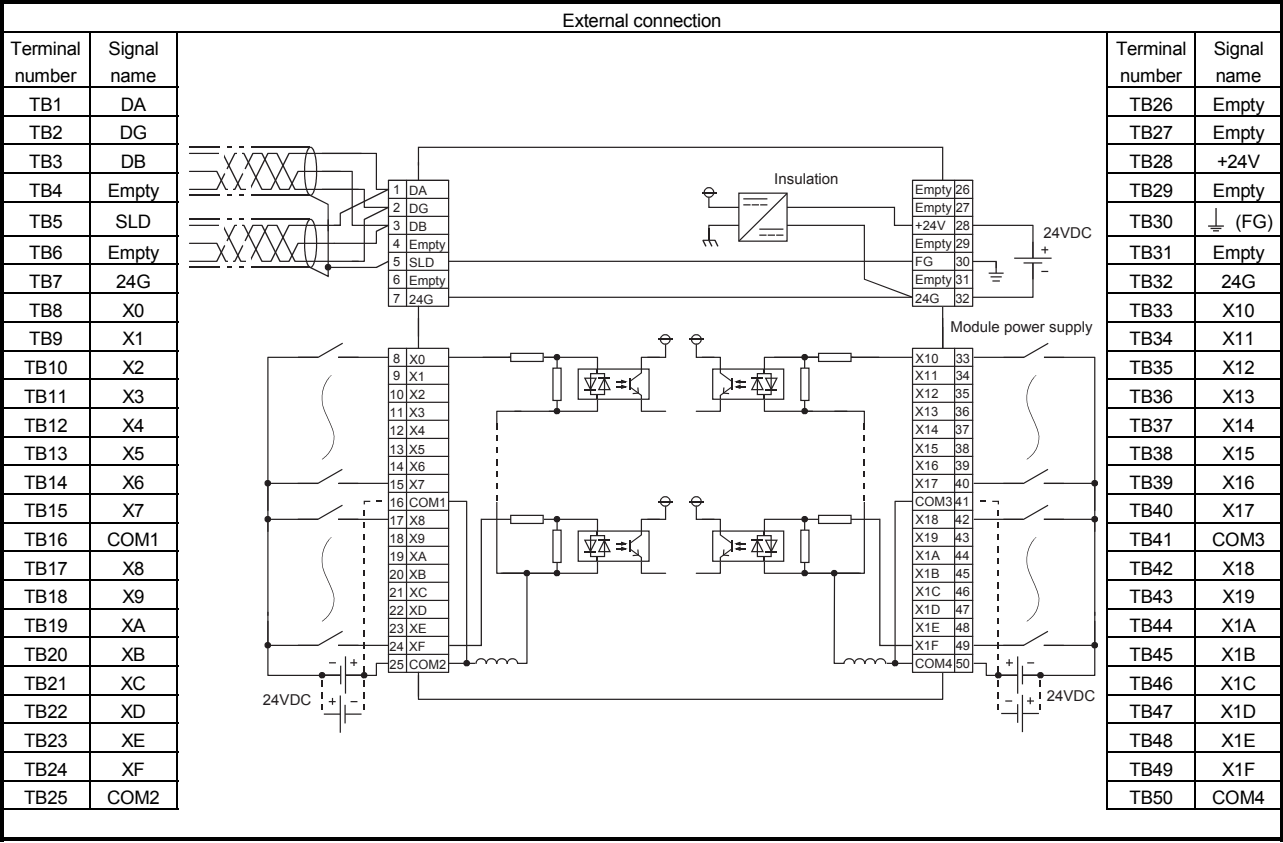
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 4.1.14 AJ65DBTB1-32D 24VDC input module (positive common (sink), negative common (source) loading)

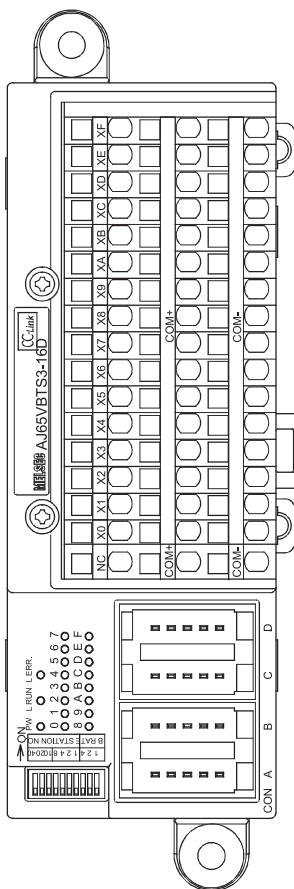
| Item                                     | Type               | DC input module                                                                                                                                                                                                                                                                                                 |                                                                                      |
|------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                    | AJ65DBTB1-32D                                                                                                                                                                                                                                                                                                   | Appearance                                                                           |
| Number of input points                   |                    | 32 points                                                                                                                                                                                                                                                                                                       |  |
| Isolation method                         |                    | Photocoupler                                                                                                                                                                                                                                                                                                    |                                                                                      |
| Rated input voltage                      |                    | 24VDC                                                                                                                                                                                                                                                                                                           |                                                                                      |
| Rated input current                      |                    | Approx. 5mA                                                                                                                                                                                                                                                                                                     |                                                                                      |
| Operating voltage range                  |                    | 20.4 to 31.2VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                                       |                                                                                      |
| Max. number of simultaneous input points |                    | 100% (at 26.4VDC)                                                                                                                                                                                                                                                                                               |                                                                                      |
| ON voltage/ON current                    |                    | 15VDC or higher/3mA or higher                                                                                                                                                                                                                                                                                   |                                                                                      |
| OFF voltage/OFF current                  |                    | 5VDC or lower/1.5mA or lower                                                                                                                                                                                                                                                                                    |                                                                                      |
| Input resistance                         |                    | Approx. 4.7kΩ                                                                                                                                                                                                                                                                                                   |                                                                                      |
| Response time                            | OFF→ON             | 10ms or less (at 24VDC)                                                                                                                                                                                                                                                                                         |                                                                                      |
|                                          | ON→OFF             | 10ms or less (at 24VDC)                                                                                                                                                                                                                                                                                         |                                                                                      |
| Wiring method for common                 |                    | 16 points/common (2 points) (1-wire, terminal block type)                                                                                                                                                                                                                                                       |                                                                                      |
| Input type                               |                    | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                                                                                  |                                                                                      |
| Number of occupied stations              |                    | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                                                    |                                                                                      |
| Module power supply                      | Voltage            | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                                       |                                                                                      |
|                                          | Current            | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                                      |                                                                                      |
| Noise immunity                           |                    | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                                          |                                                                                      |
| Withstand voltage                        |                    | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                                |                                                                                      |
| Insulation resistance                    |                    | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                               |                                                                                      |
| Protection degree                        |                    | IP2X                                                                                                                                                                                                                                                                                                            |                                                                                      |
| Weight                                   |                    | 0.6kg                                                                                                                                                                                                                                                                                                           |                                                                                      |
| External connection system               |                    | 50-point terminal block<br>[Transmission circuit, module power supply, FG, I/O power supply, I/O signal]<br>M3.5×7 screw (tightening torque range: 0.68 to 0.92N·m)<br>Applicable solderless terminal: 2 or less                                                                                                |                                                                                      |
| Module mounting screw                    |                    | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)                                                                                                                                                                                                                         |                                                                                      |
| Applicable solderless terminal           |                    | <ul style="list-style-type: none"> <li>• R1.25-3.5 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• RAV2-3.5 (compliant with JIS C 2805)<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                     | Material           | Copper                                                                                                                                                                                                                                                                                                          |                                                                                      |
|                                          | Temperature rating | 75°C or more                                                                                                                                                                                                                                                                                                    |                                                                                      |
| Accessory                                |                    | User's manual                                                                                                                                                                                                                                                                                                   |                                                                                      |
| Part sold separately                     |                    | A6DIN1C, A2CCOM-TB                                                                                                                                                                                                                                                                                              |                                                                                      |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



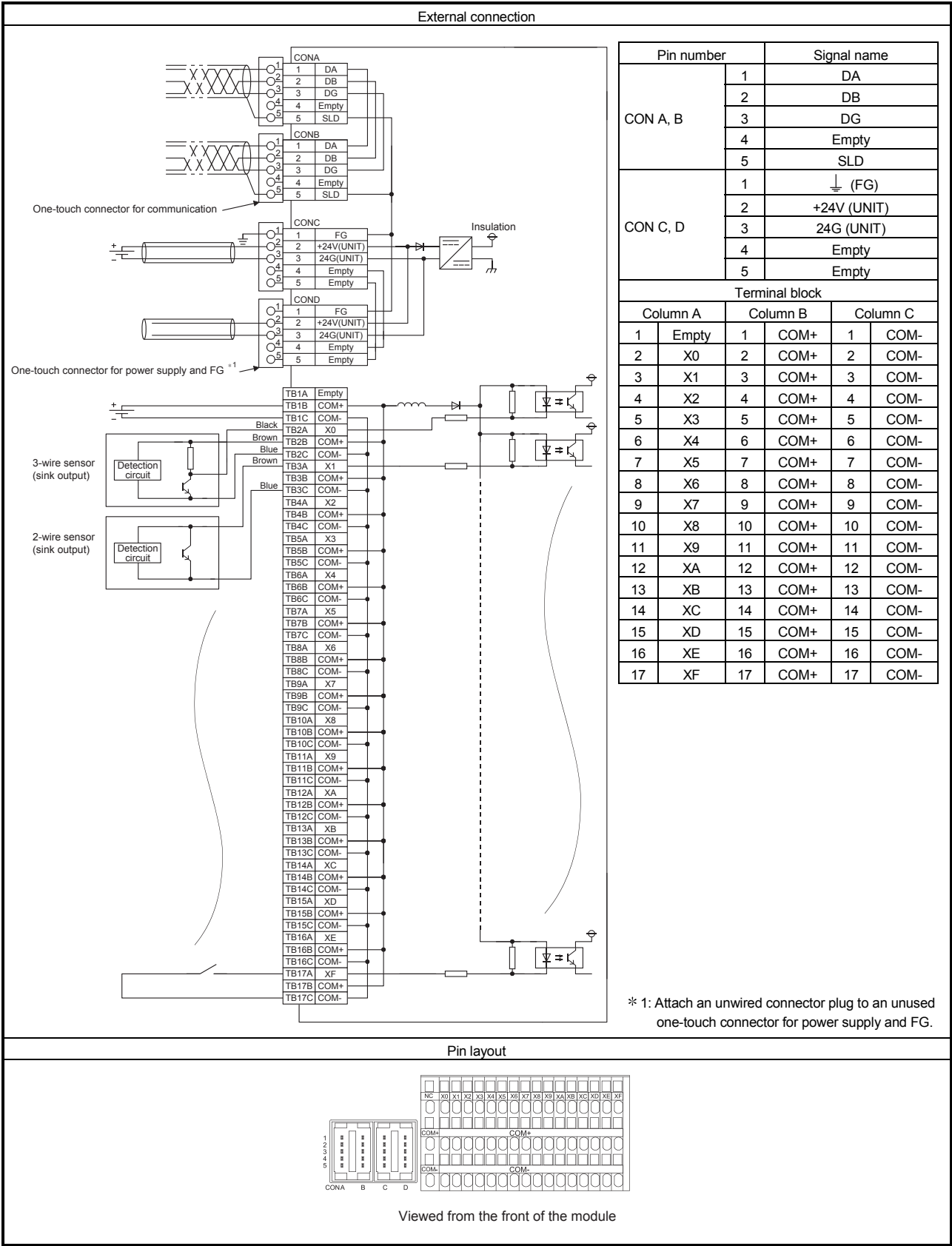
## 4.2 Spring Clamp Terminal Block Type Input Module

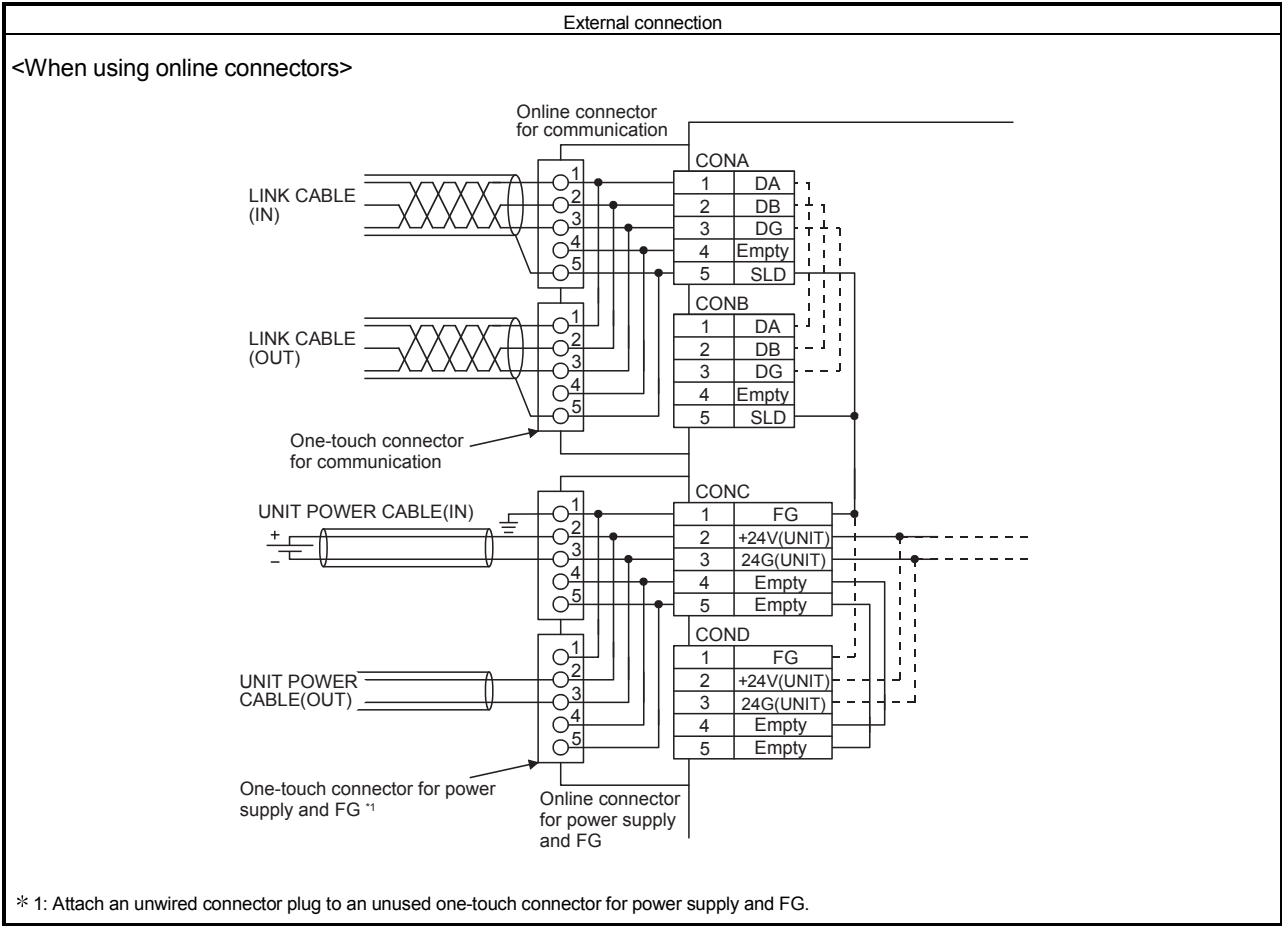
## 4.2.1 AJ65VBTS3-16D 24VDC input module (positive common (sink type))

| Type                                     |                                     | DC input module                                                                                                                                                                                                                 |  | Appearance                                                                           |
|------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|
| Item                                     |                                     | AJ65VBTS3-16D                                                                                                                                                                                                                   |  |                                                                                      |
| Number of input points                   |                                     | 16 points                                                                                                                                                                                                                       |  |  |
| Isolation method                         |                                     | Photocoupler                                                                                                                                                                                                                    |  |                                                                                      |
| Rated input voltage                      |                                     | 24VDC                                                                                                                                                                                                                           |  |                                                                                      |
| Rated input current                      |                                     | Approx. 5mA                                                                                                                                                                                                                     |  |                                                                                      |
| Operating voltage range                  |                                     | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |  |                                                                                      |
| Max. number of simultaneous input points |                                     | 100% or 75% (Refer to Section 1.3.)                                                                                                                                                                                             |  |                                                                                      |
| ON voltage/ON current                    |                                     | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                 |  |                                                                                      |
| OFF voltage/OFF current                  |                                     | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                    |  |                                                                                      |
| Input resistance                         |                                     | Approx. 4.7kΩ                                                                                                                                                                                                                   |  |                                                                                      |
| Response time                            | OFF→ON                              | 1.5ms or less (at 24VDC)                                                                                                                                                                                                        |  |                                                                                      |
|                                          | ON→OFF                              | 1.5ms or less (at 24VDC)                                                                                                                                                                                                        |  |                                                                                      |
| Wiring method for common                 |                                     | 16 points/common (3-wire, spring clamp terminal block type)                                                                                                                                                                     |  |                                                                                      |
| Input type                               |                                     | Positive common (sink type)                                                                                                                                                                                                     |  |                                                                                      |
| Supply current for connected device      |                                     | 1.0A or lower/common                                                                                                                                                                                                            |  |                                                                                      |
| Number of occupied stations              |                                     | 32-point assignment/station (16points used)                                                                                                                                                                                     |  |                                                                                      |
| Module power supply                      | Voltage                             | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |  |                                                                                      |
|                                          | Current                             | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                      |  |                                                                                      |
| Noise immunity                           |                                     | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                          |  |                                                                                      |
| Withstand voltage                        |                                     | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                |  |                                                                                      |
| Insulation resistance                    |                                     | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                               |  |                                                                                      |
| Protection degree                        |                                     | IP1XB                                                                                                                                                                                                                           |  |                                                                                      |
| Weight                                   |                                     | 0.24kg                                                                                                                                                                                                                          |  |                                                                                      |
| External connection system               | Communication part                  | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                    |  |                                                                                      |
|                                          | Power supply part                   | One-touch connector for power supply and FG [Module power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P                          |  |                                                                                      |
|                                          | I/O part                            | 2-piece spring clamp terminal block [I/O power supply, I/O signals]                                                                                                                                                             |  |                                                                                      |
|                                          |                                     |                                                                                                                                                                                                                                 |  |                                                                                      |
| Applicable DIN rail                      |                                     | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                               |  |                                                                                      |
| Applicable wire size                     | Connector for communication         | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                         |  |                                                                                      |
|                                          | Connector for power supply and FG   | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                      |  |                                                                                      |
|                                          | Spring clamp terminal block for I/O | Stranded wire 0.08 to 1.5mm <sup>2</sup> (28 to 16 AWG) * 1<br>Wire strip length: 8 to 11mm                                                                                                                                     |  |                                                                                      |
|                                          | Applicable solderless terminal      | TE0.5 [Applicable wire size: 0.5mm <sup>2</sup> ]<br>TE0.75 [Applicable wire size: 0.75mm <sup>2</sup> ]<br>TE1 [Applicable wire size: 0.9 to 1.0mm <sup>2</sup> ]<br>TE1.5 [Applicable wire size: 1.25 to 1.5mm <sup>2</sup> ] |  |                                                                                      |
| Accessory                                |                                     | User's manual, Holding fixtures for screw installation                                                                                                                                                                          |  |                                                                                      |

\* 1: Insert one wire per terminal.



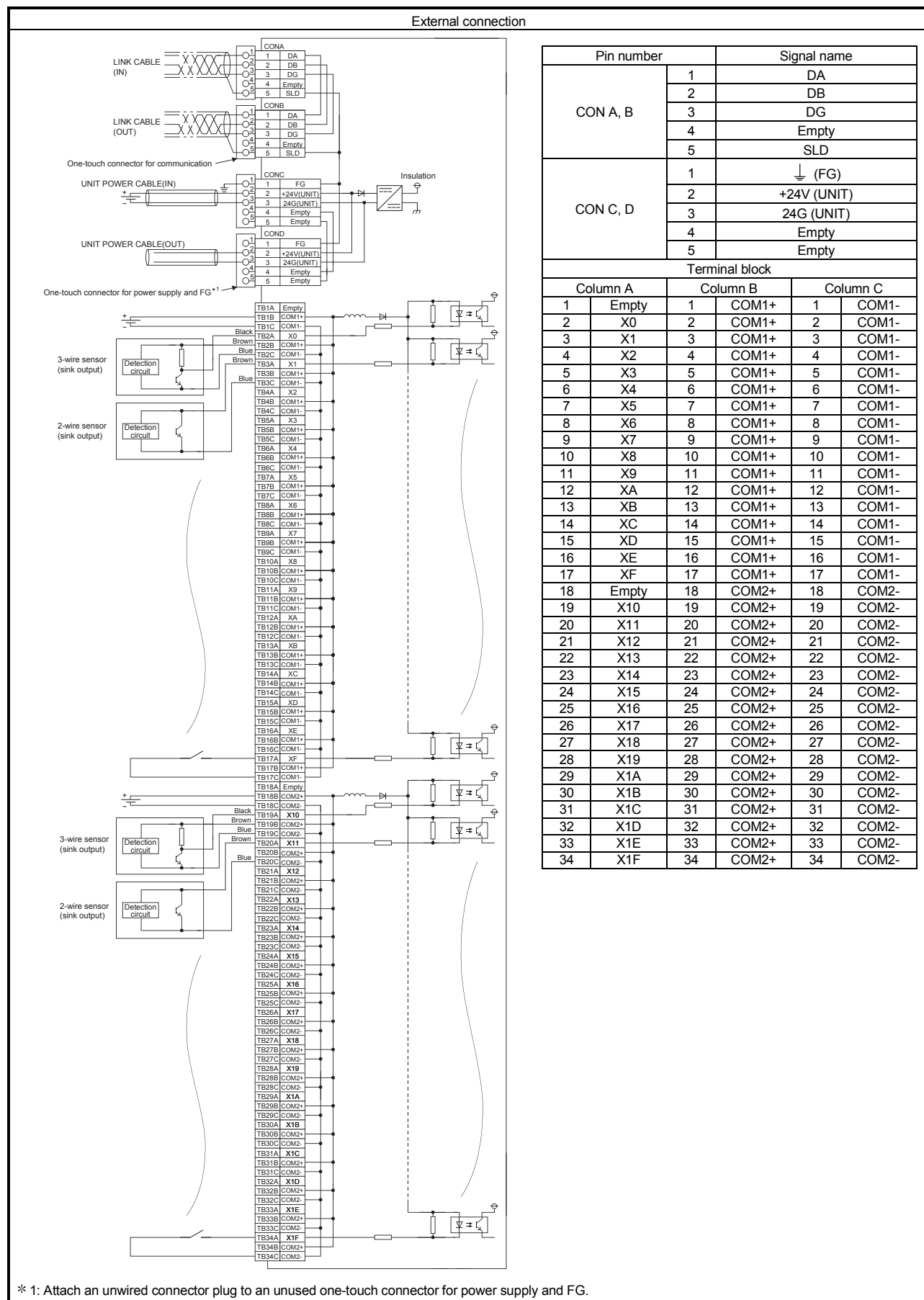


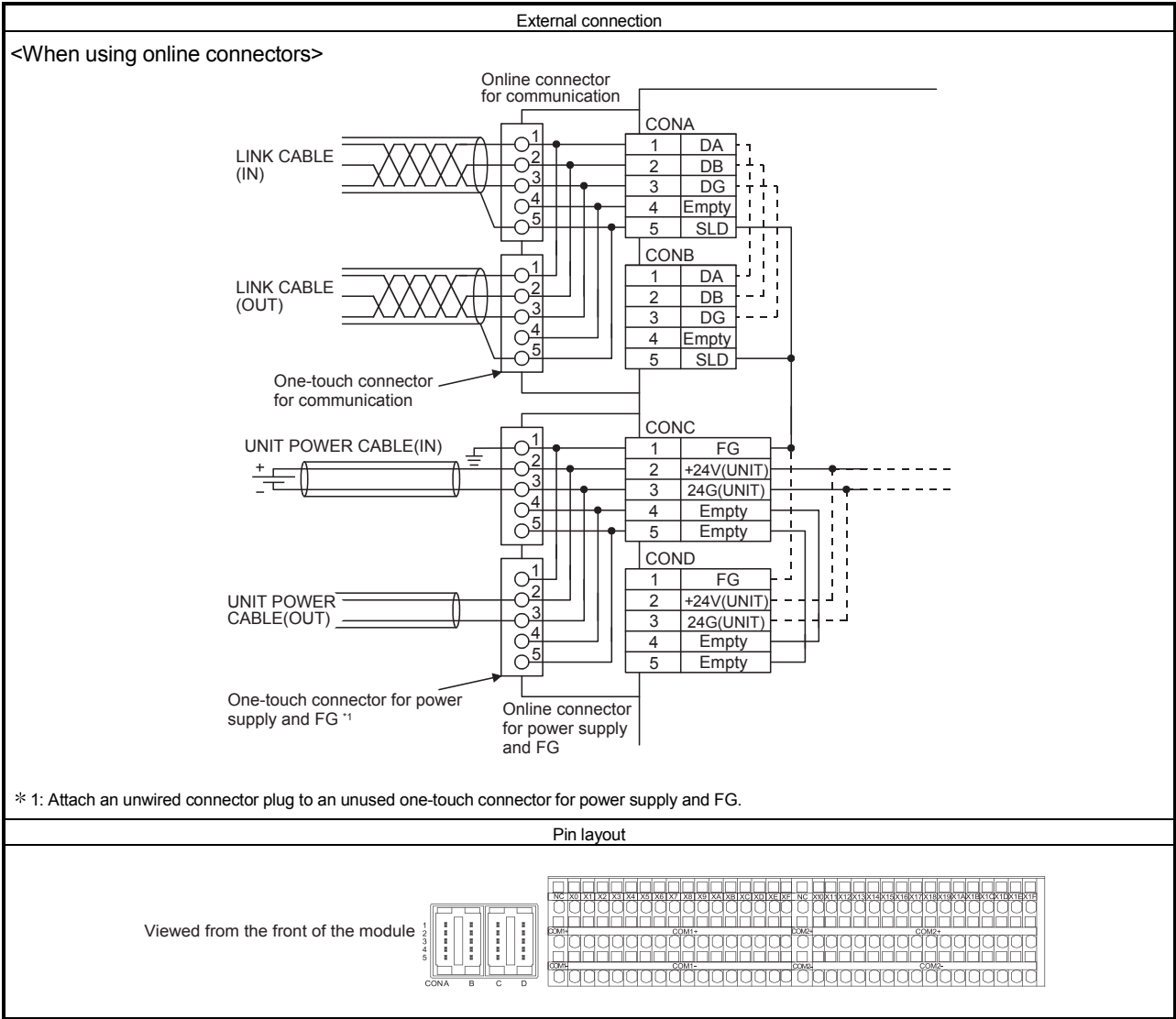


## 4.2.2 AJ65VBTS3-32D 24VDC input module (positive common (sink type))

| Type                                     |                                     | DC input module                                                                                                                                                                                                                 |  | Appearance                                             |
|------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------|
| Item                                     |                                     | AJ65VBTS3-32D                                                                                                                                                                                                                   |  |                                                        |
| Number of input points                   |                                     | 32 points                                                                                                                                                                                                                       |  |                                                        |
| Isolation method                         |                                     | Photocoupler                                                                                                                                                                                                                    |  |                                                        |
| Rated input voltage                      |                                     | 24VDC                                                                                                                                                                                                                           |  |                                                        |
| Rated input current                      |                                     | Approx. 5mA                                                                                                                                                                                                                     |  |                                                        |
| Operating voltage range                  |                                     | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |  |                                                        |
| Max. number of simultaneous input points |                                     | 100% or 69% (Refer to Section 1.3.)                                                                                                                                                                                             |  |                                                        |
| ON voltage/ON current                    |                                     | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                 |  |                                                        |
| OFF voltage/OFF current                  |                                     | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                    |  |                                                        |
| Input resistance                         |                                     | Approx. 4.7kΩ                                                                                                                                                                                                                   |  |                                                        |
| Response time                            | OFF→ON                              | 1.5ms or less (at 24VDC)                                                                                                                                                                                                        |  |                                                        |
|                                          | ON→OFF                              | 1.5ms or less (at 24VDC)                                                                                                                                                                                                        |  |                                                        |
| Wiring method for common                 |                                     | 16 points/common (3-wire, spring clamp terminal block type)                                                                                                                                                                     |  |                                                        |
| Input type                               |                                     | Positive common (sink type)                                                                                                                                                                                                     |  |                                                        |
| Supply current for connected device      |                                     | 2.0A or lower/common                                                                                                                                                                                                            |  |                                                        |
| Number of occupied stations              |                                     | 32-point assignment/station (32 points used)                                                                                                                                                                                    |  |                                                        |
| Module power supply                      | Voltage                             | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |  |                                                        |
|                                          | Current                             | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                                      |  |                                                        |
| Noise immunity                           |                                     | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                          |  |                                                        |
| Withstand voltage                        |                                     | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                |  |                                                        |
| Insulation resistance                    |                                     | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                               |  |                                                        |
| Protection degree                        |                                     | IP1XB                                                                                                                                                                                                                           |  |                                                        |
| Weight                                   |                                     | 0.41kg                                                                                                                                                                                                                          |  |                                                        |
| External connection system               | Communication part                  | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                    |  |                                                        |
|                                          | Power supply part                   | One-touch connector for power supply and FG [Module power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P                          |  |                                                        |
|                                          | I/O part                            | 2-piece spring clamp terminal block [I/O power supply, I/O signals]                                                                                                                                                             |  |                                                        |
|                                          | Applicable DIN rail                 | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                               |  |                                                        |
| Applicable wire size                     | Connector for communication         | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                         |  |                                                        |
|                                          | Connector for power supply and FG   | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                      |  |                                                        |
|                                          | Spring clamp terminal block for I/O | Stranded wire 0.08 to 1.5mm <sup>2</sup> (28 to 16 AWG) <sup>* 1</sup><br>Wire strip length: 8 to 11mm                                                                                                                          |  |                                                        |
|                                          | Applicable solderless terminal      | TE0.5 [Applicable wire size: 0.5mm <sup>2</sup> ]<br>TE0.75 [Applicable wire size: 0.75mm <sup>2</sup> ]<br>TE1 [Applicable wire size: 0.9 to 1.0mm <sup>2</sup> ]<br>TE1.5 [Applicable wire size: 1.25 to 1.5mm <sup>2</sup> ] |  |                                                        |
|                                          |                                     | Accessory                                                                                                                                                                                                                       |  | User's manual, Holding fixtures for screw installation |

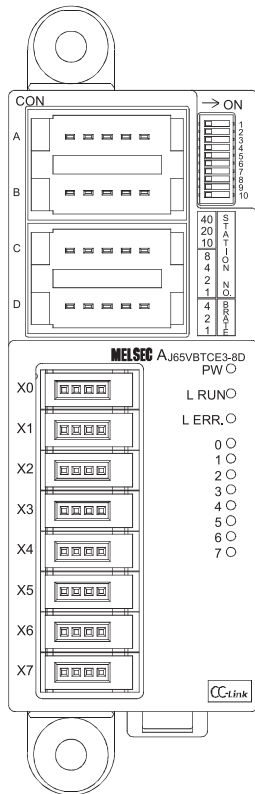
\* 1: Insert one wire per terminal.



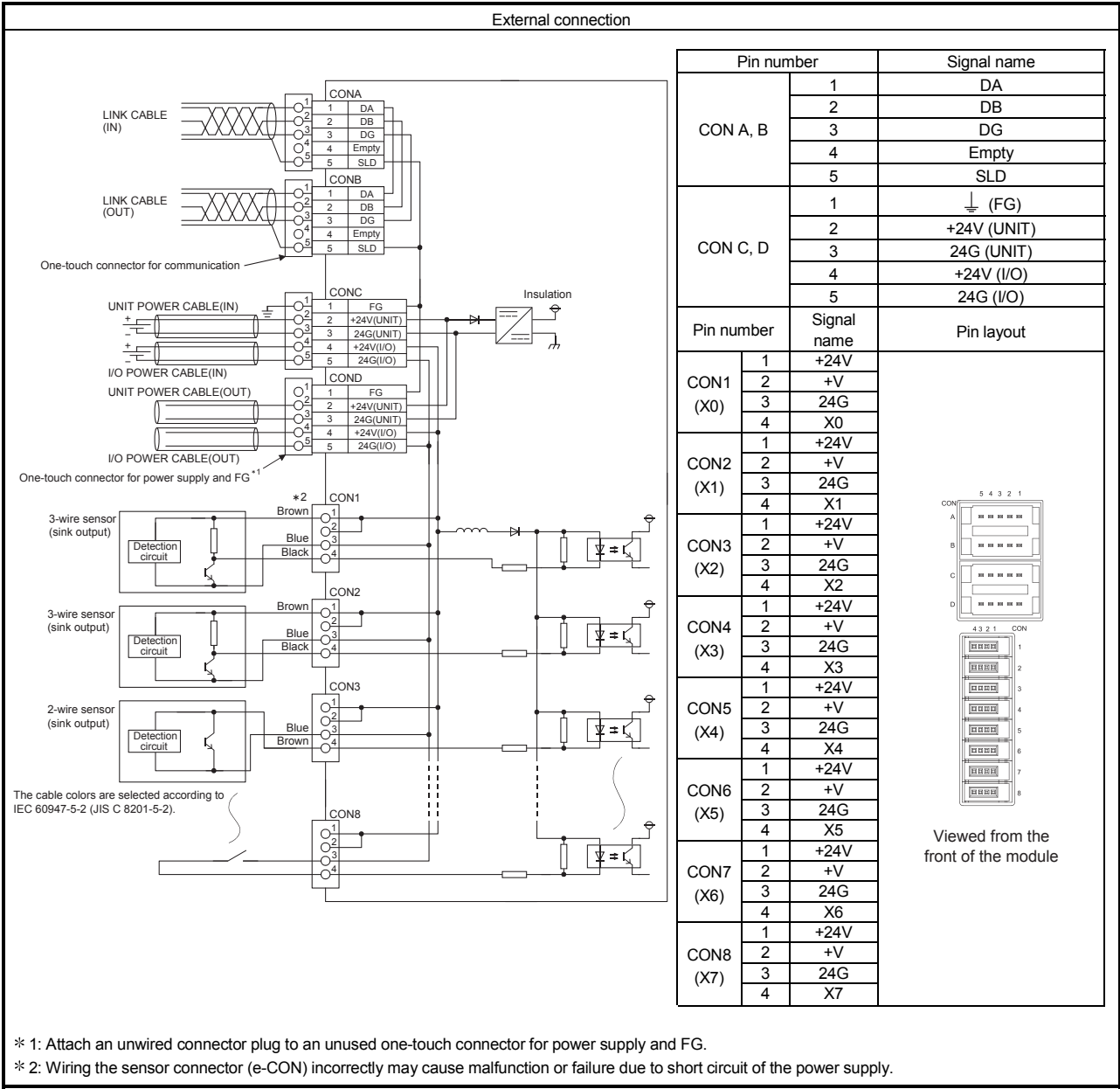


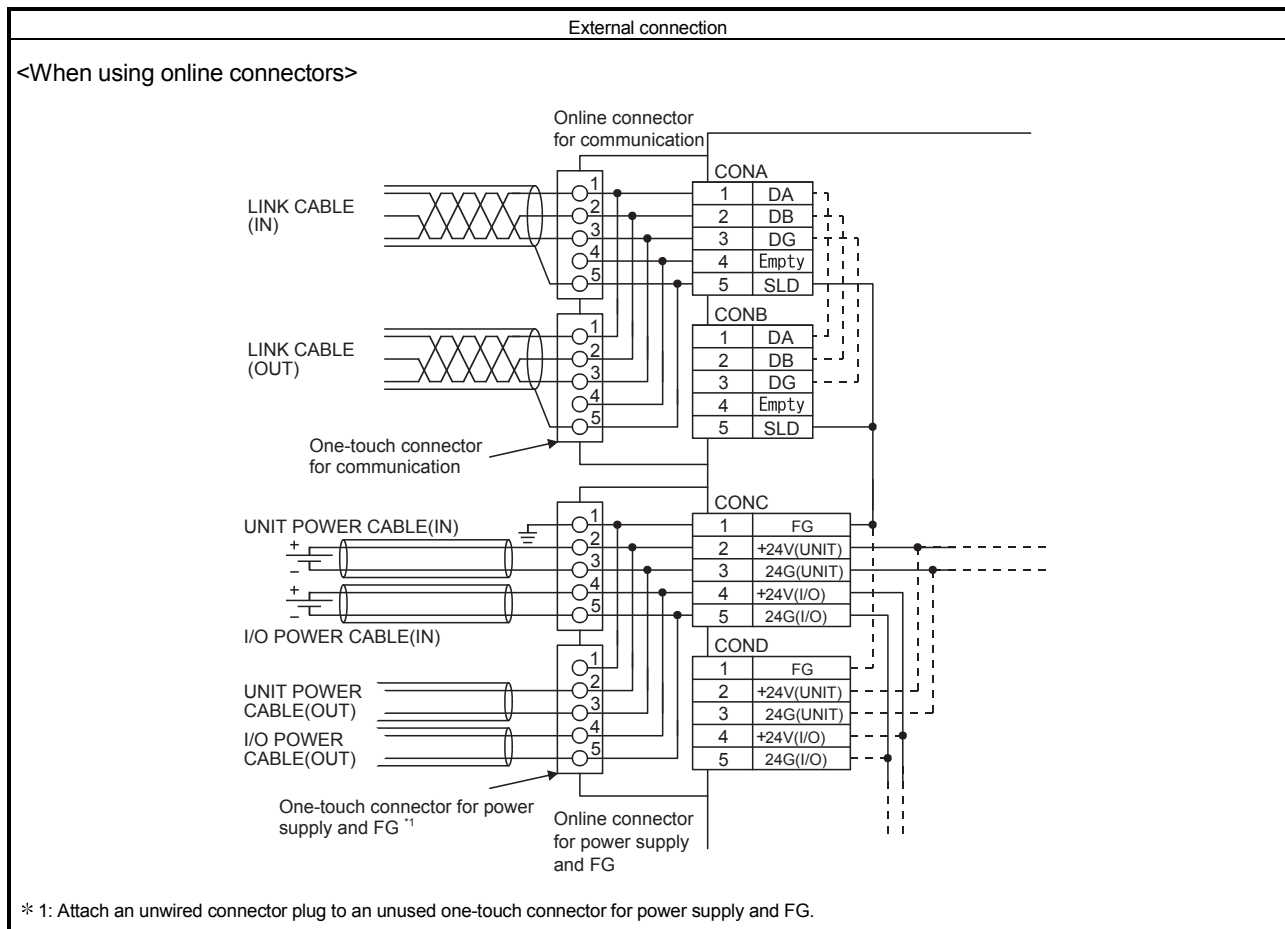
## 4.3 Sensor Connector (e-CON) Type Input Module

## 4.3.1 AJ65VBTC3-8D 24VDC input module (positive common (sink type))

| Type                                     |                                   | DC input module                                                                                                                                                                                                             | Appearance                                                                           |
|------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                     |                                   | AJ65VBTC3-8D                                                                                                                                                                                                                |                                                                                      |
| Number of input points                   |                                   | 8 points                                                                                                                                                                                                                    |  |
| Isolation method                         |                                   | Photocoupler                                                                                                                                                                                                                |                                                                                      |
| Rated input voltage                      |                                   | 24VDC                                                                                                                                                                                                                       |                                                                                      |
| Rated input current                      |                                   | Approx. 5mA                                                                                                                                                                                                                 |                                                                                      |
| Operating voltage range                  |                                   | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
| Max. number of simultaneous input points |                                   | 100%                                                                                                                                                                                                                        |                                                                                      |
| ON voltage/ON current                    |                                   | 14VDC or higher/3.5mA or higher                                                                                                                                                                                             |                                                                                      |
| OFF voltage/OFF current                  |                                   | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                |                                                                                      |
| Input resistance                         |                                   | Approx. 4.7kΩ                                                                                                                                                                                                               |                                                                                      |
| Response time                            | OFF→ON                            | 1.5ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                      |
|                                          | ON→OFF                            | 1.5ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                      |
| Wiring method for common                 |                                   | 8 points/common (3-wire, sensor connector (e-CON) type)                                                                                                                                                                     |                                                                                      |
| Input type                               |                                   | Positive common (sink type)                                                                                                                                                                                                 |                                                                                      |
| Supply current for connected device      |                                   | 1.0A or lower/common                                                                                                                                                                                                        |                                                                                      |
| Number of occupied stations              |                                   | 32-point assignment/station (8 points used)                                                                                                                                                                                 |                                                                                      |
| Module power supply                      | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
|                                          | Current                           | 30mA or lower (at 24VDC and all points ON)                                                                                                                                                                                  |                                                                                      |
| Noise immunity                           |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                      |                                                                                      |
| Withstand voltage                        |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                            |                                                                                      |
| Insulation resistance                    |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                           |                                                                                      |
| Protection degree                        |                                   | IP1XB                                                                                                                                                                                                                       |                                                                                      |
| Weight                                   |                                   | 0.10kg                                                                                                                                                                                                                      |                                                                                      |
| External connection system               | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                |                                                                                      |
|                                          |                                   |                                                                                                                                                                                                                             |                                                                                      |
|                                          | Power supply part                 | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |                                                                                      |
|                                          | I/O part                          | Sensor connector (e-CON) [I/O signals]<br>4-pin IDC plug is sold separately. * 1                                                                                                                                            |                                                                                      |
| Applicable DIN rail                      |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                           |                                                                                      |
| Applicable wire size                     | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                     |                                                                                      |
|                                          | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (AWG18)<br>[φ2.2 to 3.0mm (A6CON-PW5P),<br>φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                |                                                                                      |
|                                          | Connector for I/O                 | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                                    |                                                                                      |
| Accessory                                |                                   | User's manual, Holding fixtures for screw installation                                                                                                                                                                      |                                                                                      |

\* 1: Refer to Section 1.6.2 for details.





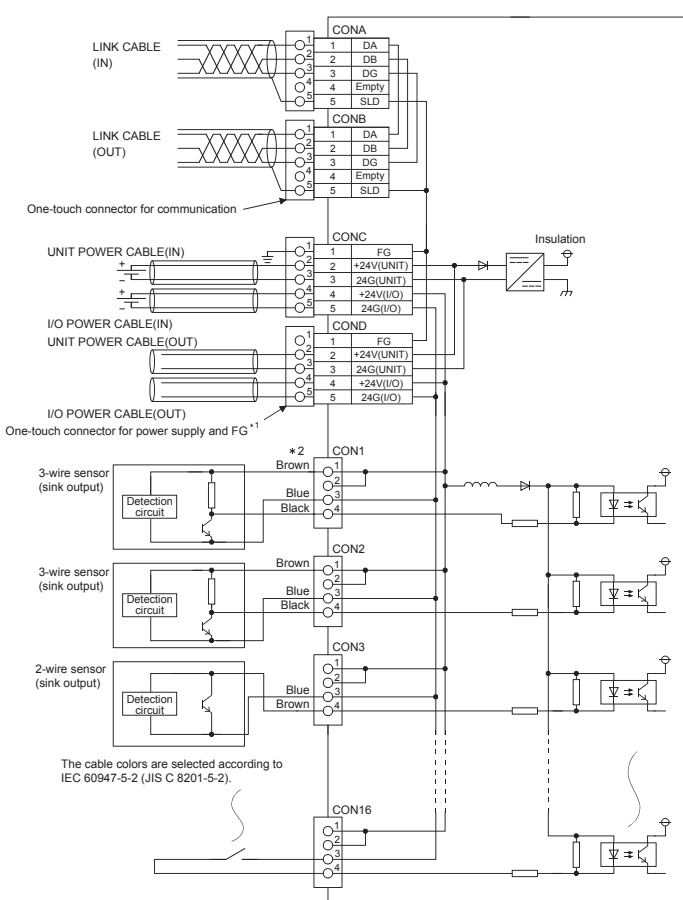


## 4.3.2 AJ65VBTCE3-16D 24VDC input module (positive common (sink type))

| Type                                     |                                   | DC input module                                                                                                                                                                                                             |                                                                                  | Appearance |
|------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------|
| Item                                     |                                   | AJ65VBTCE3-16D                                                                                                                                                                                                              |                                                                                  |            |
| Number of input points                   |                                   | 16 points                                                                                                                                                                                                                   |                                                                                  |            |
| Isolation method                         |                                   | Photocoupler                                                                                                                                                                                                                |                                                                                  |            |
| Rated input voltage                      |                                   | 24VDC                                                                                                                                                                                                                       |                                                                                  |            |
| Rated input current                      |                                   | Approx. 5mA                                                                                                                                                                                                                 |                                                                                  |            |
| Operating voltage range                  |                                   | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                  |            |
| Max. number of simultaneous input points |                                   | 100% or 62.5% (Refer to Section 1.3.)                                                                                                                                                                                       |                                                                                  |            |
| ON voltage/ON current                    |                                   | 14VDC or higher/3.5mA or higher                                                                                                                                                                                             |                                                                                  |            |
| OFF voltage/OFF current                  |                                   | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                |                                                                                  |            |
| Input resistance                         |                                   | Approx. 4.7kΩ                                                                                                                                                                                                               |                                                                                  |            |
| Response time                            | OFF→ON                            | 1.5ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                  |            |
|                                          | ON→OFF                            | 1.5ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                  |            |
| Wiring method for common                 |                                   | 16 points/common (3-wire, sensor connector (e-CON) type)                                                                                                                                                                    |                                                                                  |            |
| Input type                               |                                   | Positive common (sink type)                                                                                                                                                                                                 |                                                                                  |            |
| Supply current for connected device      |                                   | 1.0A or lower/common                                                                                                                                                                                                        |                                                                                  |            |
| Number of occupied stations              |                                   | 32-point assignment/station (16 points used)                                                                                                                                                                                |                                                                                  |            |
| Module power supply                      | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                  |            |
|                                          | Current                           | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                  |                                                                                  |            |
| Noise immunity                           |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                      |                                                                                  |            |
| Withstand voltage                        |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                            |                                                                                  |            |
| Insulation resistance                    |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                           |                                                                                  |            |
| Protection degree                        |                                   | IP1XB                                                                                                                                                                                                                       |                                                                                  |            |
| Weight                                   |                                   | 0.10kg                                                                                                                                                                                                                      |                                                                                  |            |
| External connection system               | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                |                                                                                  |            |
|                                          |                                   | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |                                                                                  |            |
|                                          | Power supply part                 |                                                                                                                                                                                                                             |                                                                                  |            |
|                                          |                                   | I/O part                                                                                                                                                                                                                    | Sensor connector (e-CON) [I/O signals]<br>4-pin IDC plug is sold separately. * 1 |            |
| Applicable DIN rail                      |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                           |                                                                                  |            |
| Applicable wire size                     | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                     |                                                                                  |            |
|                                          | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                  |                                                                                  |            |
|                                          | Connector for I/O                 | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                                    |                                                                                  |            |
| Accessory                                |                                   | User's manual, Holding fixtures for screw installation                                                                                                                                                                      |                                                                                  |            |

\* 1: Refer to Section 1.6.2 for details.

External connection



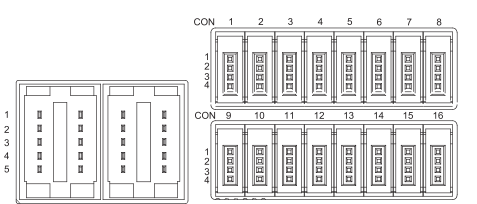
| Pin number |  | Signal name |             |
|------------|--|-------------|-------------|
| CON A, B   |  | 1           | DA          |
|            |  | 2           | DB          |
|            |  | 3           | DG          |
|            |  | 4           | Empty       |
|            |  | 5           | SLD         |
| CON C, D   |  | 1           | ⏏ (FG)      |
|            |  | 2           | +24V (UNIT) |
|            |  | 3           | 24G (UNIT)  |
|            |  | 4           | +24V (I/O)  |
|            |  | 5           | 24G (I/O)   |

| Pin number | Signal name | Pin number | Signal name | Pin number  | Signal name | Pin number  | Signal name |
|------------|-------------|------------|-------------|-------------|-------------|-------------|-------------|
| CON 1 (X0) | 1 +24V      | CON 5 (X4) | 1 +24V      | CON 9 (X8)  | 1 +24V      | CON 13 (XC) | 1 +24V      |
|            | 2 +V        |            | 2 +V        |             | 2 +V        |             | 2 +V        |
|            | 3 24G       |            | 3 24G       |             | 3 24G       |             | 3 24G       |
|            | 4 X0        |            | 4 X4        |             | 4 X8        |             | 4 XC        |
| CON 2 (X1) | 1 +24V      | CON 6 (X5) | 1 +24V      | CON 10 (X9) | 1 +24V      | CON 14 (XD) | 1 +24V      |
|            | 2 +V        |            | 2 +V        |             | 2 +V        |             | 2 +V        |
|            | 3 24G       |            | 3 24G       |             | 3 24G       |             | 3 24G       |
|            | 4 X1        |            | 4 X5        |             | 4 X9        |             | 4 XD        |
| CON 3 (X2) | 1 +24V      | CON 7 (X6) | 1 +24V      | CON 11 (XA) | 1 +24V      | CON 15 (XE) | 1 +24V      |
|            | 2 +V        |            | 2 +V        |             | 2 +V        |             | 2 +V        |
|            | 3 24G       |            | 3 24G       |             | 3 24G       |             | 3 24G       |
|            | 4 X2        |            | 4 X6        |             | 4 XA        |             | 4 XE        |
| CON 4 (X3) | 1 +24V      | CON 8 (X7) | 1 +24V      | CON 12 (XB) | 1 +24V      | CON 16 (XF) | 1 +24V      |
|            | 2 +V        |            | 2 +V        |             | 2 +V        |             | 2 +V        |
|            | 3 24G       |            | 3 24G       |             | 3 24G       |             | 3 24G       |
|            | 4 X3        |            | 4 X7        |             | 4 XB        |             | 4 XF        |

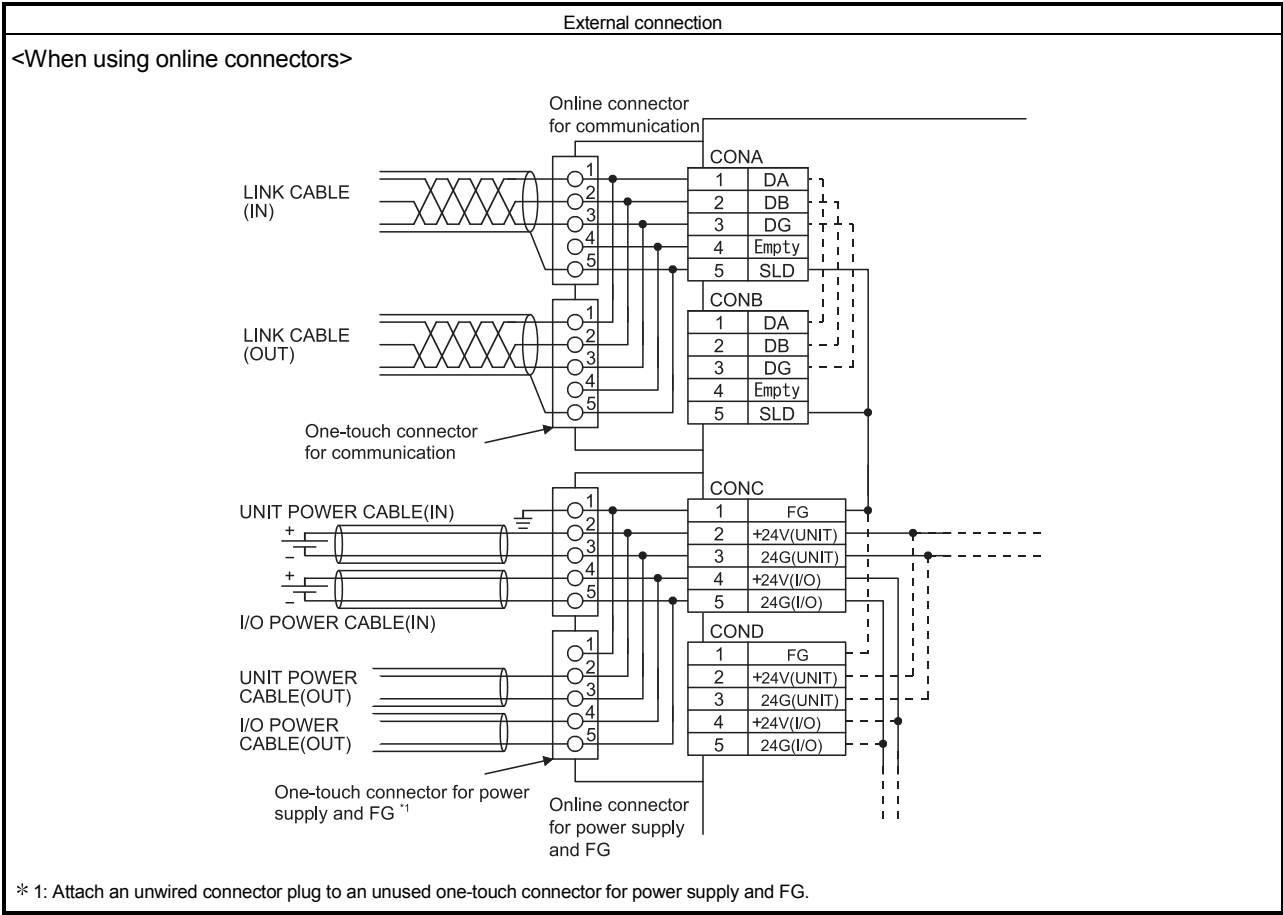
\* 1: Attach an unwired connector plug to an unused one-touch connector for power supply and FG.

\* 2: Wiring the sensor connector (e-CON) incorrectly may cause malfunction or failure due to short circuit of the power supply.

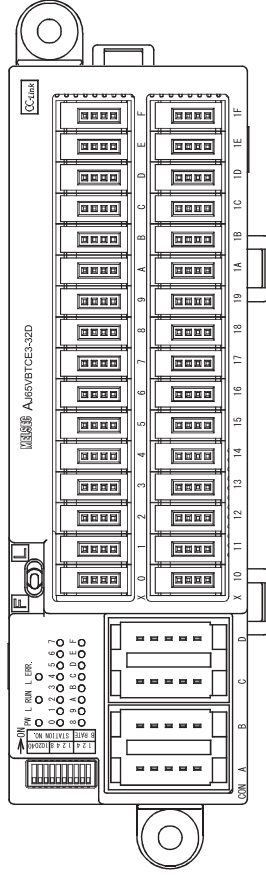
Pin layout



Viewed from the front of the module



## 4.3.3 AJ65VBTCE3-32D 24VDC input module (positive common (sink type))

| Specification                            |                                   | Type | DC input module                                                                                                                                                                                                             | Appearance                                                                           |
|------------------------------------------|-----------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                   |      | AJ65VBTCE3-32D                                                                                                                                                                                                              |                                                                                      |
| Number of input points                   |                                   |      | 32 points                                                                                                                                                                                                                   |  |
| Isolation method                         |                                   |      | Photocoupler                                                                                                                                                                                                                |                                                                                      |
| Rated input voltage                      |                                   |      | 24VDC                                                                                                                                                                                                                       |                                                                                      |
| Rated input current                      |                                   |      | Approx. 5mA                                                                                                                                                                                                                 |                                                                                      |
| Operating voltage range                  |                                   |      | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
| Max. number of simultaneous input points |                                   |      | 100% or 75% (Refer to Section 1.3.)                                                                                                                                                                                         |                                                                                      |
| ON voltage/ON current                    |                                   |      | 14VDC or higher/3.5mA or higher                                                                                                                                                                                             |                                                                                      |
| OFF voltage/OFF current                  |                                   |      | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                |                                                                                      |
| Input resistance                         |                                   |      | Approx. 4.7kΩ                                                                                                                                                                                                               |                                                                                      |
| Response time                            | OFF→ON                            |      | 1.5ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                      |
|                                          | ON→OFF                            |      | 1.5ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                      |
| Wiring method for common                 |                                   |      | 32 points/common (3-wire, sensor connector (e-CON) type)                                                                                                                                                                    |                                                                                      |
| Input type                               |                                   |      | Positive common (sink type)                                                                                                                                                                                                 |                                                                                      |
| Supply current for connected device      |                                   |      | 2.0A or lower/common                                                                                                                                                                                                        |                                                                                      |
| Number of occupied stations              |                                   |      | 32-point assignment/station (32 points used)                                                                                                                                                                                |                                                                                      |
| Module power supply                      | Voltage                           |      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
|                                          | Current                           |      | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                                  |                                                                                      |
| Noise immunity                           |                                   |      | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                      |                                                                                      |
| Withstand voltage                        |                                   |      | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                            |                                                                                      |
| Insulation resistance                    |                                   |      | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                           |                                                                                      |
| Protection degree                        |                                   |      | IP1XB                                                                                                                                                                                                                       |                                                                                      |
| Weight                                   |                                   |      | 0.16kg                                                                                                                                                                                                                      |                                                                                      |
| External connection system               | Communication part                |      | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                |                                                                                      |
|                                          |                                   |      |                                                                                                                                                                                                                             |                                                                                      |
|                                          | Power supply part                 |      | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |                                                                                      |
|                                          |                                   |      |                                                                                                                                                                                                                             |                                                                                      |
| Applicable wire size                     | I/O part                          |      | Sensor connector (e-CON) [I/O signals]<br>4-pin IDC plug is sold separately. *1                                                                                                                                             |                                                                                      |
|                                          | Applicable DIN rail               |      | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                           |                                                                                      |
|                                          | Connector for communication       |      | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                     |                                                                                      |
| Accessory                                | Connector for power supply and FG |      | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                  |                                                                                      |
|                                          | Connector for I/O                 |      | Sensor connector (e-CON). Applicable connector plugs are sold separately. *1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                                        |                                                                                      |
|                                          | Accessory                         |      | User's manual, Holding fixtures for screw installation                                                                                                                                                                      |                                                                                      |

\* 1: Refer to Section 1.6.2 for details.

External connection

LINK CABLE (IN)

LINK CABLE (OUT)

One-touch connector for communication

UNIT POWER CABLE (IN)

UNIT POWER CABLE (OUT)

I/O POWER CABLE (IN)

I/O POWER CABLE (OUT)

One-touch connector for power supply and FG

3-wire sensor (sink output)

3-wire sensor (sink output)

2-wire sensor (sink output)

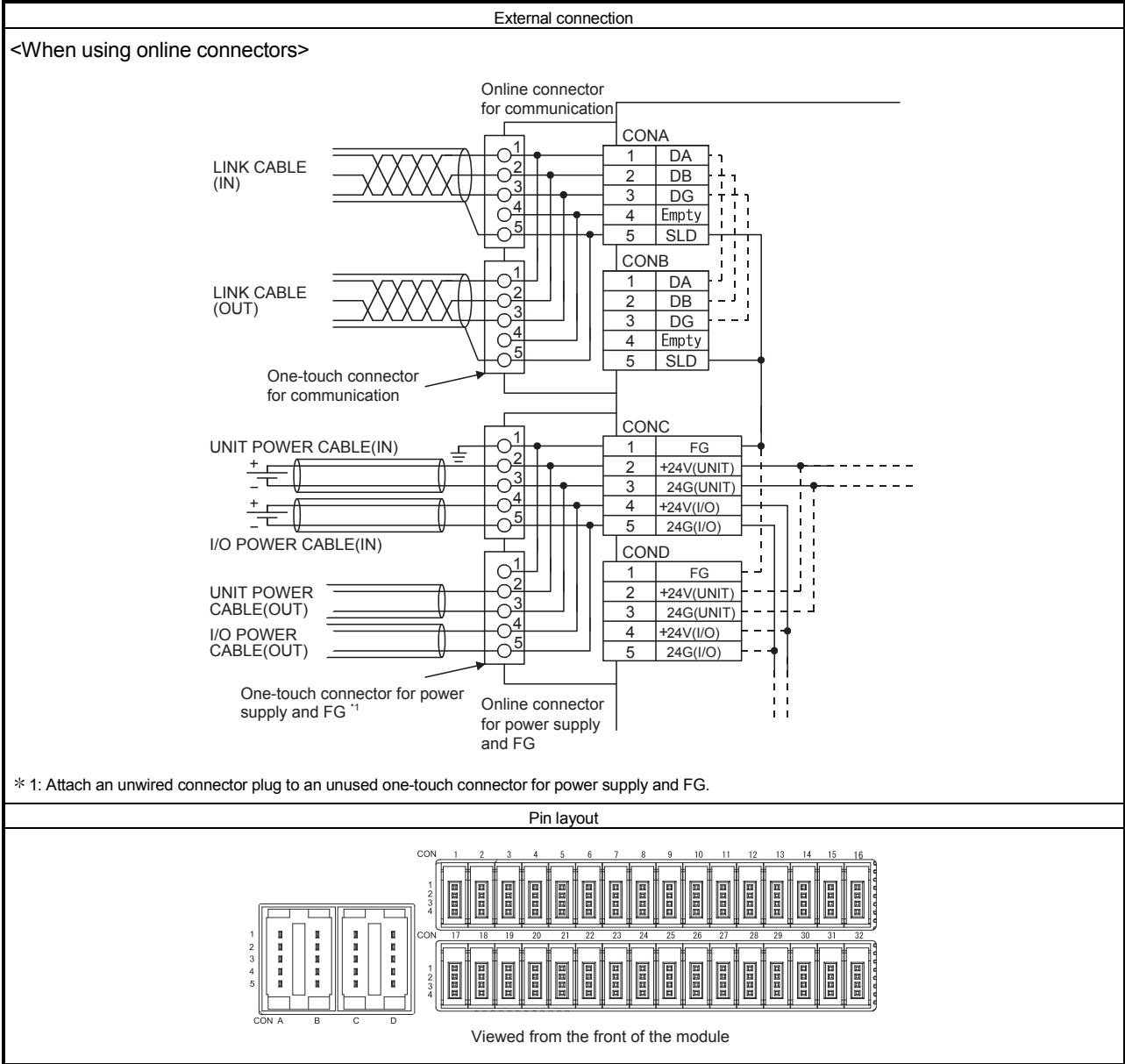
The cable colors are selected according to IEC 60947-5-2 (JIS C 8201-5-2).

| Pin number |   | Signal name |  |
|------------|---|-------------|--|
| CON A, B   | 1 | DA          |  |
|            | 2 | DB          |  |
|            | 3 | DG          |  |
|            | 4 | Empty       |  |
|            | 5 | SLD         |  |
| CON C, D   | 1 | ⏏ (FG)      |  |
|            | 2 | +24V (UNIT) |  |
|            | 3 | 24G (UNIT)  |  |
|            | 4 | +24V (I/O)  |  |
|            | 5 | 24G (I/O)   |  |

| Pin number | Signal name | Pin number  | Signal name | Pin number   | Signal name | Pin number   | Signal name |
|------------|-------------|-------------|-------------|--------------|-------------|--------------|-------------|
| CON 1 (X0) | 1 +24V      | CON 9 (X8)  | 1 +24V      | CON 17 (X10) | 1 +24V      | CON 25 (X18) | 1 +24V      |
|            | 2 +V        |             | 2 +V        |              | 2 +V        |              | 2 +V        |
|            | 3 24G       |             | 3 24G       |              | 3 24G       |              | 3 24G       |
|            | 4 X0        |             | 4 X8        |              | 4 X10       |              | 4 X18       |
| CON 2 (X1) | 1 +24V      | CON 10 (X9) | 1 +24V      | CON 18 (X11) | 1 +24V      | CON 26 (X19) | 1 +24V      |
|            | 2 +V        |             | 2 +V        |              | 2 +V        |              | 2 +V        |
|            | 3 24G       |             | 3 24G       |              | 3 24G       |              | 3 24G       |
|            | 4 X1        |             | 4 X9        |              | 4 X11       |              | 4 X19       |
| CON 3 (X2) | 1 +24V      | CON 11 (XA) | 1 +24V      | CON 19 (X12) | 1 +24V      | CON 27 (X1A) | 1 +24V      |
|            | 2 +V        |             | 2 +V        |              | 2 +V        |              | 2 +V        |
|            | 3 24G       |             | 3 24G       |              | 3 24G       |              | 3 24G       |
|            | 4 X2        |             | 4 XA        |              | 4 X12       |              | 4 X1A       |
| CON 4 (X3) | 1 +24V      | CON 12 (XB) | 1 +24V      | CON 20 (X13) | 1 +24V      | CON 28 (X1B) | 1 +24V      |
|            | 2 +V        |             | 2 +V        |              | 2 +V        |              | 2 +V        |
|            | 3 24G       |             | 3 24G       |              | 3 24G       |              | 3 24G       |
|            | 4 X3        |             | 4 XB        |              | 4 X13       |              | 4 X1B       |
| CON 5 (X4) | 1 +24V      | CON 13 (XC) | 1 +24V      | CON 21 (X14) | 1 +24V      | CON 29 (X1C) | 1 +24V      |
|            | 2 +V        |             | 2 +V        |              | 2 +V        |              | 2 +V        |
|            | 3 24G       |             | 3 24G       |              | 3 24G       |              | 3 24G       |
|            | 4 X4        |             | 4 XC        |              | 4 X14       |              | 4 X1C       |
| CON 6 (X5) | 1 +24V      | CON 14 (XD) | 1 +24V      | CON 22 (X15) | 1 +24V      | CON 30 (X1D) | 1 +24V      |
|            | 2 +V        |             | 2 +V        |              | 2 +V        |              | 2 +V        |
|            | 3 24G       |             | 3 24G       |              | 3 24G       |              | 3 24G       |
|            | 4 X5        |             | 4 XD        |              | 4 X15       |              | 4 X1D       |
| CON 7 (X6) | 1 +24V      | CON 15 (XE) | 1 +24V      | CON 23 (X16) | 1 +24V      | CON 31 (X1E) | 1 +24V      |
|            | 2 +V        |             | 2 +V        |              | 2 +V        |              | 2 +V        |
|            | 3 24G       |             | 3 24G       |              | 3 24G       |              | 3 24G       |
|            | 4 X6        |             | 4 XE        |              | 4 X16       |              | 4 X1E       |
| CON 8 (X7) | 1 +24V      | CON 16 (XF) | 1 +24V      | CON 24 (X17) | 1 +24V      | CON 32 (X1F) | 1 +24V      |
|            | 2 +V        |             | 2 +V        |              | 2 +V        |              | 2 +V        |
|            | 3 24G       |             | 3 24G       |              | 3 24G       |              | 3 24G       |
|            | 4 X7        |             | 4 XF        |              | 4 X17       |              | 4 X1F       |

\* 1: Attach an unwired connector plug to an unused one-touch connector for power supply and FG.

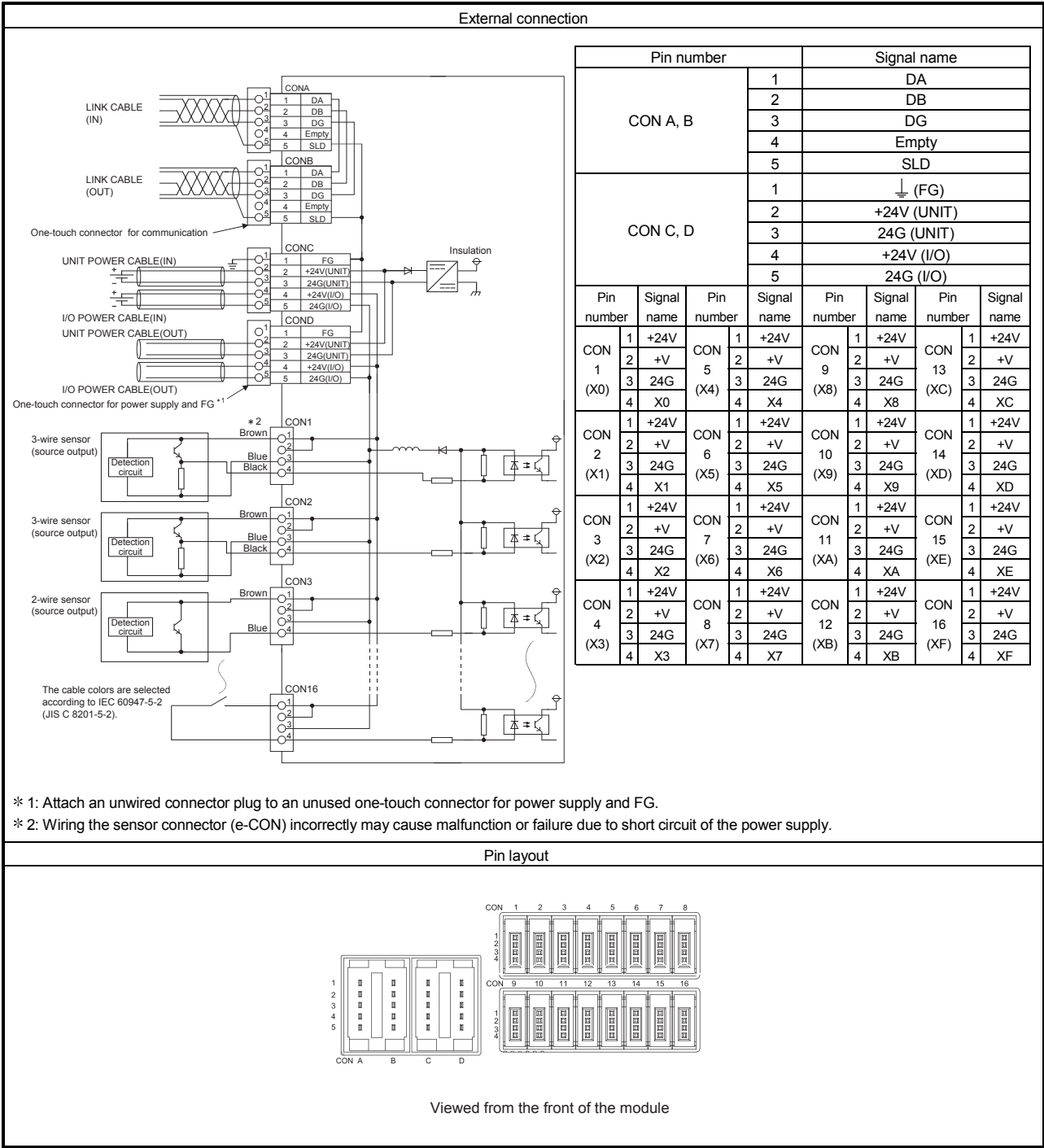
\* 2: Wiring the sensor connector (e-CON) incorrectly may cause malfunction or failure due to short circuit of the power supply.



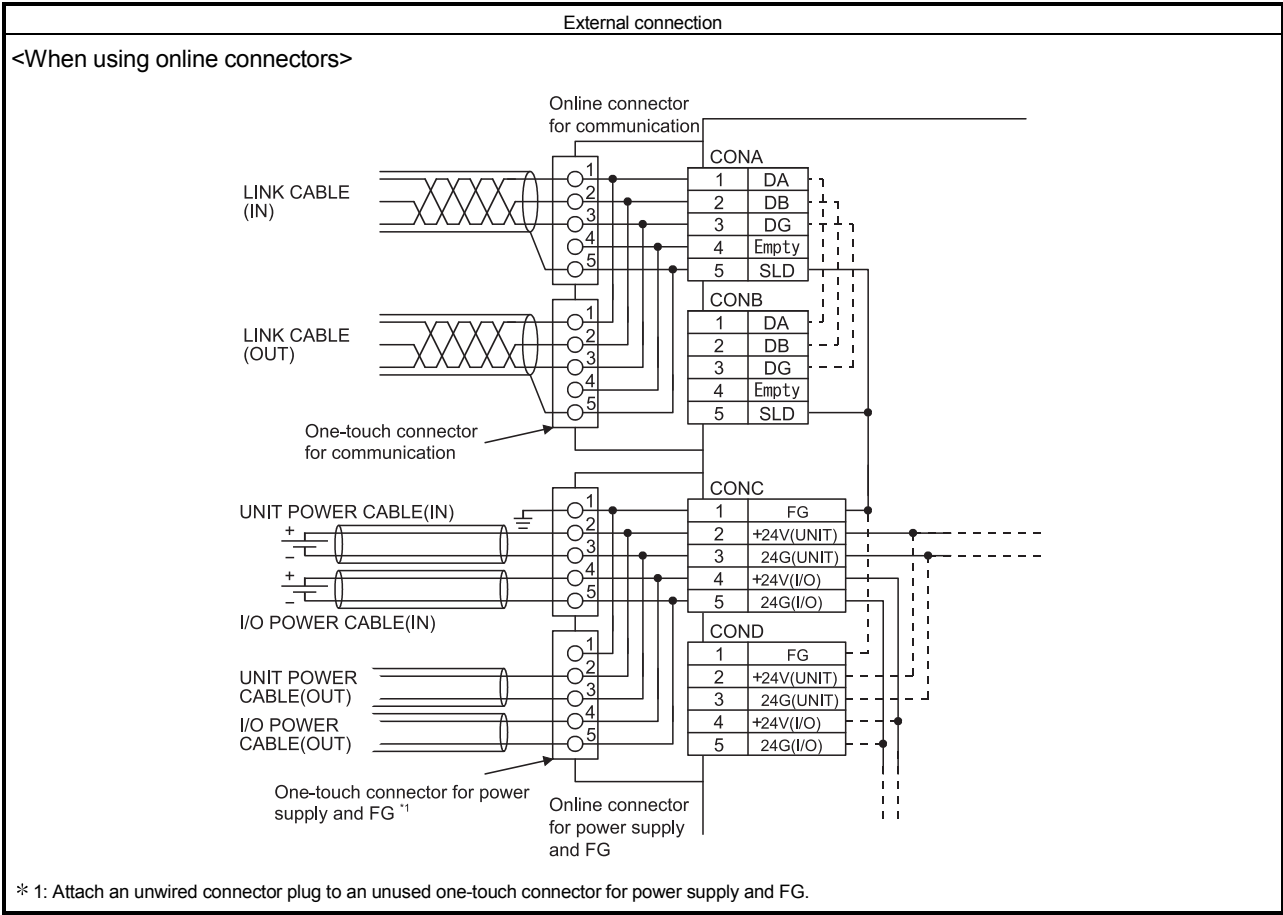
## 4.3.4 AJ65VBTCE3-16DE 24VDC input module (negative common (source type))

| Type                                     |                                   | DC input module                                                                                                                                                                                                             |  | Appearance |
|------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------|
| Item                                     |                                   | AJ65VBTCE3-16DE                                                                                                                                                                                                             |  |            |
| Number of input points                   |                                   | 16 points                                                                                                                                                                                                                   |  |            |
| Isolation method                         |                                   | Photocoupler                                                                                                                                                                                                                |  |            |
| Rated input voltage                      |                                   | 24VDC                                                                                                                                                                                                                       |  |            |
| Rated input current                      |                                   | Approx. 5mA                                                                                                                                                                                                                 |  |            |
| Operating voltage range                  |                                   | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |  |            |
| Max. number of simultaneous input points |                                   | 100% or 62.5% (Refer to Section1.3.)                                                                                                                                                                                        |  |            |
| ON voltage/ON current                    |                                   | 14VDC or higher/3.5mA or higher                                                                                                                                                                                             |  |            |
| OFF voltage/OFF current                  |                                   | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                |  |            |
| Input resistance                         |                                   | Approx. 4.7kΩ                                                                                                                                                                                                               |  |            |
| Response time                            | OFF→ON                            | 1.5ms or less (at 24VDC)                                                                                                                                                                                                    |  |            |
|                                          | ON→OFF                            | 1.5ms or less (at 24VDC)                                                                                                                                                                                                    |  |            |
| Wiring method for common                 |                                   | 16 points/common (3-wire, sensor connector (e-CON) type)                                                                                                                                                                    |  |            |
| Input type                               |                                   | Negative common (source type)                                                                                                                                                                                               |  |            |
| Supply current for connected device      |                                   | 1.0A or lower/common                                                                                                                                                                                                        |  |            |
| Number of occupied stations              |                                   | 32-point assignment/station (16 points used)                                                                                                                                                                                |  |            |
| Module power supply                      | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |  |            |
|                                          | Current                           | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                  |  |            |
| Noise immunity                           |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                      |  |            |
| Withstand voltage                        |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                            |  |            |
| Insulation resistance                    |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                           |  |            |
| Protection degree                        |                                   | IP1XB                                                                                                                                                                                                                       |  |            |
| Weight                                   |                                   | 0.11kg                                                                                                                                                                                                                      |  |            |
| External connection system               | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                |  |            |
|                                          | Power supply part                 | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |  |            |
|                                          | I/O part                          | Sensor connector (e-CON) [I/O signals]<br>4-pin IDC plug is sold separately. * 1                                                                                                                                            |  |            |
| Applicable DIN rail                      |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                           |  |            |
| Applicable wire size                     | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                     |  |            |
|                                          | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                  |  |            |
|                                          | Connector for I/O                 | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                                    |  |            |
| Accessory                                |                                   | User's manual, Holding fixtures for screw installation                                                                                                                                                                      |  |            |

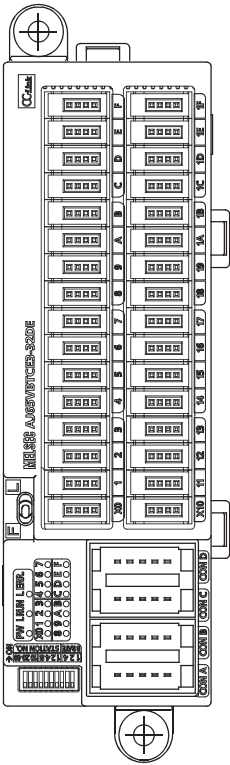
\* 1: Refer to Section 1.6.2 for details.



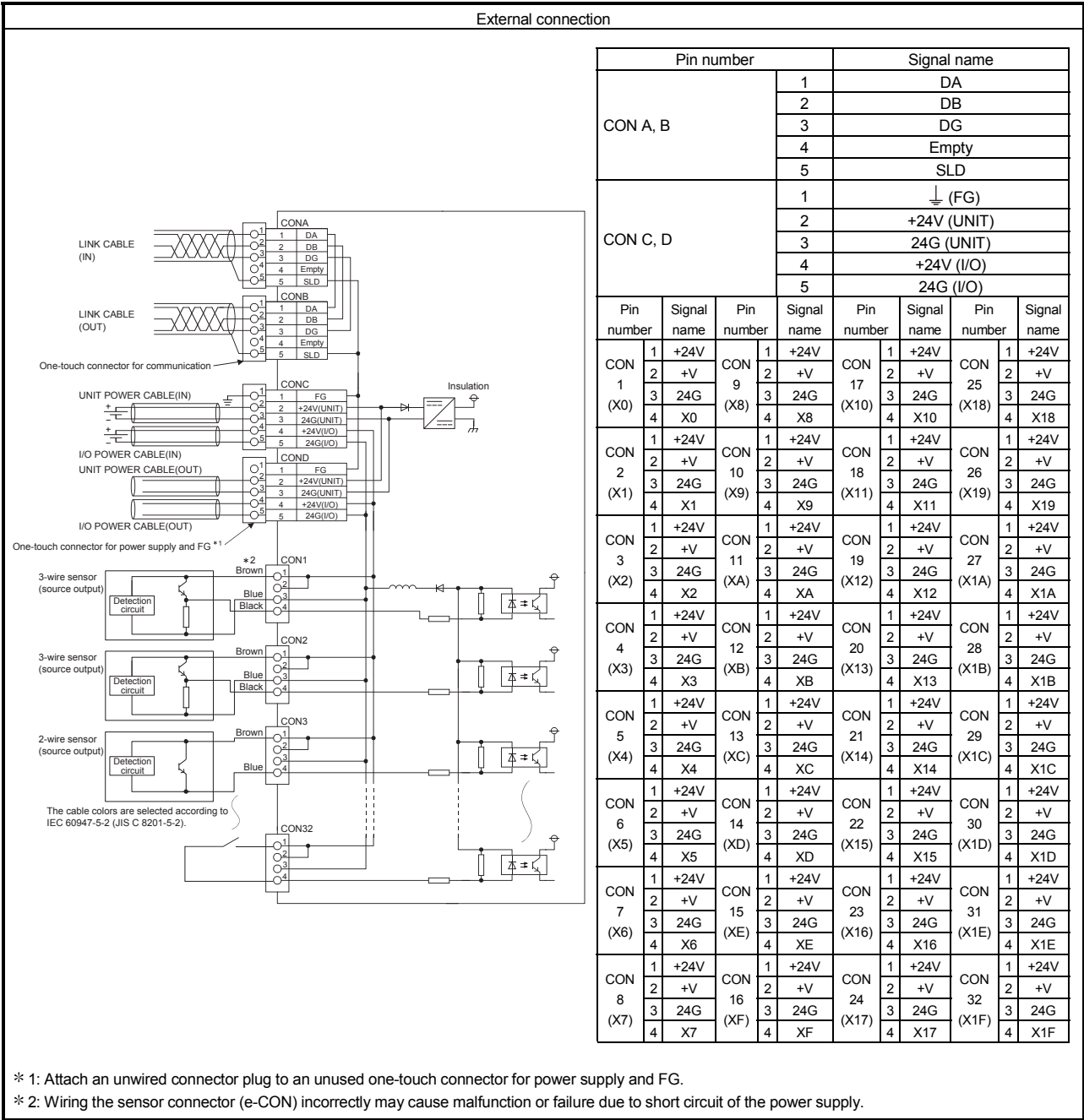


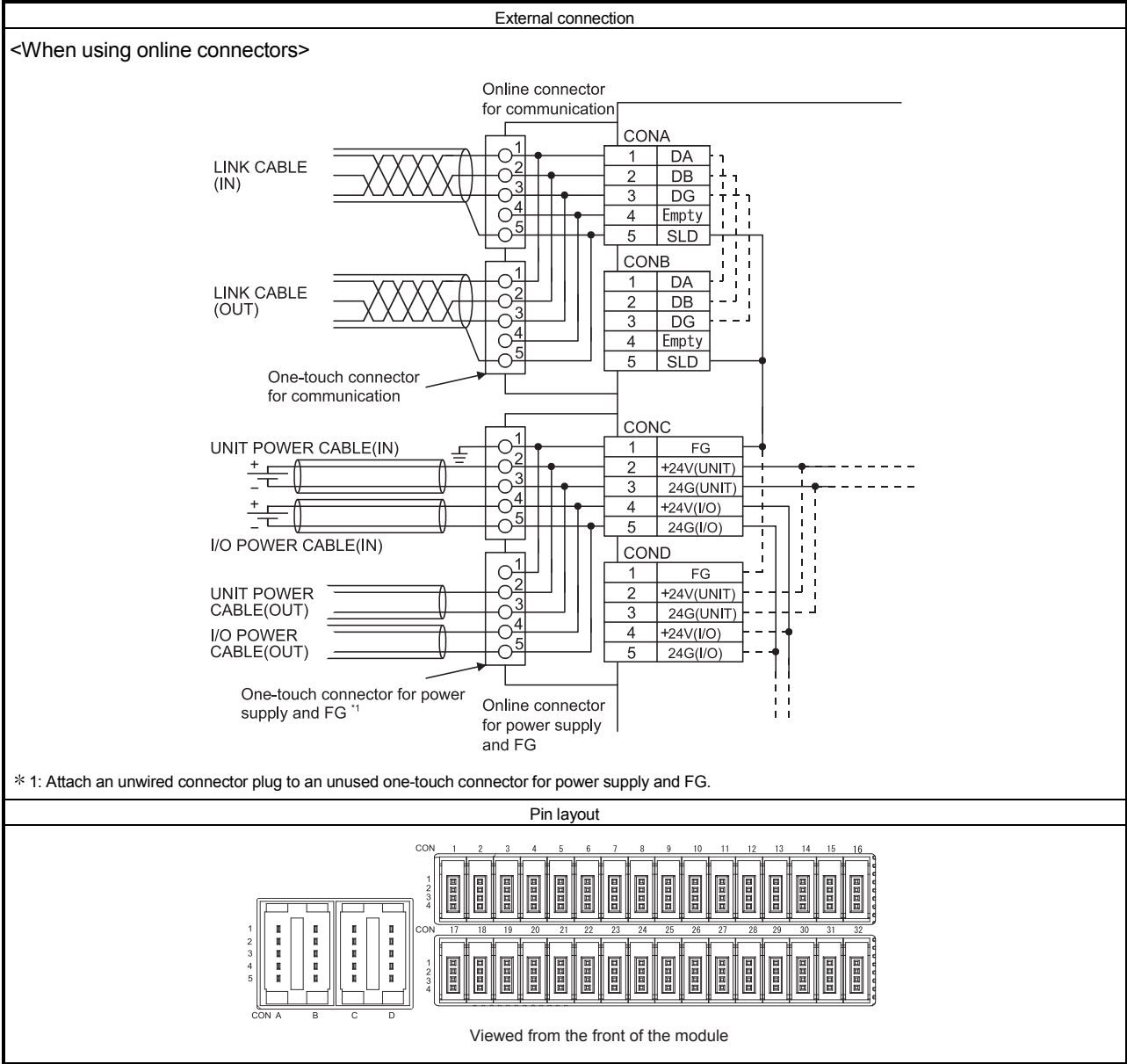


## 4.3.5 AJ65VBTCE3-32DE 24VDC input module (negative common (source type))

| Specification                            |                                   | Type | DC input module                                                                                                                                                                                                             | Appearance                                                                           |
|------------------------------------------|-----------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                   |      | AJ65VBTCE3-32DE                                                                                                                                                                                                             |                                                                                      |
| Number of input points                   |                                   |      | 32 points                                                                                                                                                                                                                   |  |
| Isolation method                         |                                   |      | Photocoupler                                                                                                                                                                                                                |                                                                                      |
| Rated input voltage                      |                                   |      | 24VDC                                                                                                                                                                                                                       |                                                                                      |
| Rated input current                      |                                   |      | Approx. 5mA                                                                                                                                                                                                                 |                                                                                      |
| Operating voltage range                  |                                   |      | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
| Max. number of simultaneous input points |                                   |      | 100% or 75% (Refer to Secion1.3.)                                                                                                                                                                                           |                                                                                      |
| ON voltage/ON current                    |                                   |      | 14VDC or higher/3.5mA or higher                                                                                                                                                                                             |                                                                                      |
| OFF voltage/OFF current                  |                                   |      | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                |                                                                                      |
| Input resistance                         |                                   |      | Approx. 4.7kΩ                                                                                                                                                                                                               |                                                                                      |
| Response time                            | OFF→ON                            |      | 1.5ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                      |
|                                          | ON→OFF                            |      | 1.5ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                      |
| Wiring method for common                 |                                   |      | 32 points/common (3-wire, sensor connector (e-CON) type)                                                                                                                                                                    |                                                                                      |
| Input type                               |                                   |      | Negative common (source type)                                                                                                                                                                                               |                                                                                      |
| Supply current for connected device      |                                   |      | 2.0A or lower/common                                                                                                                                                                                                        |                                                                                      |
| Number of occupied stations              |                                   |      | 32-point assignment/station (32 points used)                                                                                                                                                                                |                                                                                      |
| Module power supply                      | Voltage                           |      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
|                                          | Current                           |      | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                                  |                                                                                      |
| Noise immunity                           |                                   |      | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                      |                                                                                      |
| Withstand voltage                        |                                   |      | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                            |                                                                                      |
| Insulation resistance                    |                                   |      | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                           |                                                                                      |
| Protection degree                        |                                   |      | IP1XB                                                                                                                                                                                                                       |                                                                                      |
| Weight                                   |                                   |      | 0.16kg                                                                                                                                                                                                                      |                                                                                      |
| External connection system               | Communication part                |      | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                |                                                                                      |
|                                          | Power supply part                 |      | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |                                                                                      |
|                                          | I/O part                          |      | Sensor connector (e-CON) [I/O signals]<br>4-pin IDC plug is sold separately. * 1                                                                                                                                            |                                                                                      |
| Applicable DIN rail                      |                                   |      | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                           |                                                                                      |
| Applicable wire size                     | Connector for communication       |      | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                     |                                                                                      |
|                                          | Connector for power supply and FG |      | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                  |                                                                                      |
|                                          | Connector for I/O                 |      | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                                    |                                                                                      |
| Accessory                                |                                   |      | User's manual, Holding fixtures for screw installation                                                                                                                                                                      |                                                                                      |

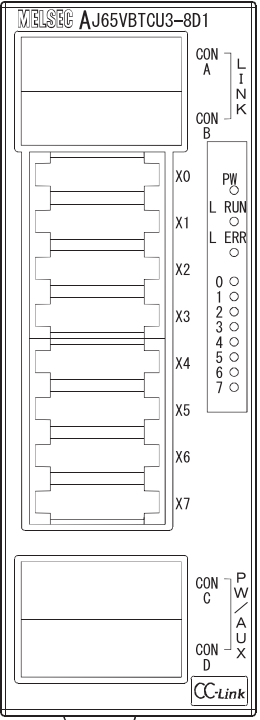
\* 1: Refer to Section 1.6.2 for details.

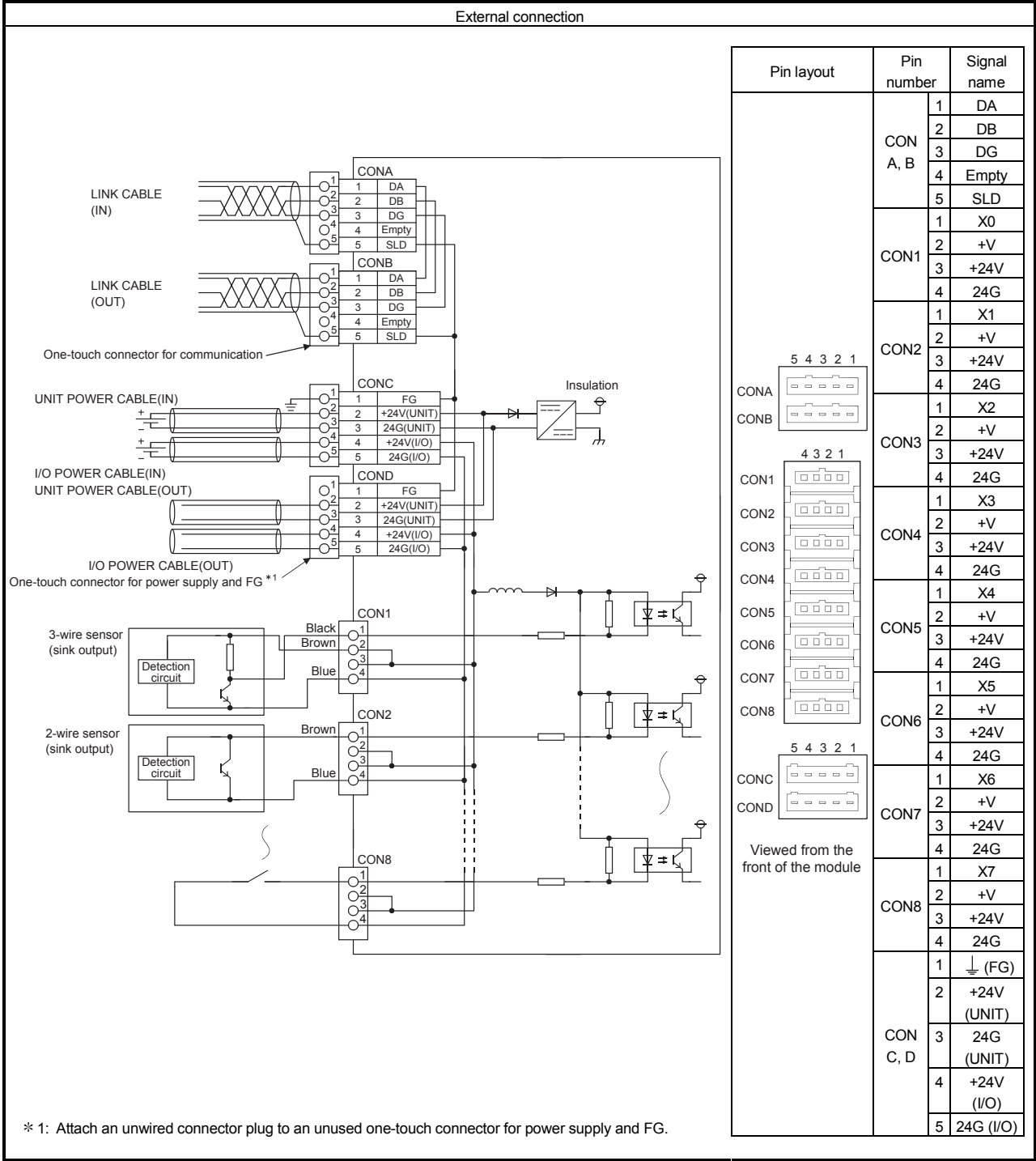


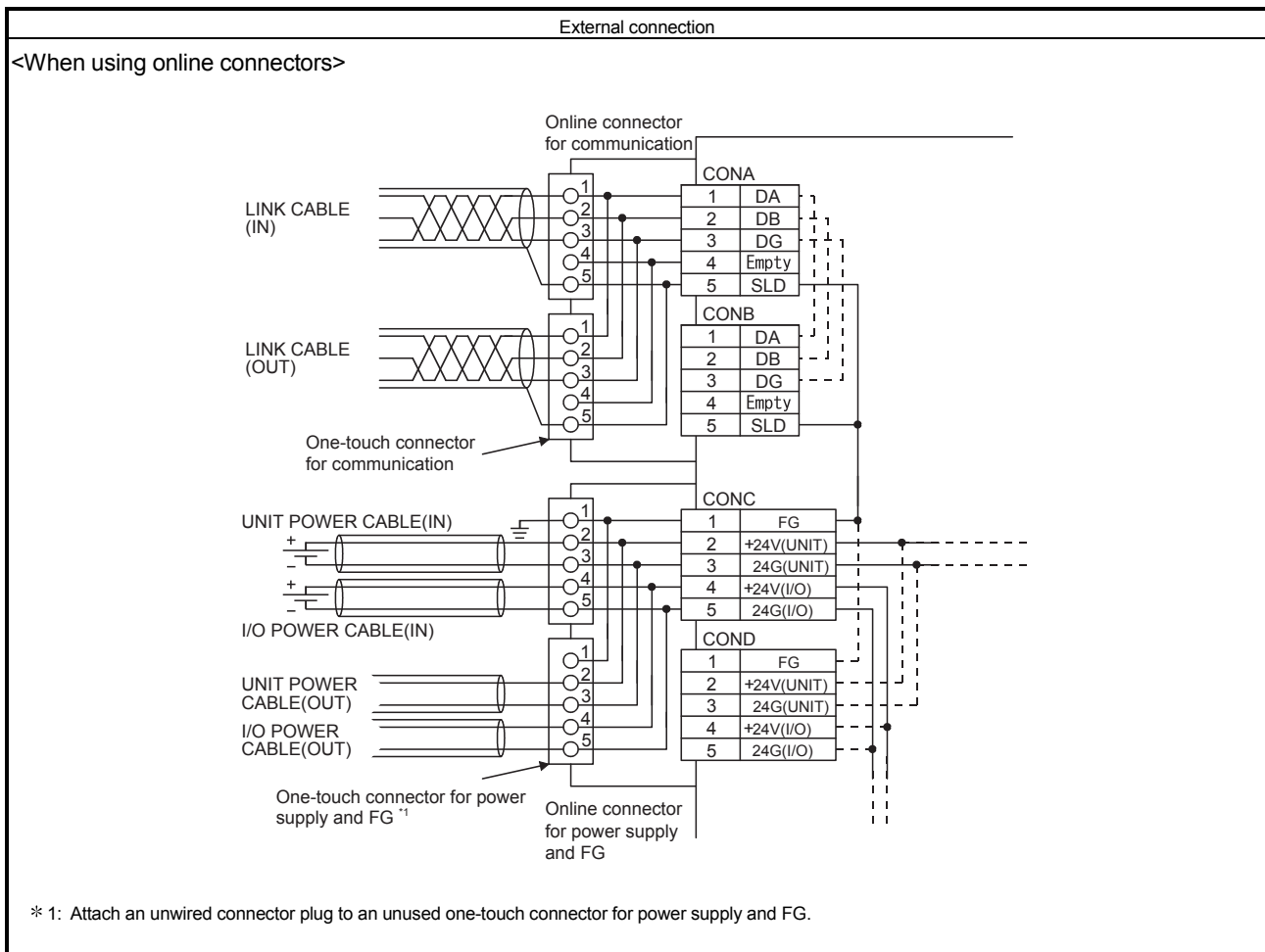


## 4.4 One-Touch Connector Type Input Module

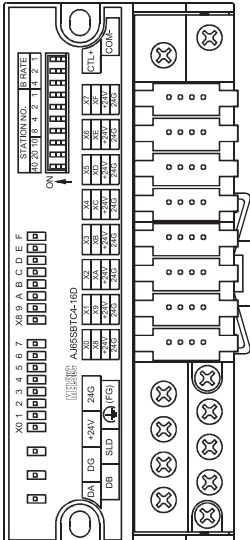
## 4.4.1 AJ65VBTCU3-8D1 24VDC input module (positive common (sink type))

| Item                                     |                                   | Type | DC input module                                                                                                                                                                                                             | Appearance                                                                           |
|------------------------------------------|-----------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                   |      | AJ65VBTCU3-8D1                                                                                                                                                                                                              |                                                                                      |
| Number of input points                   |                                   |      | 8 points                                                                                                                                                                                                                    |  |
| Isolation method                         |                                   |      | Photocoupler                                                                                                                                                                                                                |                                                                                      |
| Rated input voltage                      |                                   |      | 24VDC                                                                                                                                                                                                                       |                                                                                      |
| Rated input current                      |                                   |      | Approx. 5mA                                                                                                                                                                                                                 |                                                                                      |
| Operating voltage range                  |                                   |      | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
| Max. number of simultaneous input points |                                   |      | 100%                                                                                                                                                                                                                        |                                                                                      |
| ON voltage/ON current                    |                                   |      | 15VDC or higher/3mA or higher                                                                                                                                                                                               |                                                                                      |
| OFF voltage/OFF current                  |                                   |      | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                |                                                                                      |
| Input resistance                         |                                   |      | Approx. 4.7kΩ                                                                                                                                                                                                               |                                                                                      |
| Response time                            | OFF→ON                            |      | 0.2ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                      |
|                                          | ON→OFF                            |      | 0.2ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                      |
| Wiring method for common                 |                                   |      | 8 points/common (3-wire, one-touch connector type)                                                                                                                                                                          |                                                                                      |
| Input type                               |                                   |      | Positive common (sink type)                                                                                                                                                                                                 |                                                                                      |
| Supply current for connected device      |                                   |      | 1.0A or lower/common                                                                                                                                                                                                        |                                                                                      |
| Number of occupied stations              |                                   |      | 32-point assignment/station (8 points used)                                                                                                                                                                                 |                                                                                      |
| Module power supply                      | Voltage                           |      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
|                                          | Current                           |      | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                  |                                                                                      |
| Noise immunity                           |                                   |      | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                   |                                                                                      |
| Withstand voltage                        |                                   |      | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                            |                                                                                      |
| Insulation resistance                    |                                   |      | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                           |                                                                                      |
| Protection degree                        |                                   |      | IP1XB                                                                                                                                                                                                                       |                                                                                      |
| Weight                                   |                                   |      | 0.15kg                                                                                                                                                                                                                      |                                                                                      |
| External connection system               | Communication part                |      | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately.<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                          |                                                                                      |
|                                          | Power supply part                 |      | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |                                                                                      |
|                                          | I/O part                          |      | One-touch connector for I/O<br>4-pin IDC plug is sold separately.                                                                                                                                                           |                                                                                      |
| Applicable DIN rail                      |                                   |      | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                           |                                                                                      |
| Applicable wire size                     | Connector for communication       |      | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                     |                                                                                      |
|                                          | Connector for power supply and FG |      | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                  |                                                                                      |
|                                          | Connector for I/O                 |      | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> ]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5mm <sup>2</sup> ]       |                                                                                      |
| Accessory                                |                                   |      | User's manual                                                                                                                                                                                                               |                                                                                      |

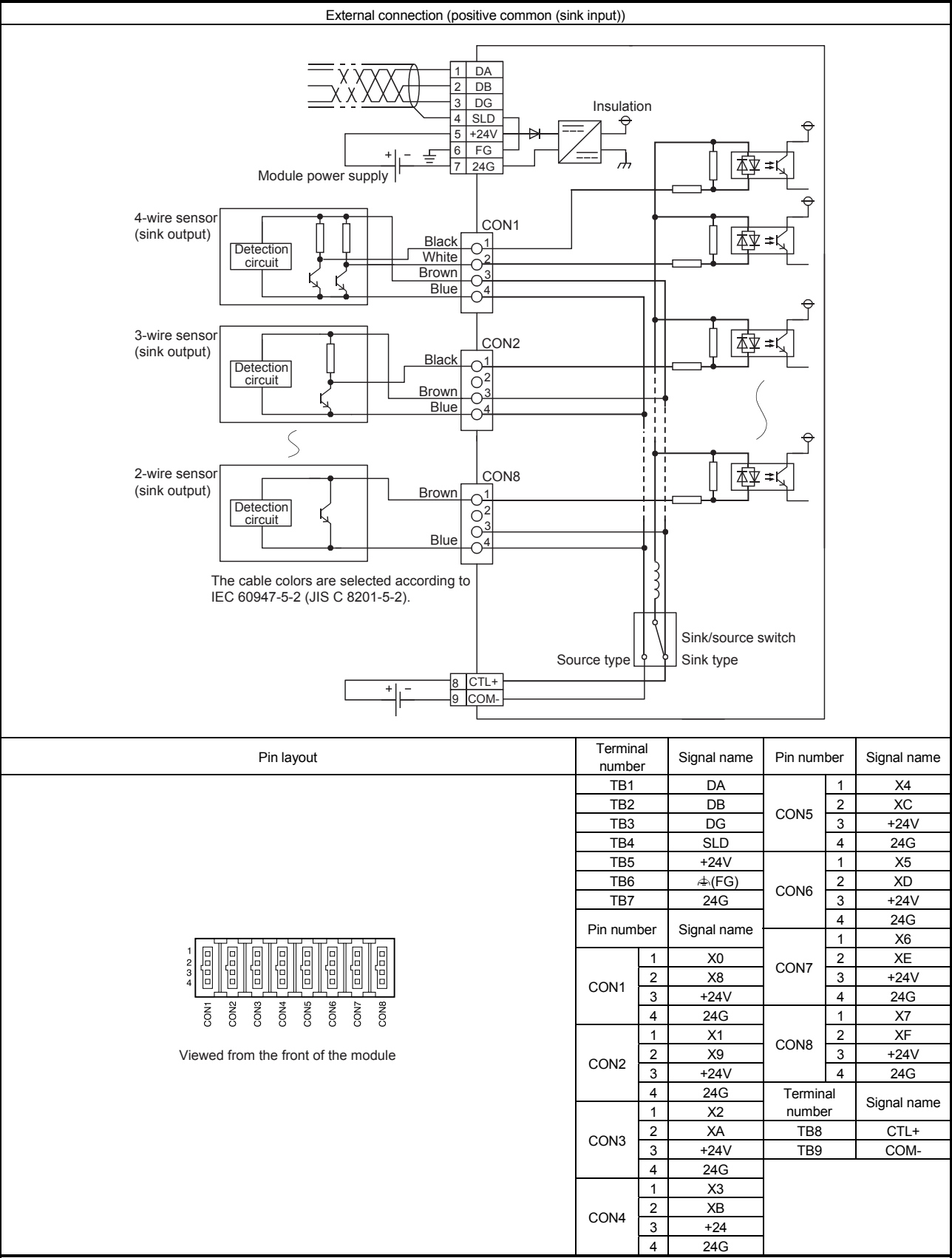


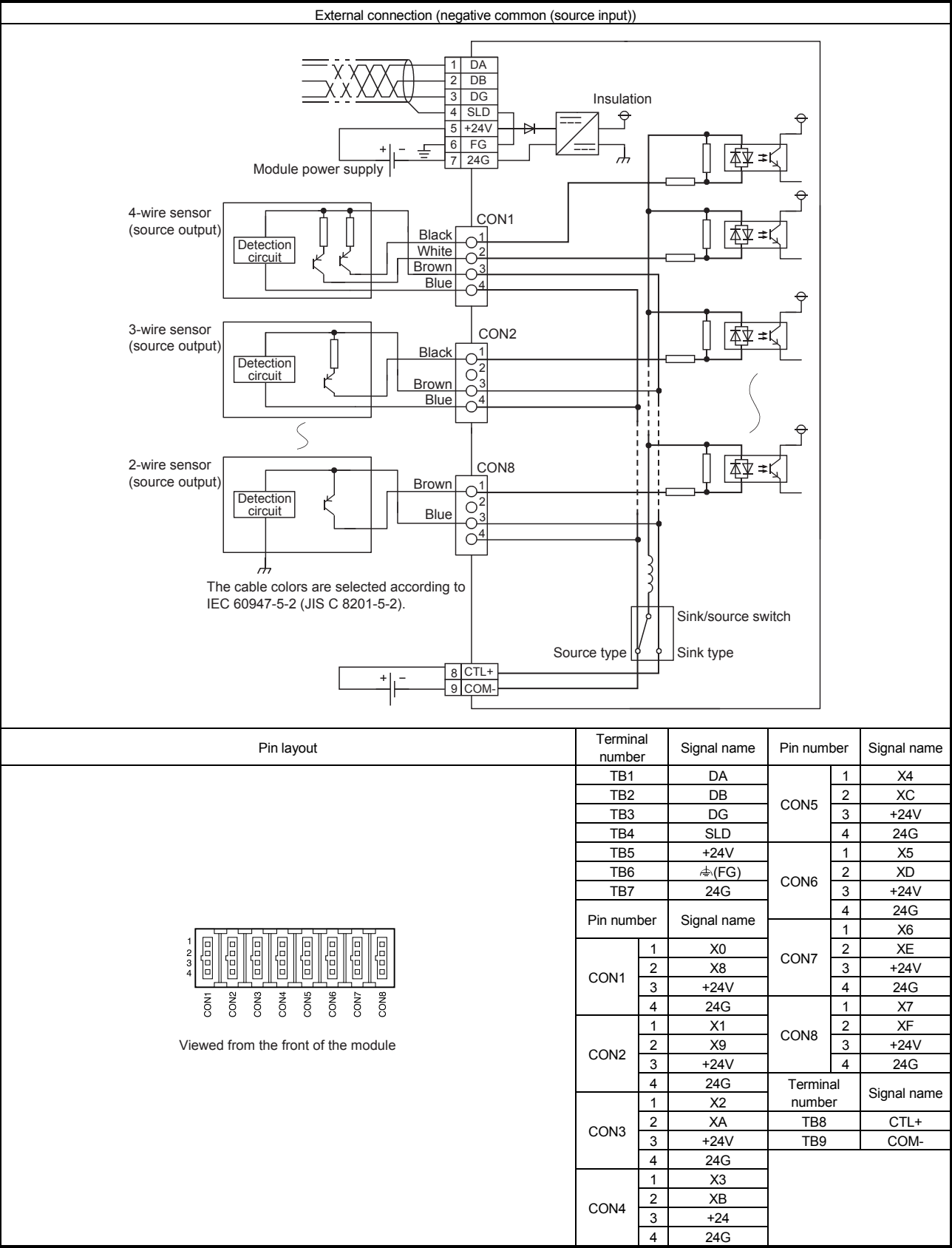


## 4.4.2 AJ65SBTC4-16D 24VDC input module (positive common (sink), negative common (source) loading)

| Item                                     |                                                 | Type                           | DC input module                                                                                                                                                                                                       |                                                                                      |
|------------------------------------------|-------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                                 |                                | AJ65SBTC4-16D                                                                                                                                                                                                         | Appearance                                                                           |
| Number of input points                   |                                                 |                                | 16 points                                                                                                                                                                                                             |  |
| Isolation method                         |                                                 |                                | Photocoupler                                                                                                                                                                                                          |                                                                                      |
| Rated input voltage                      |                                                 |                                | 24VDC                                                                                                                                                                                                                 |                                                                                      |
| Rated input current                      |                                                 |                                | Approx. 5mA                                                                                                                                                                                                           |                                                                                      |
| Operating voltage range                  |                                                 |                                | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                             |                                                                                      |
| Max. number of simultaneous input points |                                                 |                                | 100%                                                                                                                                                                                                                  |                                                                                      |
| ON voltage/ON current                    |                                                 |                                | 14VDC or higher/3.5mA or higher                                                                                                                                                                                       |                                                                                      |
| OFF voltage/OFF current                  |                                                 |                                | 6VDC or lower/1.7mA or lower                                                                                                                                                                                          |                                                                                      |
| Input resistance                         |                                                 |                                | Approx. 4.7kΩ                                                                                                                                                                                                         |                                                                                      |
| Response time                            | OFF→ON                                          |                                | 1.5ms or less (at 24VDC)                                                                                                                                                                                              |                                                                                      |
|                                          | ON→OFF                                          |                                | 1.5ms or less (at 24VDC)                                                                                                                                                                                              |                                                                                      |
| Wiring method for common                 |                                                 |                                | 16 points/common (4-wire, one-touch connector type)                                                                                                                                                                   |                                                                                      |
| Input type                               |                                                 |                                | Positive/negative common shared type (sink/source shared type)<br>(Selected using the switch.)                                                                                                                        |                                                                                      |
| Number of occupied stations              |                                                 |                                | 32-point assignment/station (16 points used)                                                                                                                                                                          |                                                                                      |
| Module power supply                      | Voltage                                         |                                | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                             |                                                                                      |
|                                          | Current                                         |                                | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                            |                                                                                      |
| Noise immunity                           |                                                 |                                | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                             |                                                                                      |
| Withstand voltage                        |                                                 |                                | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                      |                                                                                      |
| Insulation resistance                    |                                                 |                                | 10MΩ or higher between all DC external terminals and ground (500VDC<br>insulation resistance tester)                                                                                                                  |                                                                                      |
| Protection degree                        |                                                 |                                | IP2X                                                                                                                                                                                                                  |                                                                                      |
| Weight                                   |                                                 |                                | 0.15kg                                                                                                                                                                                                                |                                                                                      |
| External connection system               | Communication part,<br>module power supply part |                                | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                           |                                                                                      |
|                                          | I/O power supply part                           |                                | 2-point direct-mount terminal block<br>[I/O power supply]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                     |                                                                                      |
|                                          | I/O part                                        |                                | Dedicated one-touch connector [I/O signals]<br>4-pin IDC plug is sold separately.                                                                                                                                     |                                                                                      |
| Module mounting screw                    |                                                 |                                | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                |                                                                                      |
| Applicable DIN rail                      |                                                 |                                | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                     |                                                                                      |
| Applicable wire size                     | Communication part,<br>module power supply part | Applicable solderless terminal | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> ]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> ]                                  |                                                                                      |
|                                          | I/O power supply part                           |                                |                                                                                                                                                                                                                       |                                                                                      |
|                                          | I/O part                                        |                                | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> ]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5mm <sup>2</sup> ] |                                                                                      |
| Accessory                                |                                                 |                                | User's manual                                                                                                                                                                                                         |                                                                                      |



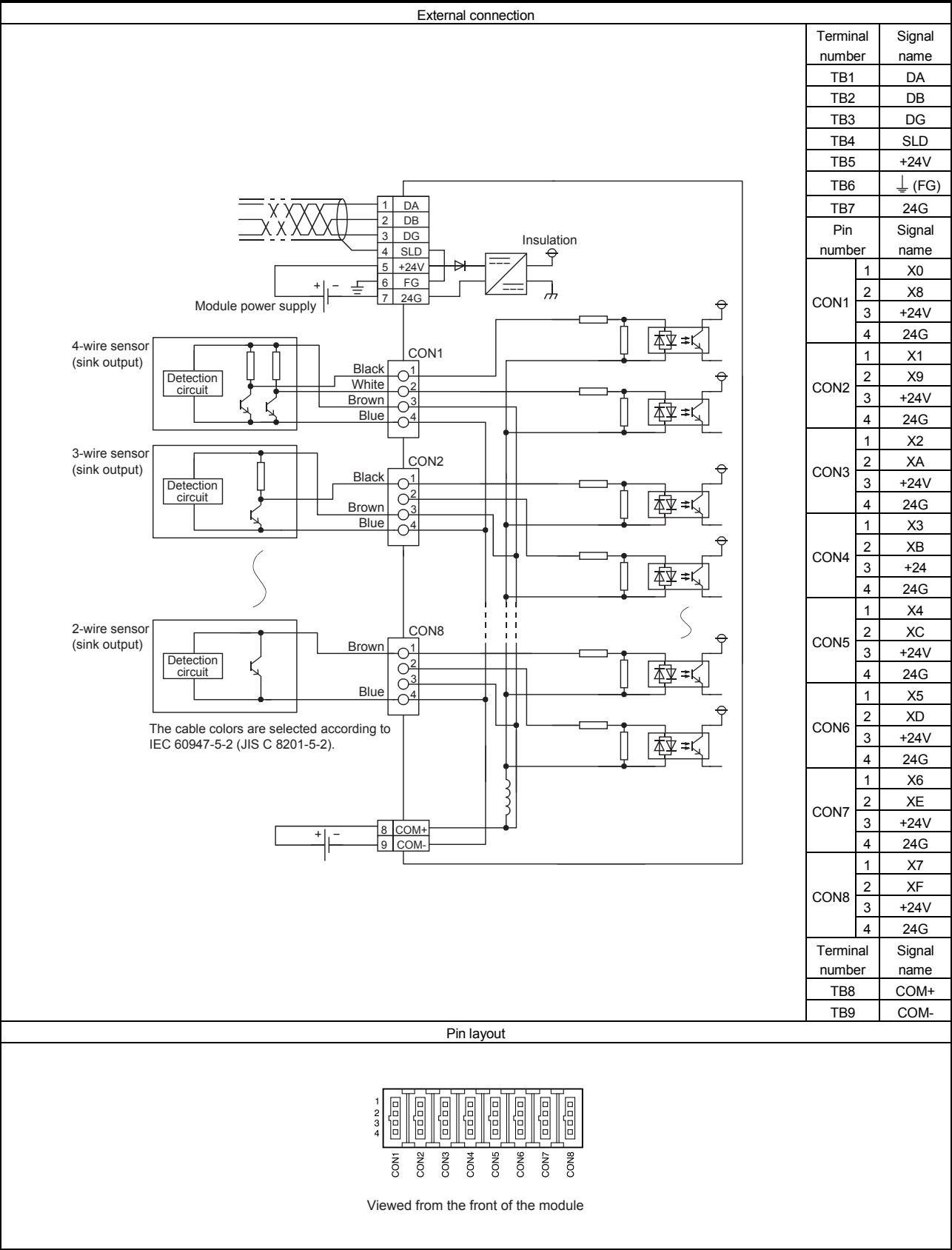




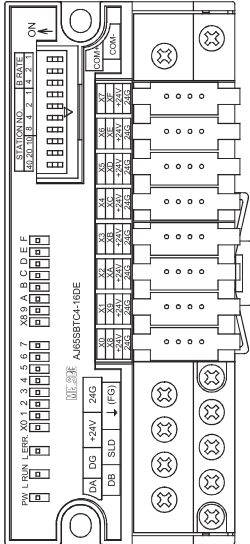
| Specification                            |                                                 | Type                                                                                                                                                                                                                                                                           | DC input module                                                                                                                                                                                                                              |  |
|------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                          |                                                 |                                                                                                                                                                                                                                                                                | AJ65SBTC4-16DN                                                                                                                                                                                                                               |  |
|                                          |                                                 |                                                                                                                                                                                                                                                                                | Appearance                                                                                                                                                                                                                                   |  |
| Number of input points                   |                                                 |                                                                                                                                                                                                                                                                                | 16 points                                                                                                                                                                                                                                    |  |
| Isolation method                         |                                                 |                                                                                                                                                                                                                                                                                | Photocoupler                                                                                                                                                                                                                                 |  |
| Rated input voltage                      |                                                 |                                                                                                                                                                                                                                                                                | 24VDC                                                                                                                                                                                                                                        |  |
| Rated input current                      |                                                 |                                                                                                                                                                                                                                                                                | Approx. 5mA                                                                                                                                                                                                                                  |  |
| Operating voltage range                  |                                                 |                                                                                                                                                                                                                                                                                | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |
| Max. number of simultaneous input points |                                                 |                                                                                                                                                                                                                                                                                | 100%                                                                                                                                                                                                                                         |  |
| ON voltage/ON current                    |                                                 |                                                                                                                                                                                                                                                                                | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                              |  |
| OFF voltage/OFF current                  |                                                 |                                                                                                                                                                                                                                                                                | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                 |  |
| Input resistance                         |                                                 |                                                                                                                                                                                                                                                                                | Approx. 4.7kΩ                                                                                                                                                                                                                                |  |
| Response time                            |                                                 | OFF→ON                                                                                                                                                                                                                                                                         | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |  |
|                                          |                                                 | ON→OFF                                                                                                                                                                                                                                                                         | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |  |
| Wiring method for common                 |                                                 |                                                                                                                                                                                                                                                                                | 16 points/common (4-wire, one-touch connector type)                                                                                                                                                                                          |  |
| Input type                               |                                                 |                                                                                                                                                                                                                                                                                | Positive common (sink type)                                                                                                                                                                                                                  |  |
| Supply current for connected device      |                                                 |                                                                                                                                                                                                                                                                                | 1.0A or lower/common                                                                                                                                                                                                                         |  |
| Number of occupied stations              |                                                 |                                                                                                                                                                                                                                                                                | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |  |
| Module power supply                      |                                                 | Voltage                                                                                                                                                                                                                                                                        | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |
|                                          |                                                 | Current                                                                                                                                                                                                                                                                        | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |  |
| Noise immunity                           |                                                 |                                                                                                                                                                                                                                                                                | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                    |  |
| Withstand voltage                        |                                                 |                                                                                                                                                                                                                                                                                | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |  |
| Insulation resistance                    |                                                 |                                                                                                                                                                                                                                                                                | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |  |
| Protection degree                        |                                                 |                                                                                                                                                                                                                                                                                | IP2X                                                                                                                                                                                                                                         |  |
| Weight                                   |                                                 |                                                                                                                                                                                                                                                                                | 0.15kg                                                                                                                                                                                                                                       |  |
| External connection system               |                                                 | Communication part,<br>module power supply part                                                                                                                                                                                                                                | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range:0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                   |  |
|                                          |                                                 | I/O power supply part                                                                                                                                                                                                                                                          | 2-point direct-mount terminal block<br>[I/O power supply]<br>M3×5.2 screw (tightening torque range:0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                             |  |
|                                          |                                                 | I/O part                                                                                                                                                                                                                                                                       | Dedicated one-touch connector [I/O signals]<br>4-pin IDC plug is sold separately.                                                                                                                                                            |  |
| Module mounting screw                    |                                                 |                                                                                                                                                                                                                                                                                | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                       |  |
| Applicable DIN rail                      |                                                 |                                                                                                                                                                                                                                                                                | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |  |
| Applicable wire size                     | Communication part,<br>module power supply part | Applicable solderless terminal                                                                                                                                                                                                                                                 | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |  |
|                                          | I/O power supply part                           |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                              |  |
|                                          | I/O part                                        | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG) stranded wire]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5 mm <sup>2</sup> (22 to 20 AWG) stranded wire] |                                                                                                                                                                                                                                              |  |
| Wire                                     | Material                                        | Copper                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                              |  |
|                                          | Temperature rating                              | 75°C or more                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                              |  |
| Accessory                                |                                                 |                                                                                                                                                                                                                                                                                | User's manual                                                                                                                                                                                                                                |  |

The diagram illustrates the physical layout of the AJ65SBTC4-16DN module. It features a DIN rail on the left with terminals for power supply (L, N, PE, 0V, 24V, DG, SLD, I/F) and signal (DA, DB, SLD, I/F). On the right, there are two rows of 16-point terminal blocks for input points, labeled 1 through 16. The module is shown mounted on a DIN rail, with a label 'AJ65SBTC4-16DN' and 'DC INPUT' indicating its function.

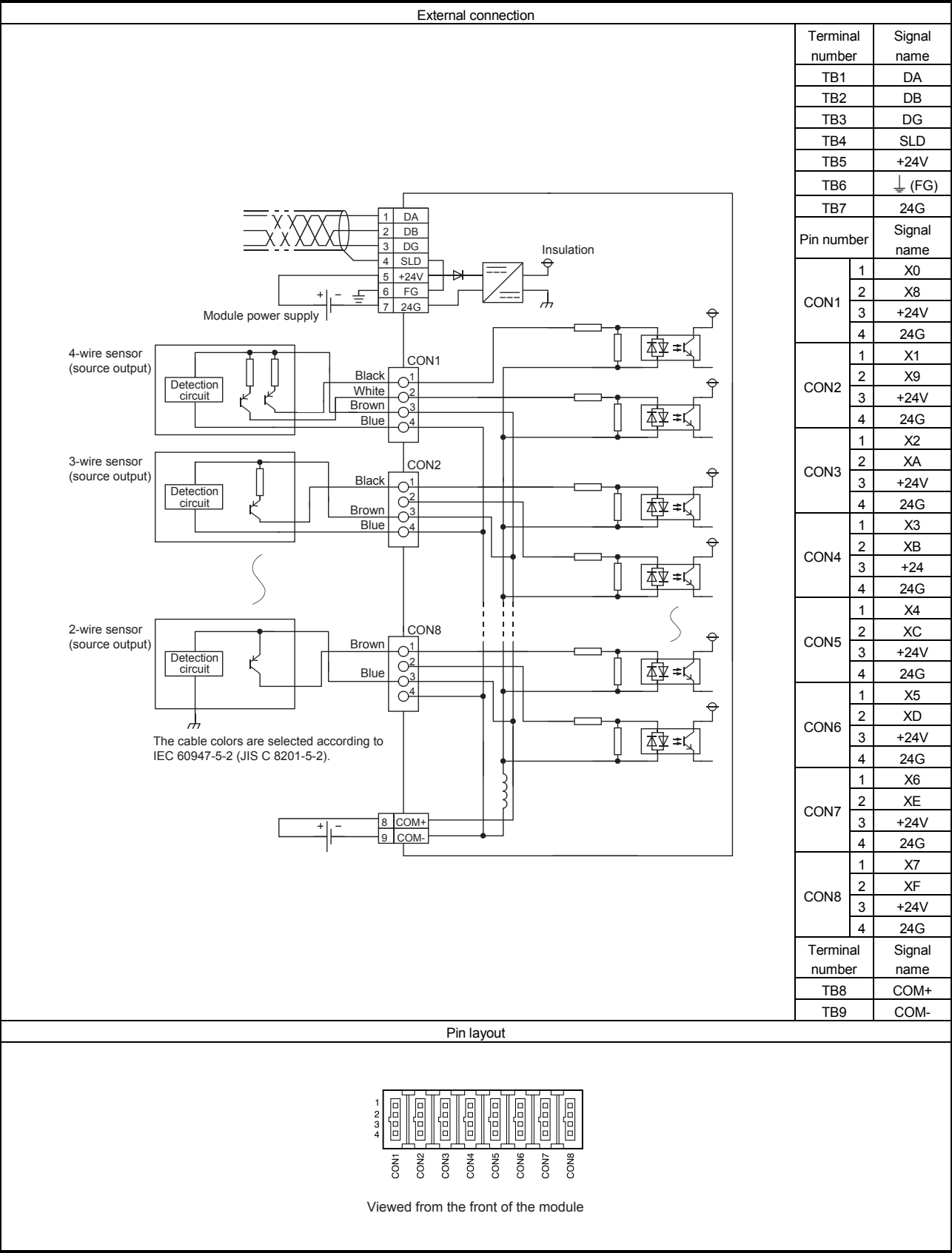
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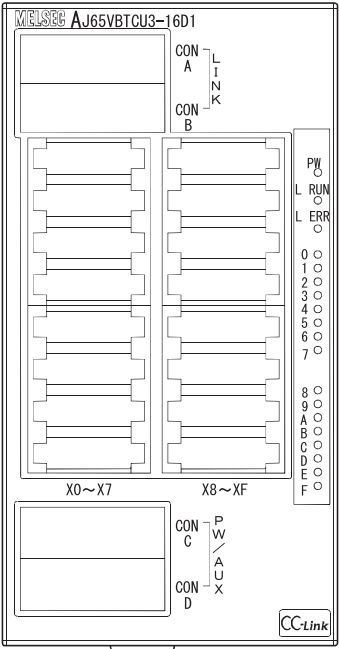
## 4.4.4 AJ65SBTC4-16DE 24VDC input module (negative common (source type))

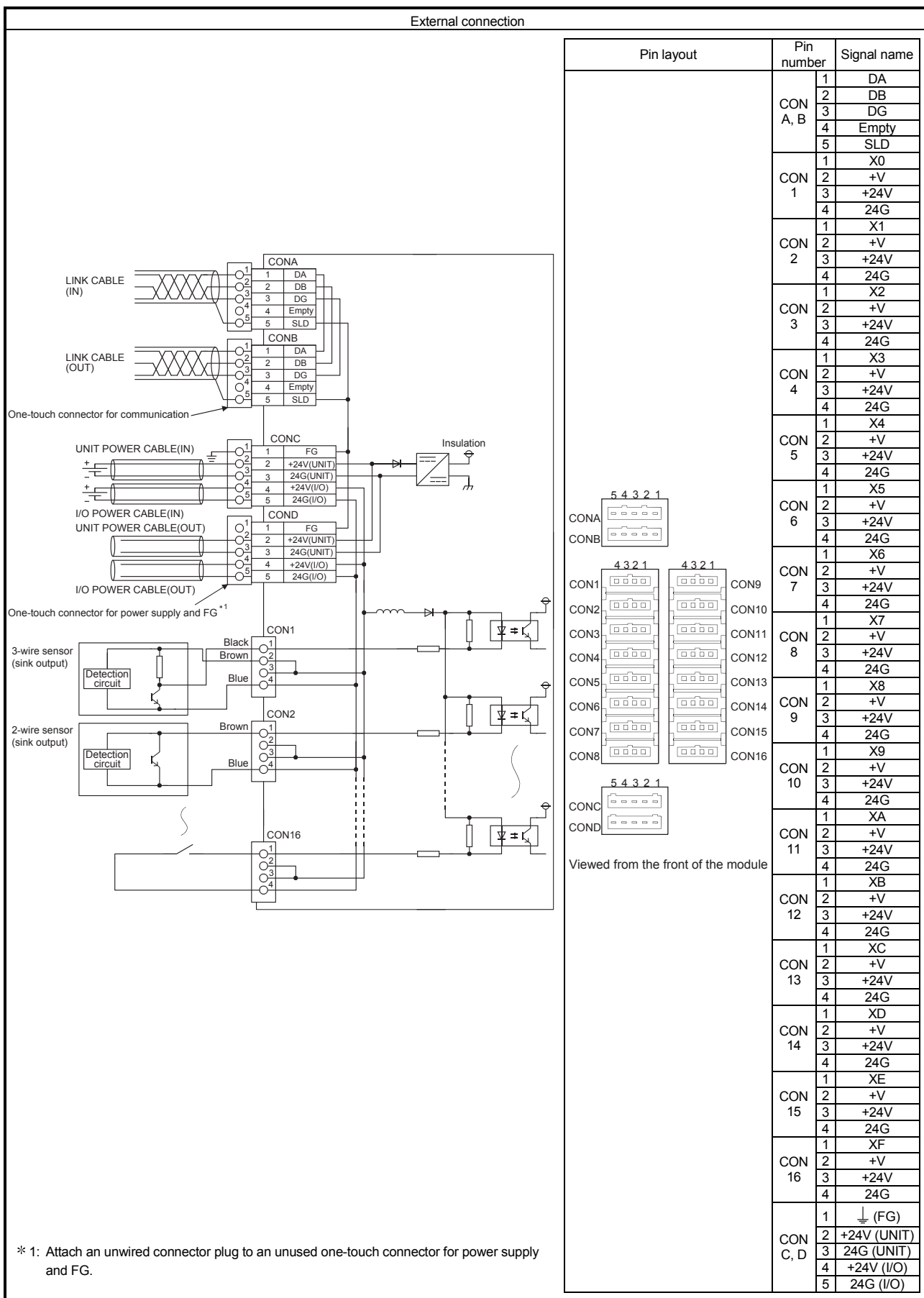
| Specification                            |                                              | Type                           | DC input module                                                                                                                                                                                                                                                                | Appearance                                                                           |
|------------------------------------------|----------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                              |                                | AJ65SBTC4-16DE                                                                                                                                                                                                                                                                 |                                                                                      |
| Number of input points                   |                                              |                                | 16 points                                                                                                                                                                                                                                                                      |  |
| Isolation method                         |                                              |                                | Photocoupler                                                                                                                                                                                                                                                                   |                                                                                      |
| Rated input voltage                      |                                              |                                | 24VDC                                                                                                                                                                                                                                                                          |                                                                                      |
| Rated input current                      |                                              |                                | Approx. 5mA                                                                                                                                                                                                                                                                    |                                                                                      |
| Operating voltage range                  |                                              |                                | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                      |                                                                                      |
| Max. number of simultaneous input points |                                              |                                | 100%                                                                                                                                                                                                                                                                           |                                                                                      |
| ON voltage/ON current                    |                                              |                                | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                                                                |                                                                                      |
| OFF voltage/OFF current                  |                                              |                                | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                                                   |                                                                                      |
| Input resistance                         |                                              |                                | Approx. 4.7kΩ                                                                                                                                                                                                                                                                  |                                                                                      |
| Response time                            | OFF→ON                                       |                                | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                       |                                                                                      |
|                                          | ON→OFF                                       |                                | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                       |                                                                                      |
| Wiring method for common                 |                                              |                                | 16 points/common (4-wire, one-touch connector type)                                                                                                                                                                                                                            |                                                                                      |
| Input type                               |                                              |                                | Negative common (source type)                                                                                                                                                                                                                                                  |                                                                                      |
| Supply current for connected device      |                                              |                                | 1.0A or lower/common                                                                                                                                                                                                                                                           |                                                                                      |
| Number of occupied stations              |                                              |                                | 32-point assignment/station (16 points used)                                                                                                                                                                                                                                   |                                                                                      |
| Module power supply                      | Voltage                                      |                                | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                      |                                                                                      |
|                                          | Current                                      |                                | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                     |                                                                                      |
| Noise immunity                           |                                              |                                | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                         |                                                                                      |
| Withstand voltage                        |                                              |                                | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                               |                                                                                      |
| Insulation resistance                    |                                              |                                | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                              |                                                                                      |
| Protection degree                        |                                              |                                | IP2X                                                                                                                                                                                                                                                                           |                                                                                      |
| Weight                                   |                                              |                                | 0.15kg                                                                                                                                                                                                                                                                         |                                                                                      |
| External connection system               | Communication part, module power supply part |                                | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                                    |                                                                                      |
|                                          | I/O power supply part                        |                                | 2-point direct-mount terminal block<br>[I/O power supply]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                                                              |                                                                                      |
|                                          | I/O part                                     |                                | Dedicated one-touch connector [I/O signals]<br>4-pin IDC plug is sold separately.                                                                                                                                                                                              |                                                                                      |
| Module mounting screw                    |                                              |                                | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                            |                                                                                      |
| Applicable DIN rail                      |                                              |                                | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                              |                                                                                      |
| Applicable wire size                     | Communication part, module power supply part | Applicable solderless terminal | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]                                   |                                                                                      |
|                                          | I/O power supply part                        |                                |                                                                                                                                                                                                                                                                                |                                                                                      |
|                                          | I/O part                                     |                                | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG) stranded wire]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5 mm <sup>2</sup> (22 to 20 AWG) stranded wire] |                                                                                      |
| Wire                                     | Material                                     |                                | Copper                                                                                                                                                                                                                                                                         |                                                                                      |
|                                          | Temperature rating                           |                                | 75°C or more                                                                                                                                                                                                                                                                   |                                                                                      |
| Accessory                                |                                              |                                | User's manual                                                                                                                                                                                                                                                                  |                                                                                      |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

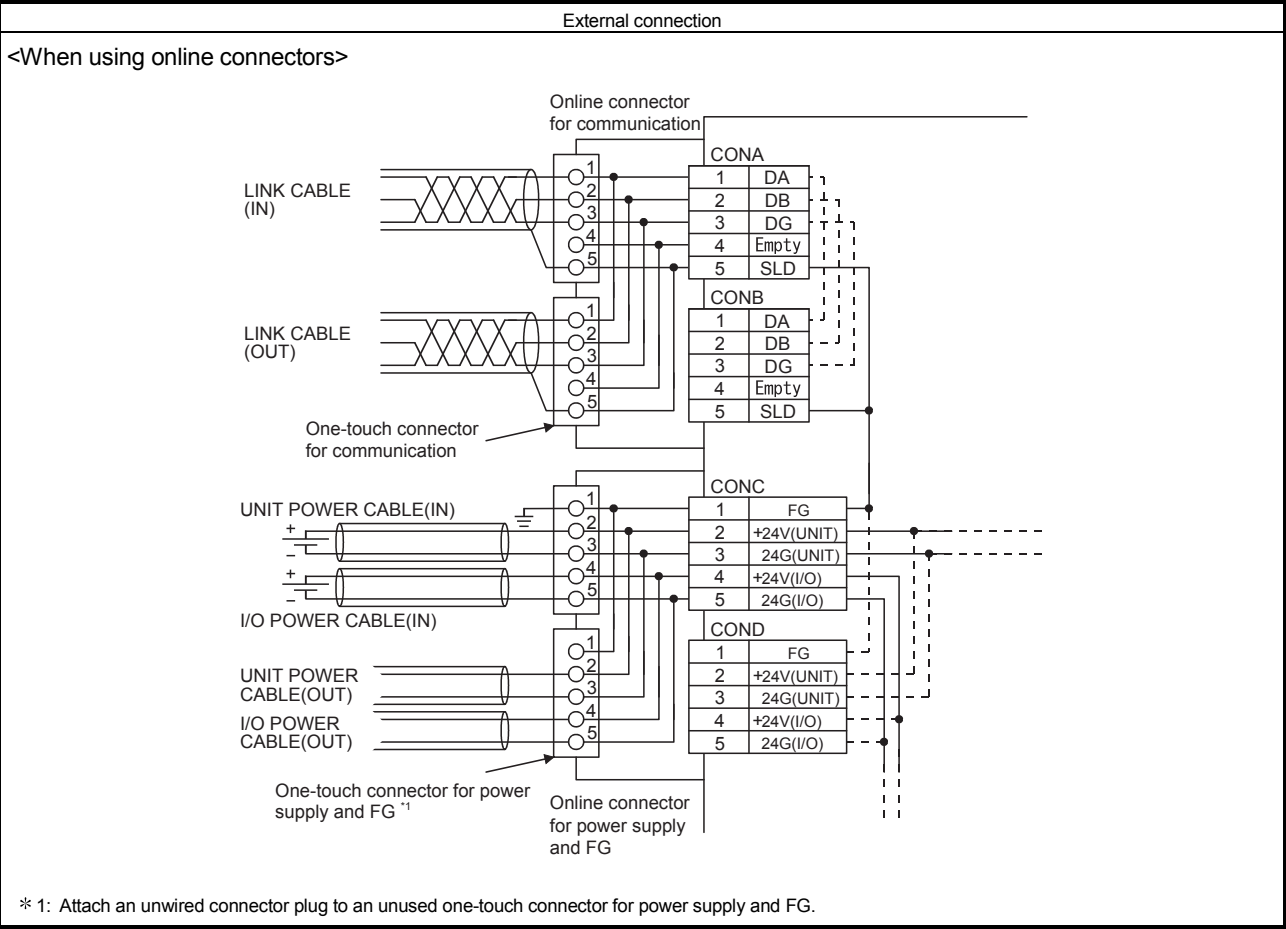


## 4.4.5 AJ65VBTCU3-16D1 24VDC input module (positive common (sink type))

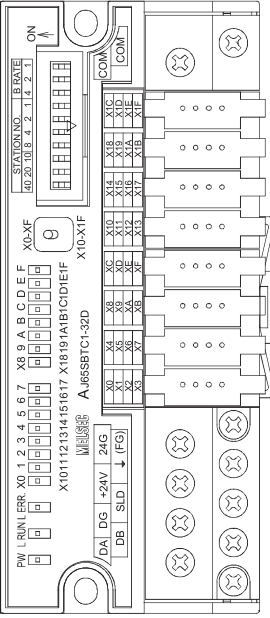
| Type                                     |                                   | DC input module                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Item                                     |                                   | AJ65VBTCU3-16D1                                                                                                                                                                                                             | Appearance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Number of input points                   |                                   | 16 points                                                                                                                                                                                                                   |  <p>The diagram shows the physical layout of the AJ65VBTCU3-16D1 module. It features two main terminal blocks: one for communication (CON A, CON B) and one for power supply and I/O (CON C, CON D). The module is labeled 'AJ65VBTCU3-16D1' and 'MELSEC'. A 'CC-Link' logo is also present. The terminal blocks are labeled with their respective functions: CON A (LINK), CON B (LINK), CON C (P.W./AUX), and CON D (P.W./AUX). The module is shown in a perspective view, highlighting its compact design and the arrangement of its connectors.</p> |
| Isolation method                         |                                   | Photocoupler                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Rated input voltage                      |                                   | 24VDC                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Rated input current                      |                                   | Approx. 5mA                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Operating voltage range                  |                                   | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Max. number of simultaneous input points |                                   | 100%                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| ON voltage/OFF current                   |                                   | 15VDC or higher/3mA or higher                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| OFF voltage/OFF current                  |                                   | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Input resistance                         |                                   | Approx. 4.7kΩ                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Response time                            | OFF→ON                            | 0.2ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                          | ON→OFF                            | 0.2ms or less (at 24VDC)                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Wiring method for common                 |                                   | 16 points/common (3-wire, one-touch connector type)                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Input type                               |                                   | Positive common (sink type)                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Supply current for connected device      |                                   | 1.0A or lower/common                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Number of occupied stations              |                                   | 32-point assignment/station (16 points used)                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Module power supply                      | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                          | Current                           | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Noise immunity                           |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Withstand voltage                        |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Insulation resistance                    |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Protection degree                        |                                   | IP1XB                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Weight                                   |                                   | 0.19kg                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| External connection system               | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately.<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                          | Power supply part                 | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                          | I/O part                          | One-touch connector for I/O<br>4-pin IDC plug is sold separately.                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Applicable DIN rail                      |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Applicable wire size                     | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                          | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                          | Connector for I/O                 | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> ]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5mm <sup>2</sup> ]       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Accessory                                |                                   | User's manual                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |



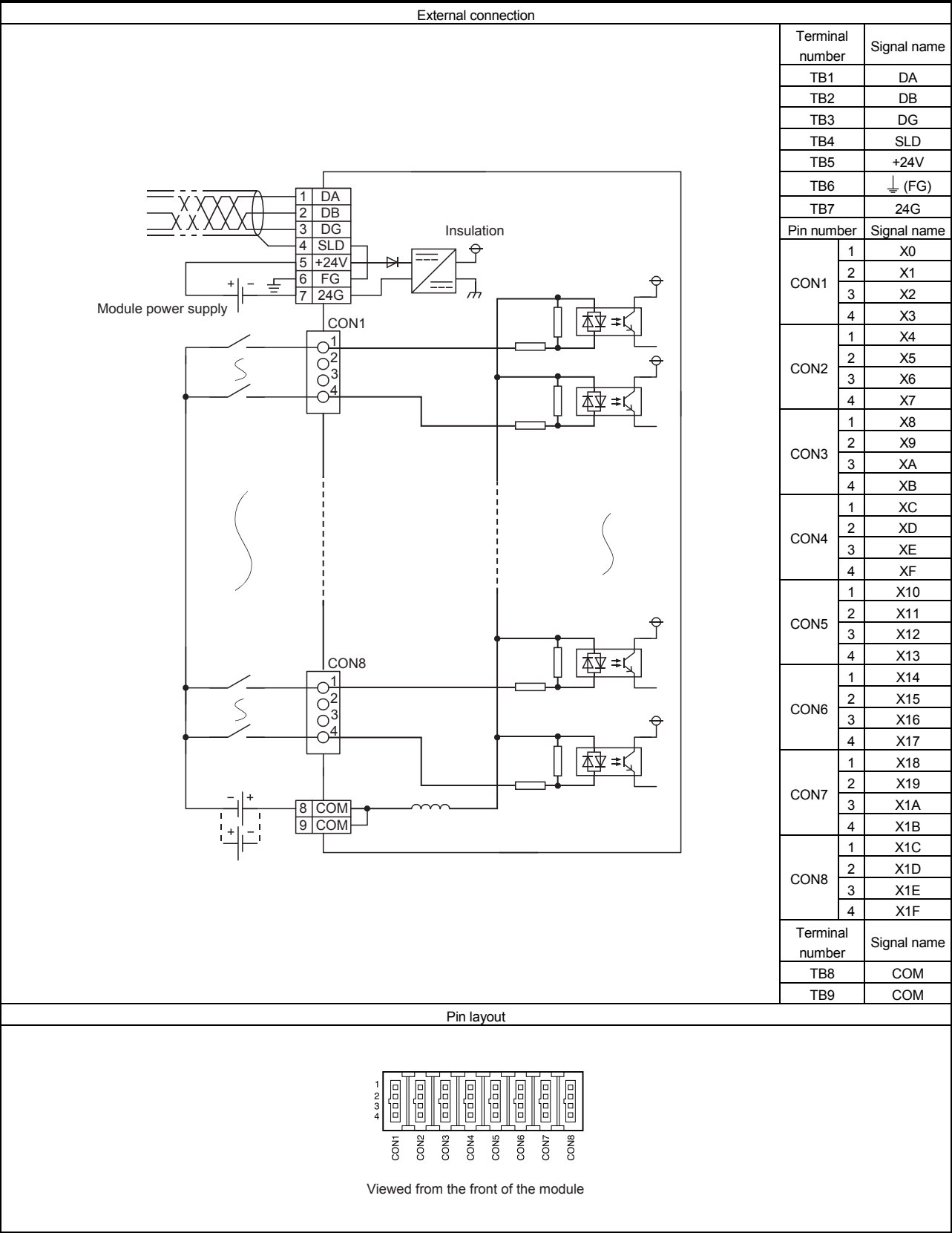




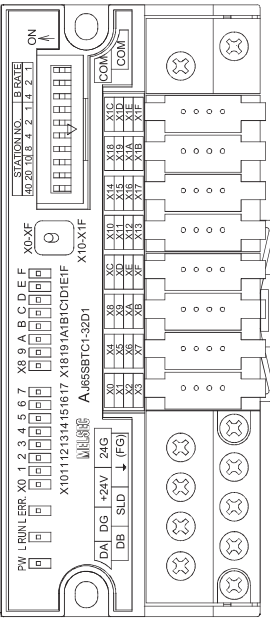
## 4.4.6 AJ65SBTC1-32D 24VDC input module (positive common (sink), negative common (source) loading)

| Item                                     | Type                                         | DC input module                                                                                                                                                                             |                                                                                      |
|------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                              | AJ65SBTC1-32D                                                                                                                                                                               | Appearance                                                                           |
| Number of input points                   |                                              | 32 points                                                                                                                                                                                   |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                |                                                                                      |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                       |                                                                                      |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                                                                                 |                                                                                      |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                   |                                                                                      |
| Max. number of simultaneous input points |                                              | 80%                                                                                                                                                                                         |                                                                                      |
| ON voltage/ON current                    |                                              | 14VDC or higher/3.5mA or higher                                                                                                                                                             |                                                                                      |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/1.7mA or lower                                                                                                                                                                |                                                                                      |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                                                                               |                                                                                      |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                    |                                                                                      |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                    |                                                                                      |
| Wiring method for common                 |                                              | 32 points/common (2 points) (1-wire, one-touch connector type)                                                                                                                              |                                                                                      |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                              |                                                                                      |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                                                                                |                                                                                      |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                   |                                                                                      |
|                                          | Current                                      | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                  |                                                                                      |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                      |                                                                                      |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                            |                                                                                      |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                           |                                                                                      |
| Weight                                   |                                              | 0.16kg                                                                                                                                                                                      |                                                                                      |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less |                                                                                      |
|                                          | I/O power supply part                        | 2-point direct-mount terminal block<br>[I/O power supply]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                           |                                                                                      |
|                                          | I/O part                                     | Dedicated one-touch connector [I/O signals]<br>4-pin IDC plug is sold separately.                                                                                                           |                                                                                      |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08 N·m)<br>Mountable with a DIN rail in 6 orientations                                                     |                                                                                      |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                           |                                                                                      |
| Applicable wire size                     | Communication part, module power supply part | Applicable solderless terminal                                                                                                                                                              |                                                                                      |
|                                          | I/O power supply part                        |                                                                                                                                                                                             |                                                                                      |
|                                          | I/O part                                     |                                                                                                                                                                                             |                                                                                      |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                      |                                                                                      |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                |                                                                                      |
| Accessory                                |                                              | User's manual                                                                                                                                                                               |                                                                                      |

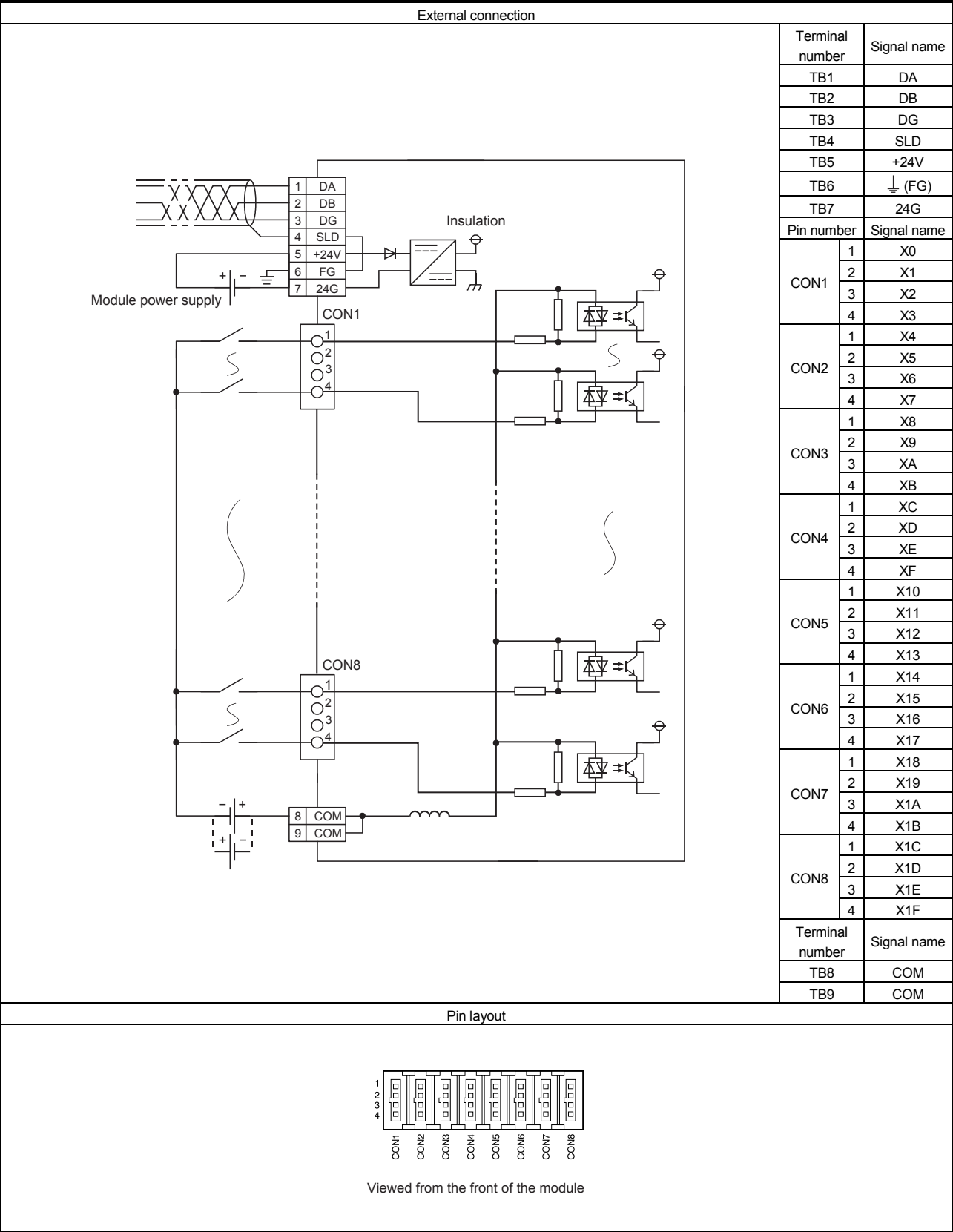
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 4.4.7 AJ65SBTC1-32D1 24VDC input module (positive common (sink), negative common (source) loading)

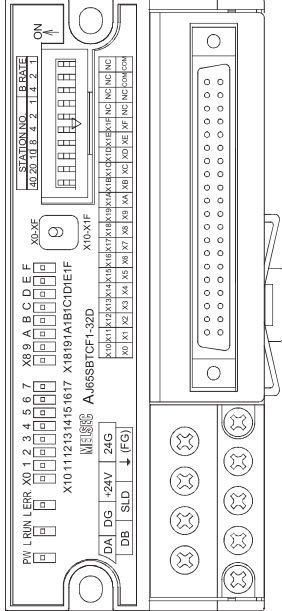
| Item                                     |                                              | Type                           | DC input module                                                                                                                                                                                                                                                                                      | Appearance                                                                           |
|------------------------------------------|----------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                              |                                | AJ65SBTC1-32D1                                                                                                                                                                                                                                                                                       |                                                                                      |
| Number of input points                   |                                              |                                | 32 points                                                                                                                                                                                                                                                                                            |  |
| Isolation method                         |                                              |                                | Photocoupler                                                                                                                                                                                                                                                                                         |                                                                                      |
| Rated input voltage                      |                                              |                                | 24VDC                                                                                                                                                                                                                                                                                                |                                                                                      |
| Rated input current                      |                                              |                                | Approx. 5mA                                                                                                                                                                                                                                                                                          |                                                                                      |
| Operating voltage range                  |                                              |                                | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
| Max. number of simultaneous input points |                                              |                                | 100%                                                                                                                                                                                                                                                                                                 |                                                                                      |
| ON voltage/ON current                    |                                              |                                | 15VDC or higher/3mA or higher                                                                                                                                                                                                                                                                        |                                                                                      |
| OFF voltage/OFF current                  |                                              |                                | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                                                                                         |                                                                                      |
| Input resistance                         |                                              |                                | Approx. 4.7kΩ                                                                                                                                                                                                                                                                                        |                                                                                      |
| Response time                            | OFF→ON                                       |                                | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                                                                             |                                                                                      |
|                                          | ON→OFF                                       |                                | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                                                                             |                                                                                      |
| Wiring method for common                 |                                              |                                | 32 points/common (2 points) (1-wire, one-touch connector type)                                                                                                                                                                                                                                       |                                                                                      |
| Input type                               |                                              |                                | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                                                                       |                                                                                      |
| Number of occupied stations              |                                              |                                | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                                         |                                                                                      |
| Module power supply                      | Voltage                                      |                                | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                          | Current                                      |                                | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                           |                                                                                      |
| Noise immunity                           |                                              |                                | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                               |                                                                                      |
| Withstand voltage                        |                                              |                                | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                     |                                                                                      |
| Insulation resistance                    |                                              |                                | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                    |                                                                                      |
| Protection degree                        |                                              |                                | IP2X                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Weight                                   |                                              |                                | 0.16kg                                                                                                                                                                                                                                                                                               |                                                                                      |
| External connection system               | Communication part, module power supply part |                                | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                          |                                                                                      |
|                                          | I/O power supply part                        |                                | 2-point direct-mount terminal block<br>[I/O power supply]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                                    |                                                                                      |
|                                          | I/O part                                     |                                | Dedicated one-touch connector [I/O signals]<br>4-pin IDC plug is sold separately.                                                                                                                                                                                                                    |                                                                                      |
| Module mounting screw                    |                                              |                                | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                               |                                                                                      |
| Applicable DIN rail                      |                                              |                                | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                    |                                                                                      |
| Applicable wire size                     | Communication part, module power supply part | Applicable solderless terminal | <ul style="list-style-type: none"> <li>• RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
|                                          | I/O power supply part                        |                                |                                                                                                                                                                                                                                                                                                      |                                                                                      |
|                                          | I/O part                                     |                                | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG) stranded wire]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5 mm <sup>2</sup> (22 to 20 AWG) stranded wire]                       |                                                                                      |
| Wire                                     | Material                                     |                                | Copper                                                                                                                                                                                                                                                                                               |                                                                                      |
|                                          | Temperature rating                           |                                | 75°C or more                                                                                                                                                                                                                                                                                         |                                                                                      |
| Accessory                                |                                              |                                | User's manual                                                                                                                                                                                                                                                                                        |                                                                                      |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 4.5 FCN Connector Type Input Module

## 4.5.1 AJ65SBTCF1-32D 24VDC input module (positive common (sink), negative common (source) loading)

| Item                                                  |                                              | Type                                        | DC input module                                                                                                                                                                                                                                                                                             | Appearance                                                                           |
|-------------------------------------------------------|----------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                                       |                                              |                                             | AJ65SBTCF1-32D                                                                                                                                                                                                                                                                                              |                                                                                      |
| Number of input points                                |                                              |                                             | 32 points                                                                                                                                                                                                                                                                                                   |  |
| Isolation method                                      |                                              |                                             | Photocoupler                                                                                                                                                                                                                                                                                                |                                                                                      |
| Rated input voltage                                   |                                              |                                             | 24VDC                                                                                                                                                                                                                                                                                                       |                                                                                      |
| Rated input current                                   |                                              |                                             | Approx. 5mA                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Operating voltage range                               |                                              |                                             | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                                   |                                                                                      |
| Max. number of simultaneous input points              |                                              |                                             | 100%                                                                                                                                                                                                                                                                                                        |                                                                                      |
| ON voltage/ON current                                 |                                              |                                             | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                                                                                             |                                                                                      |
| OFF voltage/OFF current                               |                                              |                                             | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                                                                                |                                                                                      |
| Input resistance                                      |                                              |                                             | Approx. 4.7kΩ                                                                                                                                                                                                                                                                                               |                                                                                      |
| Response time                                         | OFF→ON                                       |                                             | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                                    |                                                                                      |
|                                                       | ON→OFF                                       |                                             | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                                    |                                                                                      |
| Wiring method for common                              |                                              |                                             | 32 points/common (1-wire, FCN connector type)                                                                                                                                                                                                                                                               |                                                                                      |
| Input type                                            |                                              |                                             | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                                                                              |                                                                                      |
| Number of occupied stations                           |                                              |                                             | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                                                |                                                                                      |
| Module power supply                                   | Voltage                                      |                                             | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                                   |                                                                                      |
|                                                       | Current                                      |                                             | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                                  |                                                                                      |
| Noise immunity                                        |                                              |                                             | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                                      |                                                                                      |
| Withstand voltage                                     |                                              |                                             | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                            |                                                                                      |
| Insulation resistance                                 |                                              |                                             | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                           |                                                                                      |
| Protection degree                                     |                                              |                                             | IP2X                                                                                                                                                                                                                                                                                                        |                                                                                      |
| Weight                                                |                                              |                                             | 0.15kg                                                                                                                                                                                                                                                                                                      |                                                                                      |
| External connection system                            | Communication part, module power supply part |                                             | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                 |                                                                                      |
|                                                       | I/O power supply part, I/O part              |                                             | 40-pin connector [I/O power supply, I/O signal]<br>(A6CON1, A6CON2, A6CON3, A6CON4)                                                                                                                                                                                                                         |                                                                                      |
| Module mounting screw                                 |                                              |                                             | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                                      |                                                                                      |
| Applicable DIN rail                                   |                                              |                                             | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                           |                                                                                      |
| Applicable wire size                                  | Communication part, module power supply part | Applicable solderless terminal <sup>1</sup> | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)</li> <li>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N</li> <li>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul>  |                                                                                      |
|                                                       | I/O power supply part, I/O part              |                                             | <ul style="list-style-type: none"> <li>0.08 to 0.3mm<sup>2</sup> (28 to 22 AWG) stranded wire (A6CON1 and A6CON4)<sup>2</sup></li> <li>0.08 to 0.2mm<sup>2</sup> (28 to 24 AWG) stranded wire (A6CON2)</li> <li>0.08mm<sup>2</sup> (28 AWG) stranded wire, φ0.25mm (30 AWG) single wire (A6CON3)</li> </ul> |                                                                                      |
| Wire                                                  | Material                                     |                                             | Copper                                                                                                                                                                                                                                                                                                      |                                                                                      |
|                                                       | Temperature rating                           |                                             | 75°C or more                                                                                                                                                                                                                                                                                                |                                                                                      |
| Applicable connector/terminal block conversion module |                                              |                                             | A6TBXY36, A6TBXY54, A6TBX70                                                                                                                                                                                                                                                                                 |                                                                                      |
| Accessory                                             |                                              |                                             | User's manual                                                                                                                                                                                                                                                                                               |                                                                                      |

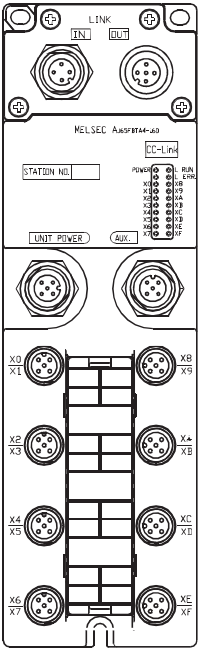
<sup>1</sup> For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

<sup>2</sup> Use cables with outside diameter of 1.3mm or shorter to connect 40 cables to the connector. In addition, consider the amount of current to be used and select appropriate cables.

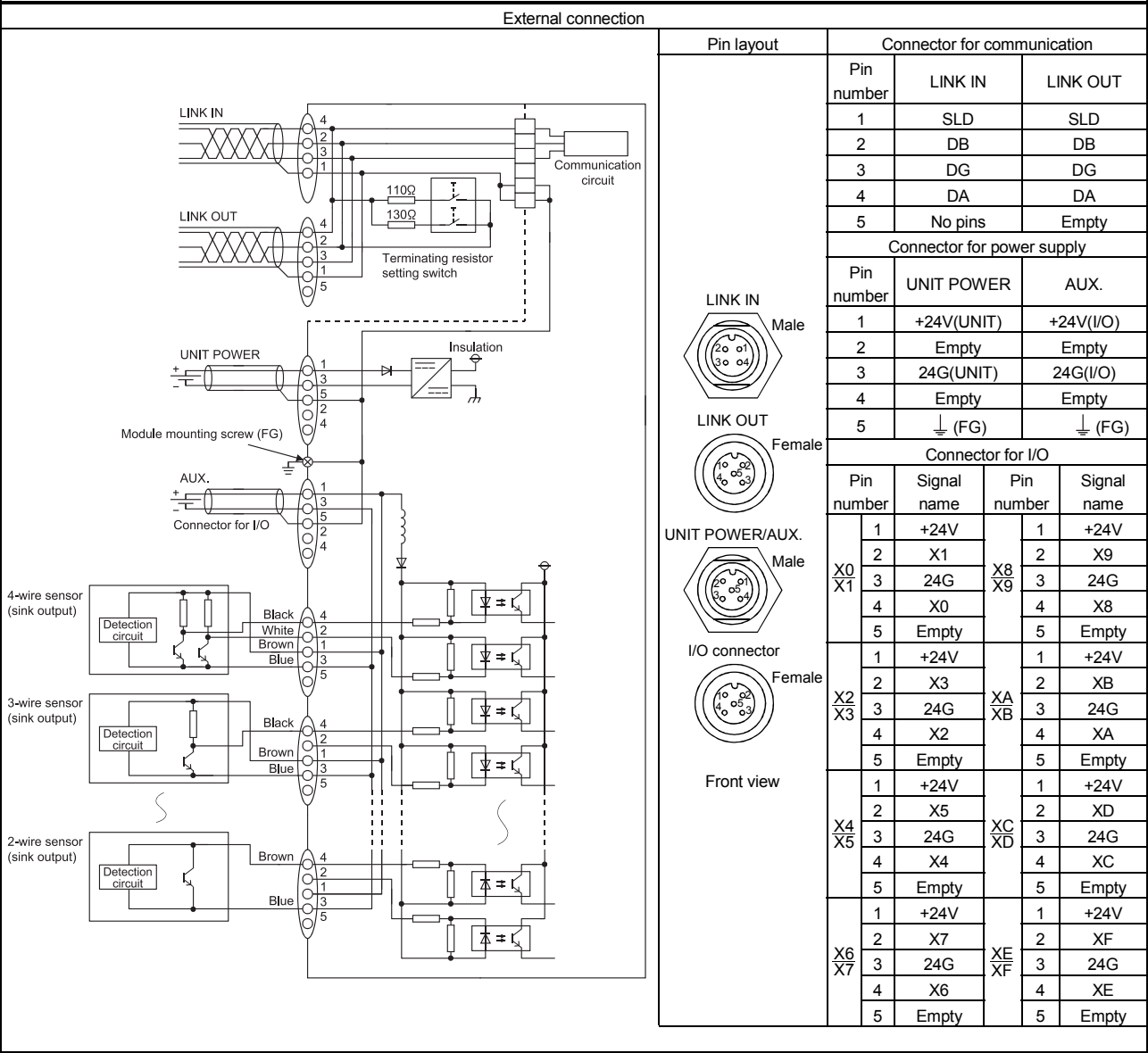


## 4.6 Waterproof Type Input Module

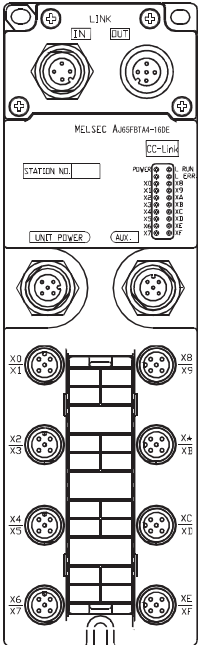
## 4.6.1 AJ65FBTA4-16D 24VDC input module (positive common (sink type))

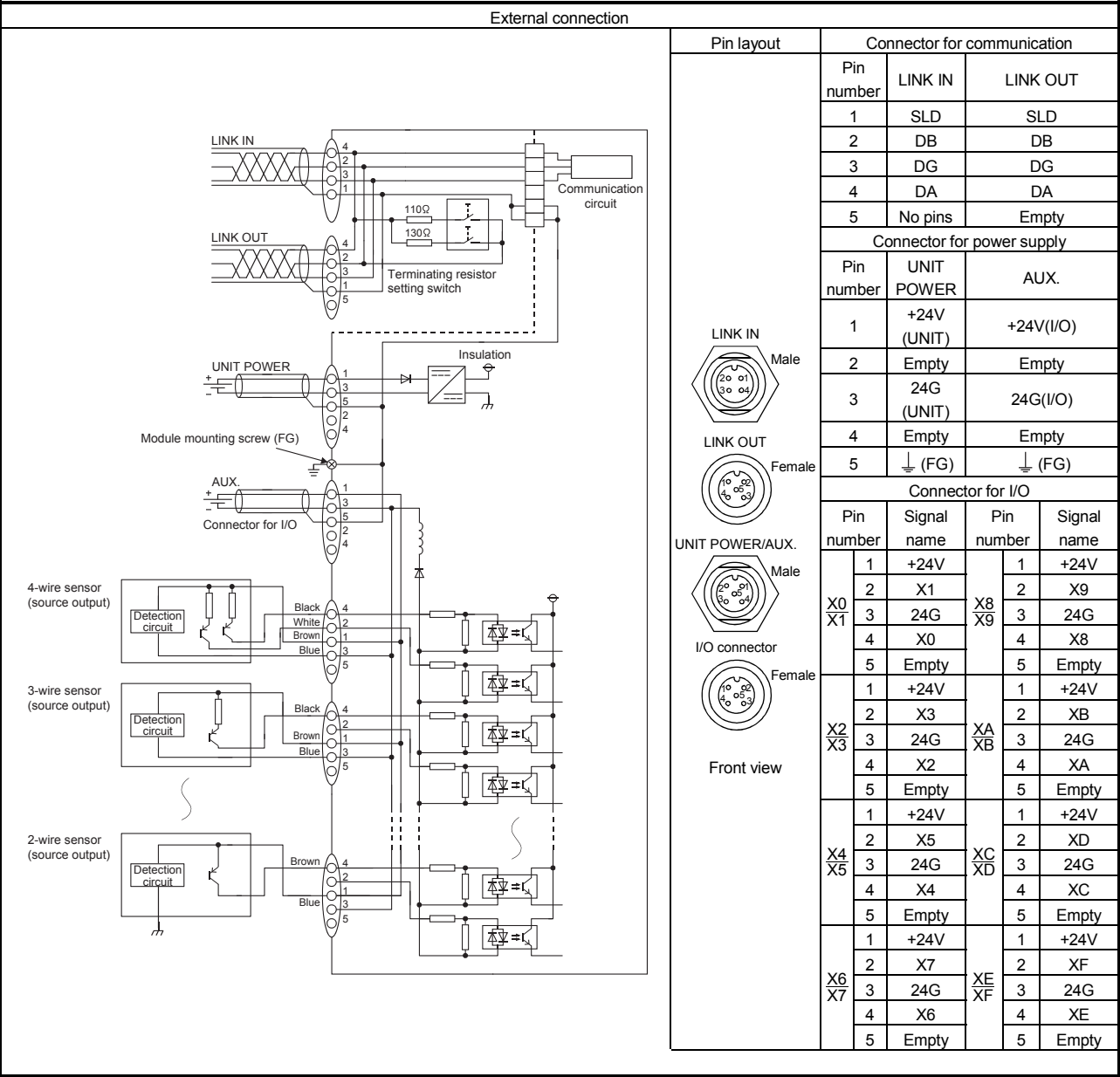
| Item                                     |         | Type | DC input module                                                                                        | Appearance                                                                           |
|------------------------------------------|---------|------|--------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |         |      | AJ65FBTA4-16D                                                                                          |                                                                                      |
| Number of input points                   |         |      | 16 points                                                                                              |  |
| Isolation method                         |         |      | Photocoupler                                                                                           |                                                                                      |
| Rated input voltage                      |         |      | 24VDC                                                                                                  |                                                                                      |
| Rated input current                      |         |      | Approx. 7mA                                                                                            |                                                                                      |
| Operating voltage range                  |         |      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                              |                                                                                      |
| Max. number of simultaneous input points |         |      | 100%                                                                                                   |                                                                                      |
| ON voltage/ON current                    |         |      | 14VDC or higher/3.5mA or higher                                                                        |                                                                                      |
| OFF voltage/OFF current                  |         |      | 6VDC or lower/1.7mA or lower                                                                           |                                                                                      |
| Input resistance                         |         |      | Approx. 3.3kΩ                                                                                          |                                                                                      |
| Response time                            | OFF→ON  |      | 1.5ms or less (at 24VDC)                                                                               |                                                                                      |
|                                          | ON→OFF  |      | 1.5ms or less (at 24VDC)                                                                               |                                                                                      |
| Wiring method for common                 |         |      | 16 points/common (2- to 4-wire, waterproof connector type)                                             |                                                                                      |
| Input type                               |         |      | Positive common (sink type)                                                                            |                                                                                      |
| Supply current for connected device      |         |      | 1.0A or lower/common                                                                                   |                                                                                      |
| Number of occupied stations              |         |      | 32-point assignment/station (16 points used)                                                           |                                                                                      |
| Module power supply                      | Voltage |      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                              |                                                                                      |
|                                          | Current |      | 40mA or lower (at 24VDC and all points ON)                                                             |                                                                                      |
| Noise immunity                           |         |      | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition) |                                                                                      |
| Withstand voltage                        |         |      | 500VAC for 1 minute between all DC external terminals and ground                                       |                                                                                      |
| Insulation resistance                    |         |      | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)      |                                                                                      |
| Protection degree                        |         |      | IP67                                                                                                   |                                                                                      |
| Weight                                   |         |      | 0.40kg                                                                                                 |                                                                                      |
| Accessory                                |         |      | User's manual                                                                                          |                                                                                      |
| Optional item                            |         |      | Waterproof cap: A6CAP-WP2 (20 pieces)                                                                  |                                                                                      |
| Other connecting devices                 |         |      | Refer to Section 1.6.1.                                                                                |                                                                                      |





## 4.6.2 AJ65FBTA4-16DE 24VDC input module (negative common (source type))

| Type                                     |         | DC input module                                                                                        |  | Appearance                                                                           |
|------------------------------------------|---------|--------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|
| Item                                     |         | AJ65FBTA4-16DE                                                                                         |  |                                                                                      |
| Number of input points                   |         | 16 points                                                                                              |  |  |
| Isolation method                         |         | Photocoupler                                                                                           |  |                                                                                      |
| Rated input voltage                      |         | 24VDC                                                                                                  |  |                                                                                      |
| Rated input current                      |         | Approx. 7mA                                                                                            |  |                                                                                      |
| Operating voltage range                  |         | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                              |  |                                                                                      |
| Max. number of simultaneous input points |         | 100%                                                                                                   |  |                                                                                      |
| ON voltage/ON current                    |         | 14VDC or higher/3.5mA or higher                                                                        |  |                                                                                      |
| OFF voltage/OFF current                  |         | 6VDC or lower/1.7mA or lower                                                                           |  |                                                                                      |
| Input resistance                         |         | Approx. 3.3kΩ                                                                                          |  |                                                                                      |
| Response time                            | OFF→ON  | 1.5ms or less (at 24VDC)                                                                               |  |                                                                                      |
|                                          | ON→OFF  | 1.5ms or less (at 24VDC)                                                                               |  |                                                                                      |
| Wiring method for common                 |         | 16 points/common (2- to 4-wire, waterproof connector type)                                             |  |                                                                                      |
| Input type                               |         | Negative common (source type)                                                                          |  |                                                                                      |
| Supply current for connected device      |         | 1.0A or lower/common                                                                                   |  |                                                                                      |
| Number of occupied stations              |         | 32-point assignment/station (16 points used)                                                           |  |                                                                                      |
| Module power supply                      | Voltage | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                              |  |                                                                                      |
|                                          | Current | 40mA or lower (at 24VDC and all points ON)                                                             |  |                                                                                      |
| Noise immunity                           |         | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition) |  |                                                                                      |
| Withstand voltage                        |         | 500VAC for 1 minute between all DC external terminals and ground                                       |  |                                                                                      |
| Insulation resistance                    |         | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)      |  |                                                                                      |
| Protection degree                        |         | IP67                                                                                                   |  |                                                                                      |
| Weight                                   |         | 0.40kg                                                                                                 |  |                                                                                      |
| Accessory                                |         | User's manual                                                                                          |  |                                                                                      |
| Optional item                            |         | Waterproof cap: A6CAP-WP2 (20 pieces)                                                                  |  |                                                                                      |
| Other connecting devices                 |         | Refer to Section 1.6.1.                                                                                |  |                                                                                      |



#### 4.6.3 AJ65SBTW4-16D 24VDC input module (positive common (sink), negative common (source) loading)

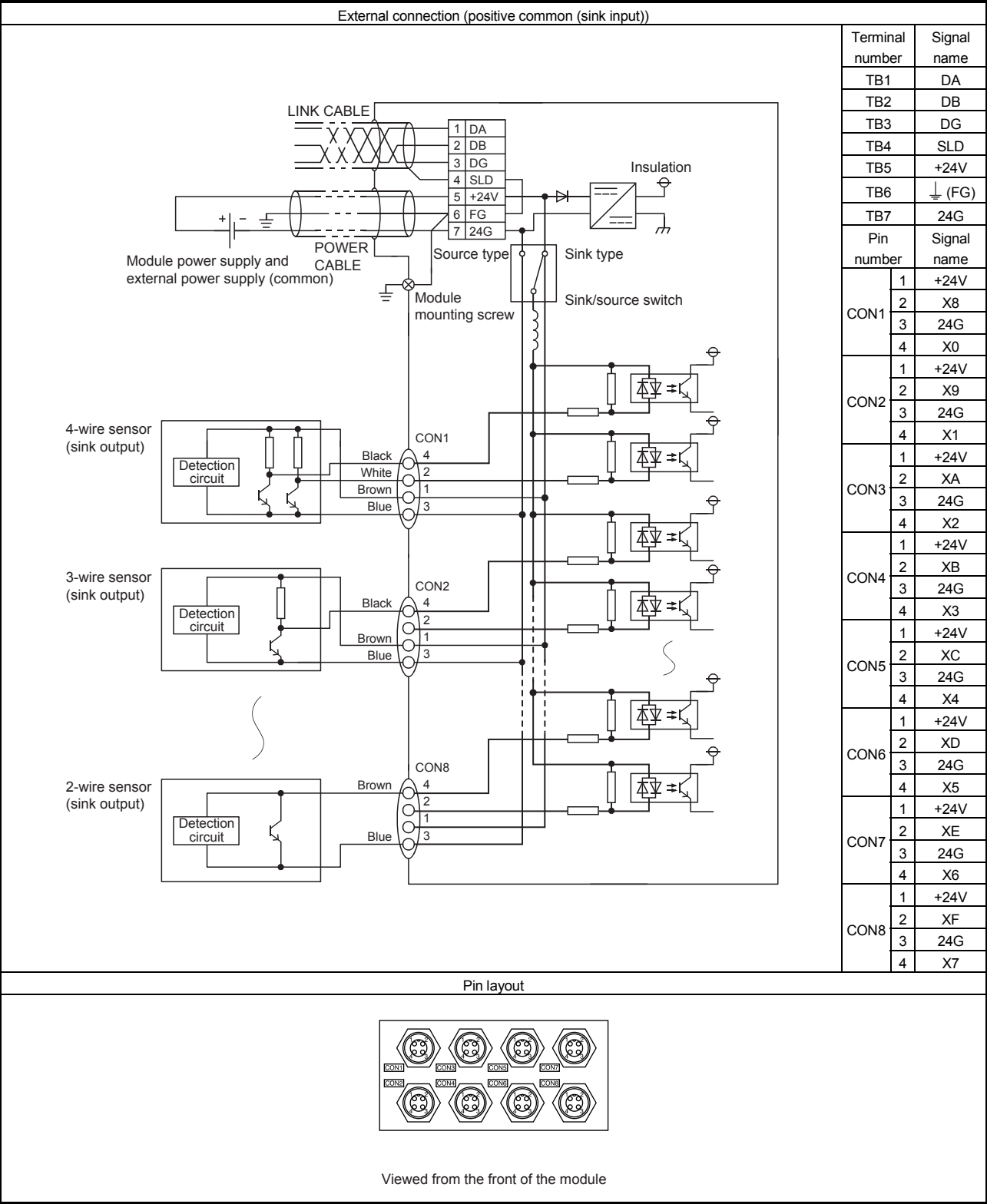
| Type                                     |                                                                           | DC input module                                                                                                                                                                                                                                                                                                                                          |  | Appearance |
|------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------|
| Item                                     |                                                                           | AJ65SBTW4-16D                                                                                                                                                                                                                                                                                                                                            |  |            |
| Operating ambient temperature            |                                                                           | 0 to 45°C                                                                                                                                                                                                                                                                                                                                                |  |            |
| Storage ambient temperature              |                                                                           | -20 to 65°C *1 *3                                                                                                                                                                                                                                                                                                                                        |  |            |
| Number of input points                   |                                                                           | 16 points                                                                                                                                                                                                                                                                                                                                                |  |            |
| Isolation method                         |                                                                           | Photocoupler                                                                                                                                                                                                                                                                                                                                             |  |            |
| Rated input voltage                      |                                                                           | 24VDC                                                                                                                                                                                                                                                                                                                                                    |  |            |
| Rated input current                      |                                                                           | Approx. 5mA                                                                                                                                                                                                                                                                                                                                              |  |            |
| Operating voltage range                  |                                                                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                                                                                |  |            |
| Max. number of simultaneous input points |                                                                           | 100%                                                                                                                                                                                                                                                                                                                                                     |  |            |
| ON voltage/ON current                    |                                                                           | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                                                                                                                                          |  |            |
| OFF voltage/OFF current                  |                                                                           | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                                                                                                                             |  |            |
| Input resistance                         |                                                                           | Approx. 4.7kΩ                                                                                                                                                                                                                                                                                                                                            |  |            |
| Response time                            | OFF→ON                                                                    | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                                                                                 |  |            |
|                                          | ON→OFF                                                                    | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                                                                                 |  |            |
| Wiring method for common                 |                                                                           | 16 points/common (4-wire, waterproof connector type)<br>Same as that for the module power supply                                                                                                                                                                                                                                                         |  |            |
| Input type                               |                                                                           | Positive/negative common shared type (sink/source shared type)<br>(Selected using the switch.)                                                                                                                                                                                                                                                           |  |            |
| Number of occupied stations              |                                                                           | 32-point assignment/station (16 points used)                                                                                                                                                                                                                                                                                                             |  |            |
| Module power supply                      | Voltage                                                                   | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                                                                                |  |            |
|                                          | Current                                                                   | 35mA or lower (at 24VDC and all points ON),<br>excluding input current for I/O part                                                                                                                                                                                                                                                                      |  |            |
| Noise immunity                           |                                                                           | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                                                                                |  |            |
| Withstand voltage                        |                                                                           | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                                                                         |  |            |
| Insulation resistance                    |                                                                           | 10MΩ or higher between all DC external terminals and ground (500VDC<br>insulation resistance tester)                                                                                                                                                                                                                                                     |  |            |
| Protection degree                        |                                                                           | IP67                                                                                                                                                                                                                                                                                                                                                     |  |            |
| Weight                                   |                                                                           | 0.70kg                                                                                                                                                                                                                                                                                                                                                   |  |            |
| External connection system               |                                                                           | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Waterproof connector<br>[compliant with IEC 60947-5-2, M12, male, 4 pins, IP67]<br>(connector for I/O)<br><Optional><br>Dustproof cap: A6CAP-DC1 (20 pieces), waterproof cap: A6CAP-WP1 (20<br>pieces) |  |            |
| Tightening<br>torque<br>range*2          | Module top-cover mounting<br>screw (M3)                                   | 0.54 to 0.64N·m                                                                                                                                                                                                                                                                                                                                          |  |            |
|                                          | Module front-cover mounting<br>screw (M3)                                 | 0.54 to 0.64N·m                                                                                                                                                                                                                                                                                                                                          |  |            |
|                                          | Module mounting screw<br>(M4 with plain washer<br>finished round)         | 1.27 to 1.47N·m                                                                                                                                                                                                                                                                                                                                          |  |            |
|                                          | Nut for pipe                                                              | 0.99 to 1.48N·m                                                                                                                                                                                                                                                                                                                                          |  |            |
| Applicable<br>wire size                  | Communication part,<br>module power supply part,<br>I/O power supply part | Applicable cable size: φ5.0 to 8.0mm<br>• RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> ]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> ]                                                                                                                             |  |            |
|                                          | Connector for I/O                                                         | -                                                                                                                                                                                                                                                                                                                                                        |  |            |
| Accessory                                |                                                                           | User's manual, waterproof plug (2 pieces)                                                                                                                                                                                                                                                                                                                |  |            |

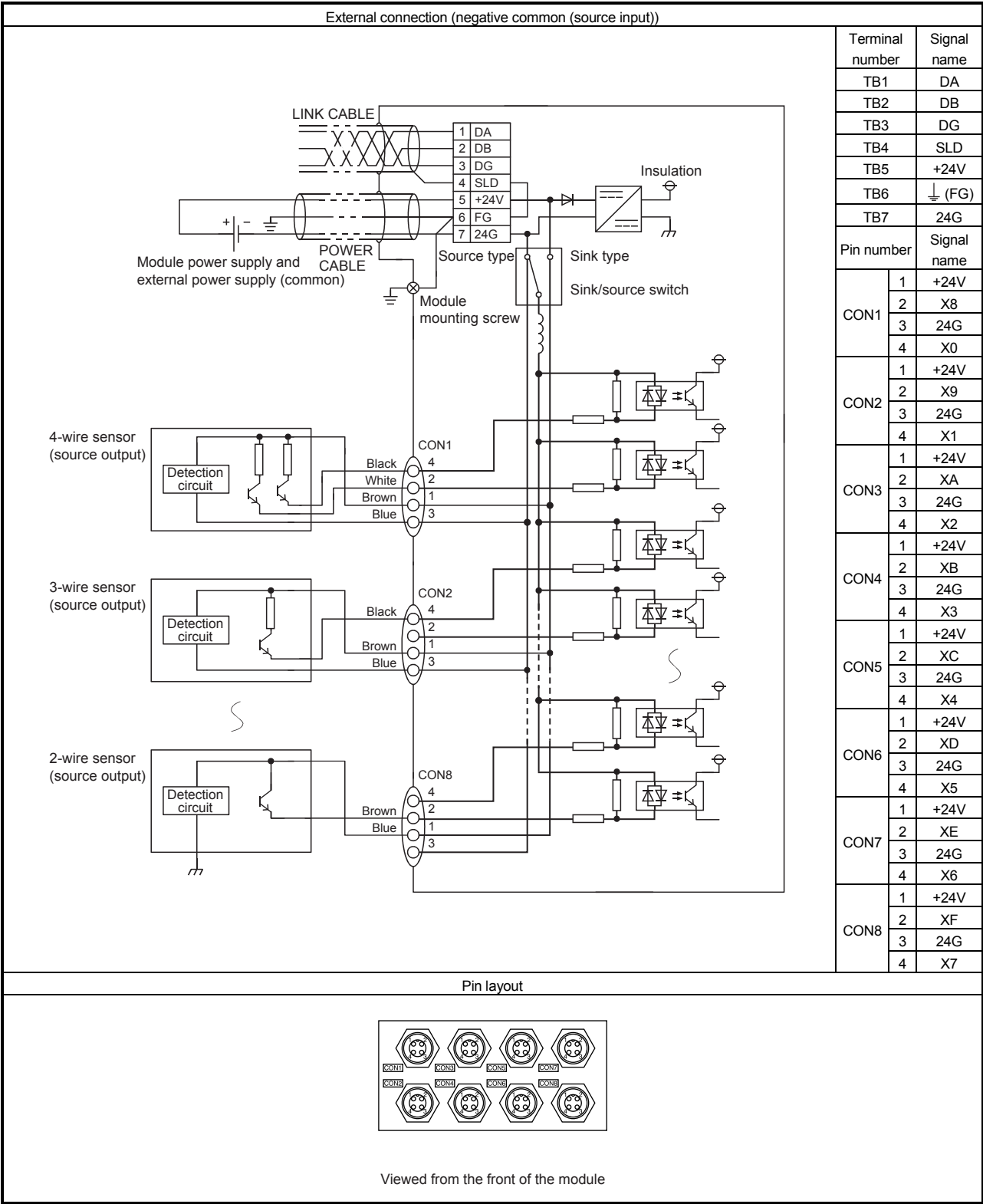
The diagram illustrates the physical layout of the DC input module. It features a vertical terminal block on the left with 16 points, labeled X0 through X7 for each of the two 8-point sections. To the right of the terminal block is a 7-pin connector for the module power supply, labeled PW, O, L, ERR, Y0, Y1, and Y2. Further right is a 4-pin connector for the I/O power supply, labeled Y3, Y4, Y5, and Y6. The module is shown with its top cover and front cover, and the diagram includes a legend for the cable types: LINK CABLE and POWER CABLE.

\* 1: Store the wired module in the ambient temperatures of -10 to 55°C.

\* 2: Do not apply an excessive force (39N or more) to the connected cable at the inlet of the pipe.

\* 3: To use the wired module that has been stored exceeding the ambient temperature of 55°C, retighten the nuts.



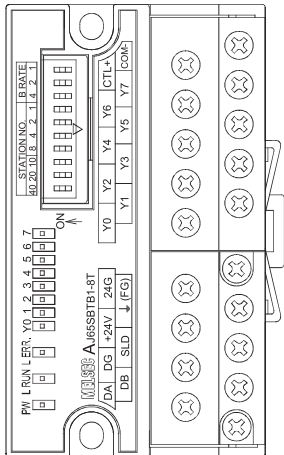


## 5 SPECIFICATIONS FOR OUTPUT MODULES

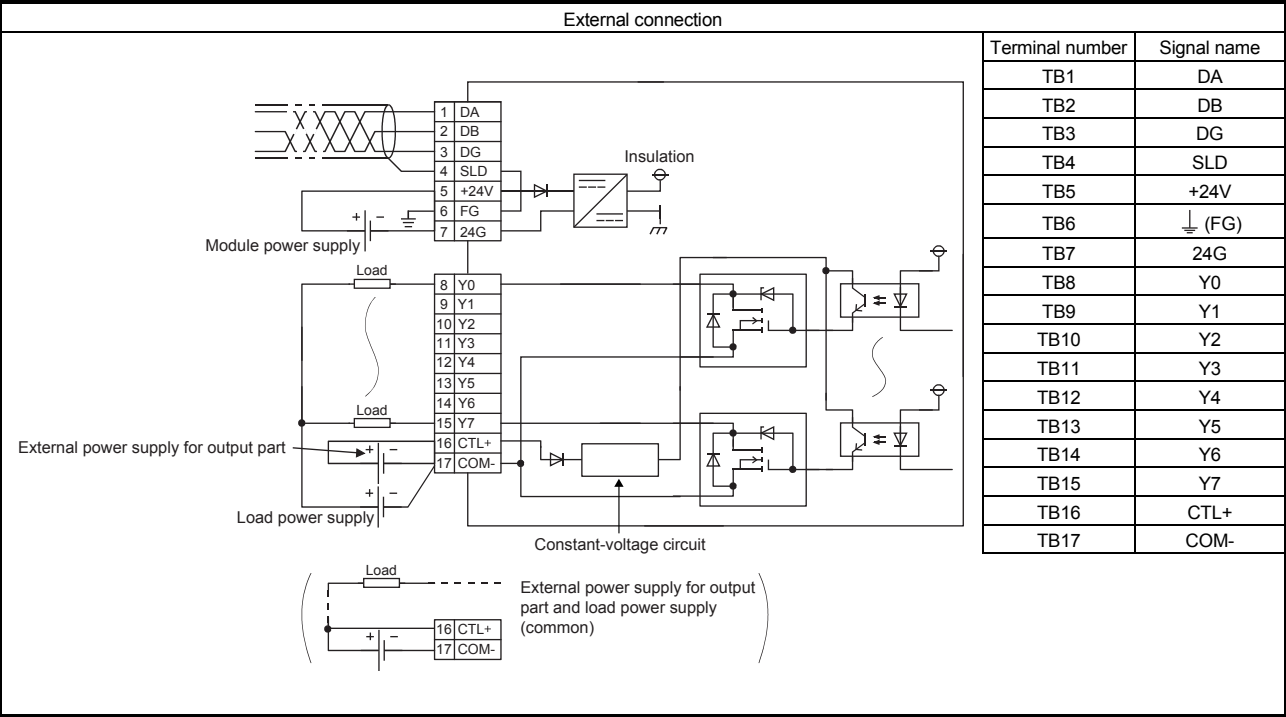
This chapter describes the specifications for an output module that can be connected to the CC-Link system.

## 5.1 Terminal Block Type Output Module

## 5.1.1 AJ65SBTB1-8T transistor output module (sink type)

| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                         |                                                                                       |
|---------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Item                                  |                                              | AJ65SBTB1-8T                                                                                                                                                                                                                                                                                     | Appearance                                                                            |
| Number of output points               |                                              | 8 points                                                                                                                                                                                                                                                                                         |  |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                     |                                                                                       |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                         |                                                                                       |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                       |
| Max. load current                     |                                              | 0.5A/point, 2.4A/common                                                                                                                                                                                                                                                                          |                                                                                       |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                               |                                                                                       |
| Leakage current at OFF                |                                              | 0.25mA or lower                                                                                                                                                                                                                                                                                  |                                                                                       |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                         |                                                                                       |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                                        |                                                                                       |
| Protection function                   |                                              | Overload protection, overvoltage protection, overheat protection                                                                                                                                                                                                                                 |                                                                                       |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                    |                                                                                       |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                   |                                                                                       |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                       |
|                                       | Current                                      | 15mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                               |                                                                                       |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                      |                                                                                       |
| Wiring method for common              |                                              | 8 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                                    |                                                                                       |
| Number of occupied stations           |                                              | 32-point assignment/station (8 points used)                                                                                                                                                                                                                                                      |                                                                                       |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                       |
|                                       | Current                                      | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |                                                                                       |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |                                                                                       |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |                                                                                       |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |                                                                                       |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                             |                                                                                       |
| Weight                                |                                              | 0.14kg                                                                                                                                                                                                                                                                                           |                                                                                       |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                      |                                                                                       |
|                                       | I/O power supply part, I/O part              | 10-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                   |                                                                                       |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                              |                                                                                       |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |                                                                                       |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                       |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                           |                                                                                       |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                     |                                                                                       |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                    |                                                                                       |

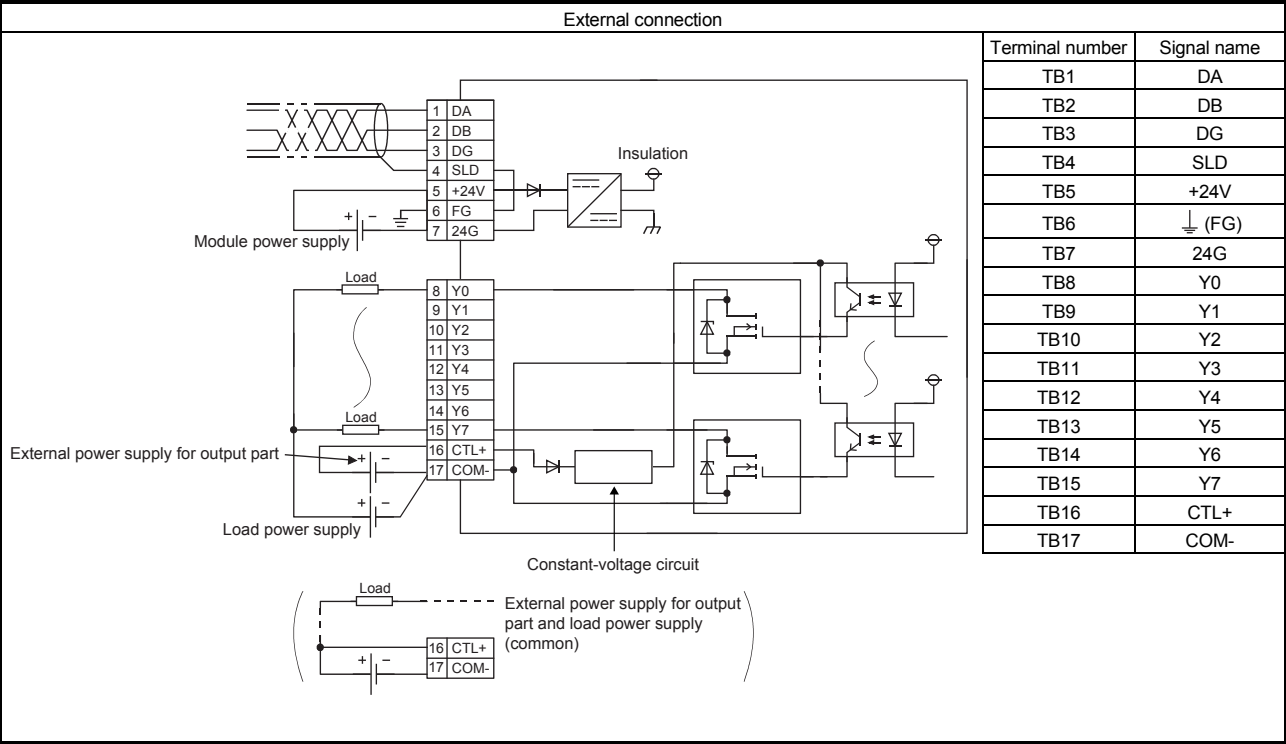
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



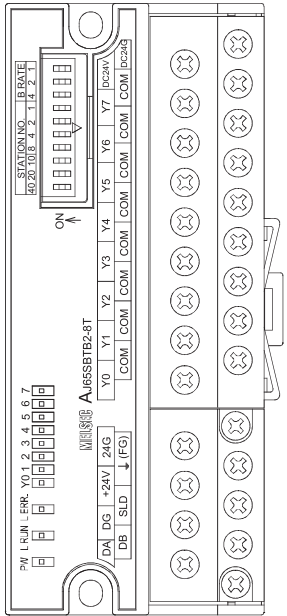


| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                         |  |
|---------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Item                                  |                                              | AJ65SBTB1-8T1                                                                                                                                                                                                                                                                                    |  |
| Number of output points               |                                              | 8 points                                                                                                                                                                                                                                                                                         |  |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                     |  |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                         |  |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |  |
| Max. load current                     |                                              | 0.5A/point, 2.4A/common                                                                                                                                                                                                                                                                          |  |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                               |  |
| Leakage current at OFF                |                                              | 0.1mA or lower                                                                                                                                                                                                                                                                                   |  |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                         |  |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                                        |  |
| Protection function                   |                                              | None                                                                                                                                                                                                                                                                                             |  |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                    |  |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                   |  |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |  |
|                                       | Current                                      | 15mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                               |  |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                      |  |
| Wiring method for common              |                                              | 8 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                                    |  |
| Number of occupied stations           |                                              | 32-point assignment/station (8 points used)                                                                                                                                                                                                                                                      |  |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |  |
|                                       | Current                                      | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |  |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |  |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |  |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |  |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                             |  |
| Weight                                |                                              | 0.14kg                                                                                                                                                                                                                                                                                           |  |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block                                                                                                                                                                                                                                                                 |  |
|                                       |                                              | [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                                          |  |
|                                       | I/O power supply part, I/O part              | 10-point direct-mount terminal block                                                                                                                                                                                                                                                             |  |
|                                       |                                              | [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                                                           |  |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                              |  |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |  |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |  |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                           |  |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                     |  |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                    |  |

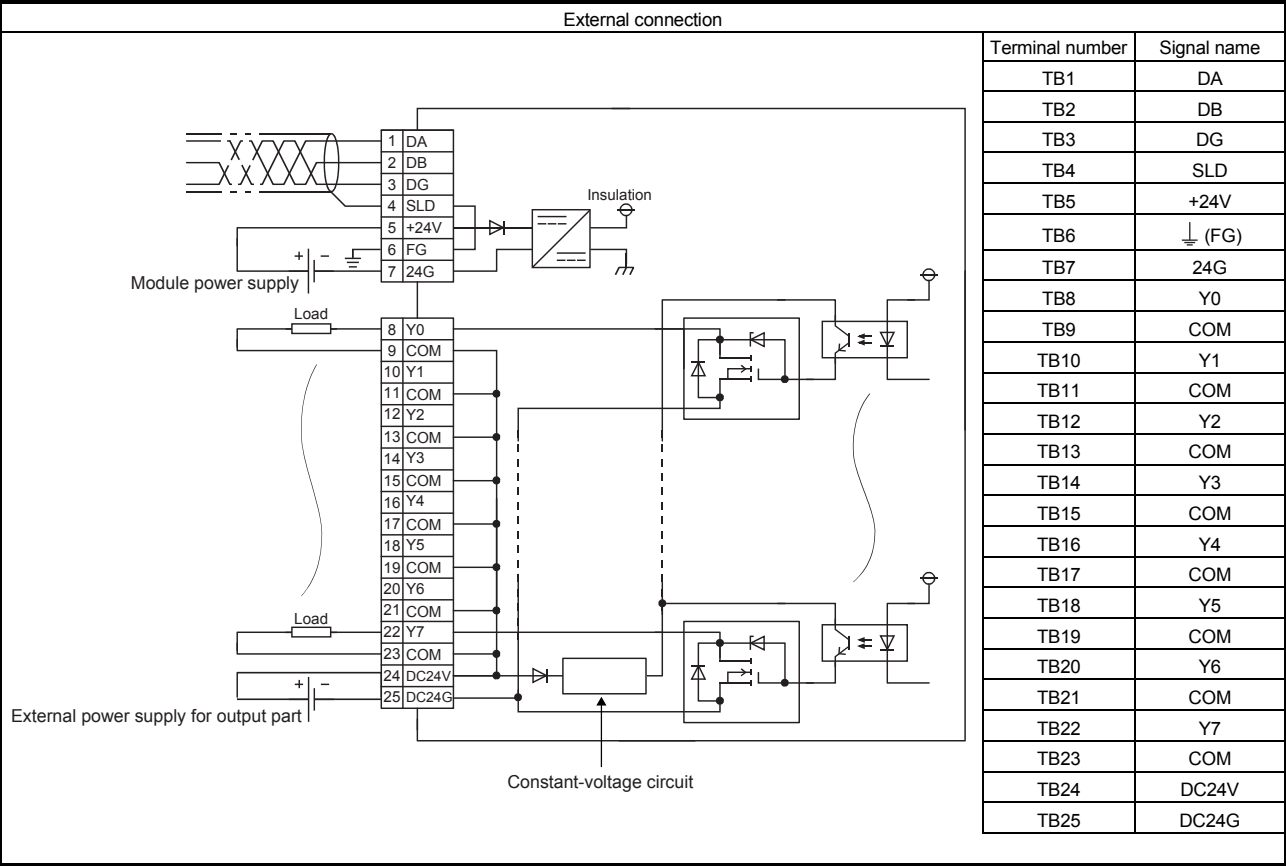
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## 5.1.3 AJ65SBTB2-8T transistor output module (sink type)

| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                             | Appearance                                                                           |
|---------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                              | AJ65SBTB2-8T                                                                                                                                                                                                                                                                                         |                                                                                      |
| Number of output points               |                                              | 8 points                                                                                                                                                                                                                                                                                             |  |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                         |                                                                                      |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                             |                                                                                      |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
| Max. load current                     |                                              | 0.5A/point, 2.4A/common                                                                                                                                                                                                                                                                              |                                                                                      |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                                   |                                                                                      |
| Leakage current at OFF                |                                              | 0.25mA or lower                                                                                                                                                                                                                                                                                      |                                                                                      |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                             |                                                                                      |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                                            |                                                                                      |
| Protection function                   |                                              | Overload protection, overvoltage protection, overheat protection                                                                                                                                                                                                                                     |                                                                                      |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                        |                                                                                      |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                       |                                                                                      |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 17.8mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                                 |                                                                                      |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                          |                                                                                      |
| Wiring method for common              |                                              | 8 points/common (2-wire, terminal block type)                                                                                                                                                                                                                                                        |                                                                                      |
| Number of occupied stations           |                                              | 32-point assignment/station (8 points used)                                                                                                                                                                                                                                                          |                                                                                      |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                           |                                                                                      |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                               |                                                                                      |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                     |                                                                                      |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                    |                                                                                      |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Weight                                |                                              | 0.18kg                                                                                                                                                                                                                                                                                               |                                                                                      |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                          |                                                                                      |
|                                       | I/O power supply part, I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                       |                                                                                      |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                                  |                                                                                      |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                    |                                                                                      |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>• RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                               |                                                                                      |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                         |                                                                                      |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                        |                                                                                      |

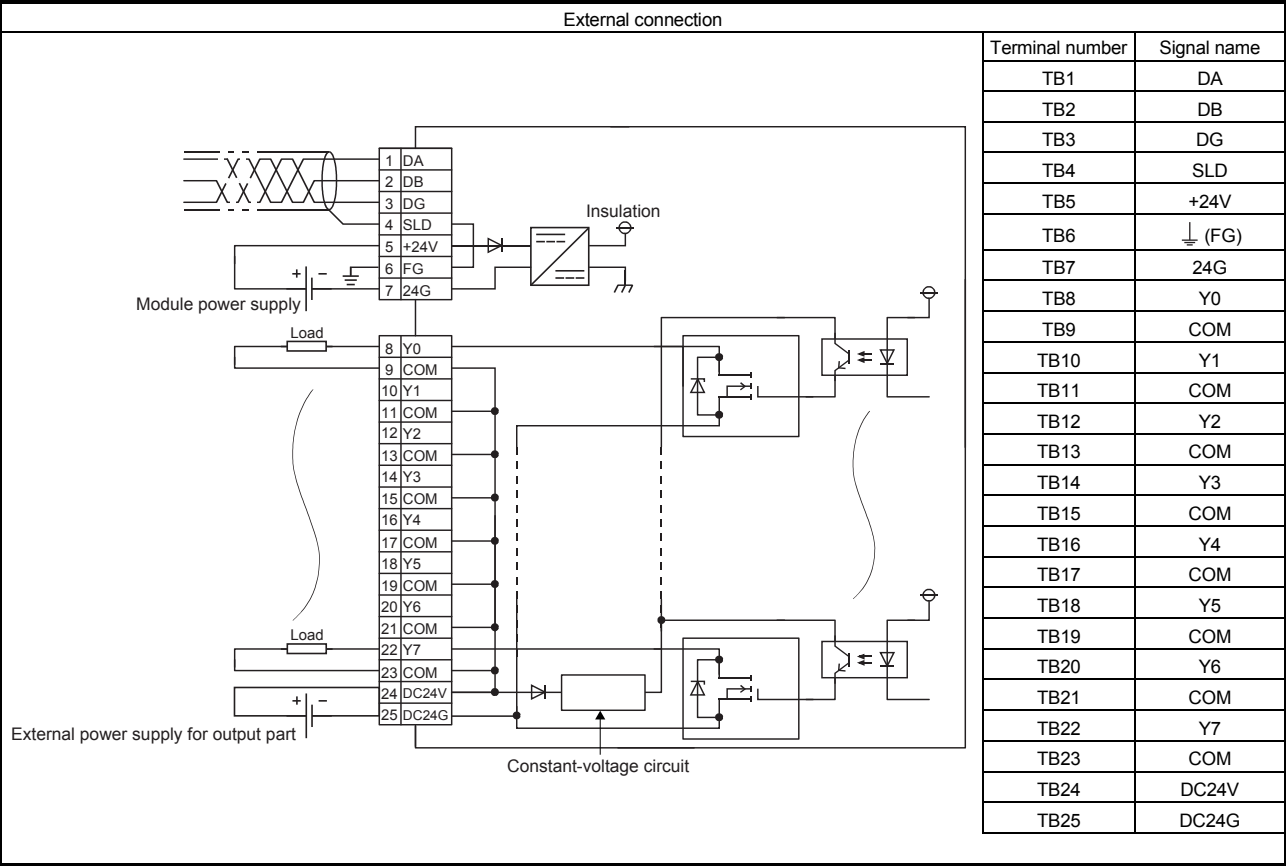
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



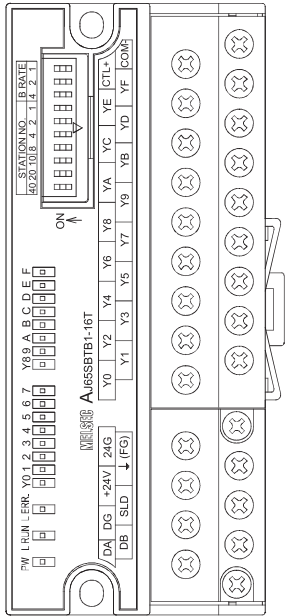
## 5.1.4 AJ65SBTB2-8T1 transistor output module (sink type)

| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                         |            |
|---------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Item                                  |                                              | AJ65SBTB2-8T1                                                                                                                                                                                                                                                                                    | Appearance |
| Number of output points               |                                              | 8 points                                                                                                                                                                                                                                                                                         |            |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                     |            |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                         |            |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |            |
| Max. load current                     |                                              | 0.5A/point, 2.4A/common                                                                                                                                                                                                                                                                          |            |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                               |            |
| Leakage current at OFF                |                                              | 0.1mA or lower                                                                                                                                                                                                                                                                                   |            |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                         |            |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                                        |            |
| Protection function                   |                                              | None                                                                                                                                                                                                                                                                                             |            |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                    |            |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                   |            |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |            |
|                                       | Current                                      | 17.8mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                             |            |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                      |            |
| Wiring method for common              |                                              | 8 points/common (2-wire, terminal block type)                                                                                                                                                                                                                                                    |            |
| Number of occupied stations           |                                              | 32-point assignment/station (8 points used)                                                                                                                                                                                                                                                      |            |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |            |
|                                       | Current                                      | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |            |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |            |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |            |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |            |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                             |            |
| Weight                                |                                              | 0.18kg                                                                                                                                                                                                                                                                                           |            |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                      |            |
|                                       | I/O power supply part, I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                   |            |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                           |            |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |            |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |            |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                           |            |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                     |            |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                    |            |

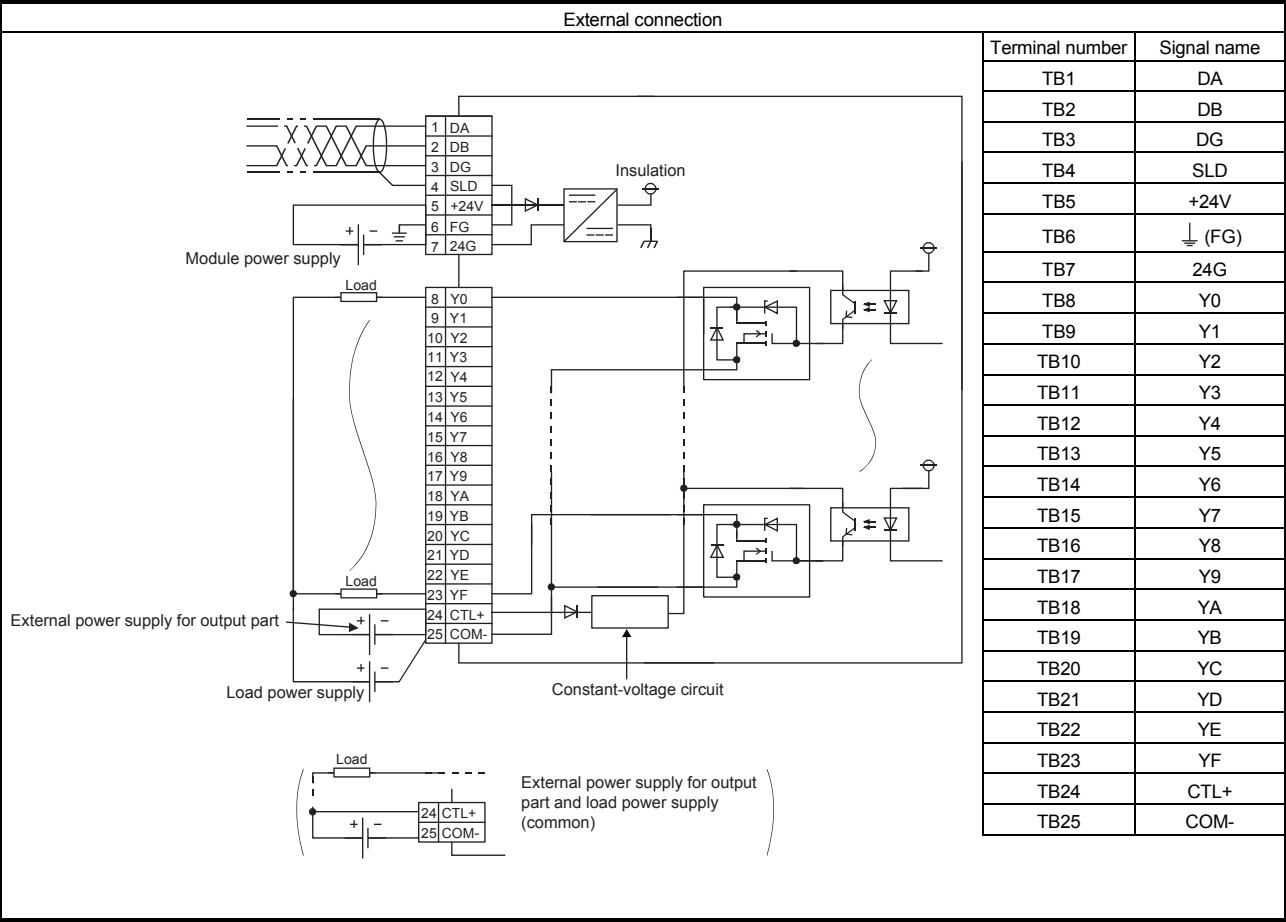
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 5.1.5 AJ65SBTB1-16T transistor output module (sink type)

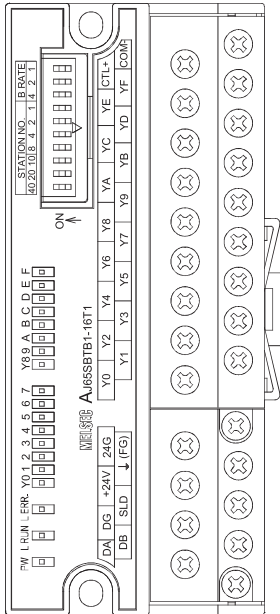
| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                             |                                                                                      |
|---------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                              | AJ65SBTB1-16T                                                                                                                                                                                                                                                                                        | Appearance                                                                           |
| Number of output points               |                                              | 16 points                                                                                                                                                                                                                                                                                            |  |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                         |                                                                                      |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                             |                                                                                      |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
| Max. load current                     |                                              | 0.5A/point, 3.6A/common                                                                                                                                                                                                                                                                              |                                                                                      |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                                   |                                                                                      |
| Leakage current at OFF                |                                              | 0.25mA or lower                                                                                                                                                                                                                                                                                      |                                                                                      |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                             |                                                                                      |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                                            |                                                                                      |
| Protection function                   |                                              | Overload protection, overvoltage protection, overheat protection                                                                                                                                                                                                                                     |                                                                                      |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                        |                                                                                      |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                       |                                                                                      |
| External Power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 30mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                                   |                                                                                      |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                          |                                                                                      |
| Wiring method for common              |                                              | 16 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                                       |                                                                                      |
| Number of occupied stations           |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                                                                         |                                                                                      |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                           |                                                                                      |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                               |                                                                                      |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                     |                                                                                      |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                    |                                                                                      |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Weight                                |                                              | 0.18kg                                                                                                                                                                                                                                                                                               |                                                                                      |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                          |                                                                                      |
|                                       | I/O power supply part, I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                       |                                                                                      |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                               |                                                                                      |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                    |                                                                                      |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>• RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                               |                                                                                      |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                         |                                                                                      |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                        |                                                                                      |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

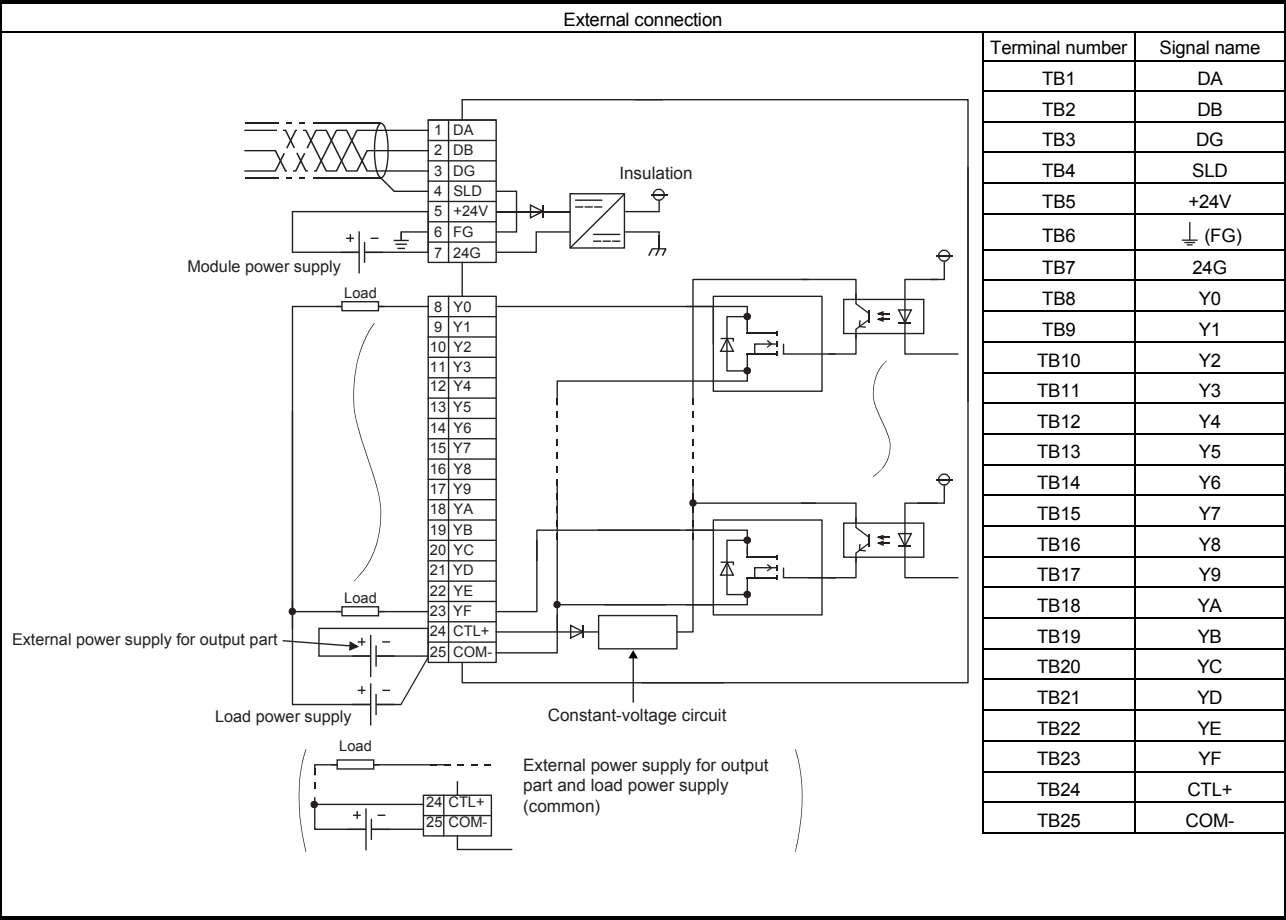




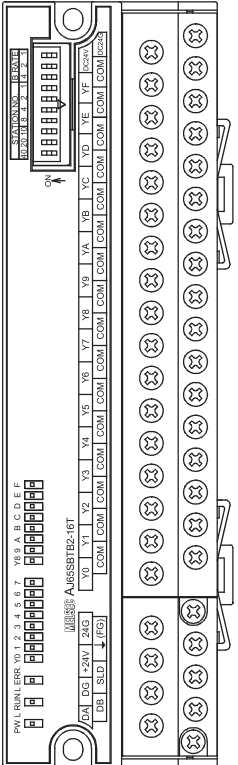
## 5.1.6 AJ65SBTB1-16T1 transistor output module (sink type)

| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                             |                                                                                      |
|---------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                              | AJ65SBTB1-16T1                                                                                                                                                                                                                                                                                       | Appearance                                                                           |
| Number of output points               |                                              | 16 points                                                                                                                                                                                                                                                                                            |  |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                         |                                                                                      |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                             |                                                                                      |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
| Max. load current                     |                                              | 0.5A/point, 3.6A/common                                                                                                                                                                                                                                                                              |                                                                                      |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                                   |                                                                                      |
| Leakage current at OFF                |                                              | 0.1mA or lower                                                                                                                                                                                                                                                                                       |                                                                                      |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                             |                                                                                      |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                                            |                                                                                      |
| Protection function                   |                                              | None                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                        |                                                                                      |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                       |                                                                                      |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 30mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                                   |                                                                                      |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                          |                                                                                      |
| Wiring method for common              |                                              | 16 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                                       |                                                                                      |
| Number of occupied stations           |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                                                                         |                                                                                      |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                           |                                                                                      |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                               |                                                                                      |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                     |                                                                                      |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                    |                                                                                      |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Weight                                |                                              | 0.18kg                                                                                                                                                                                                                                                                                               |                                                                                      |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                          |                                                                                      |
|                                       | I/O power supply part, I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                       |                                                                                      |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                                  |                                                                                      |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                    |                                                                                      |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>• RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                               |                                                                                      |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                         |                                                                                      |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                        |                                                                                      |

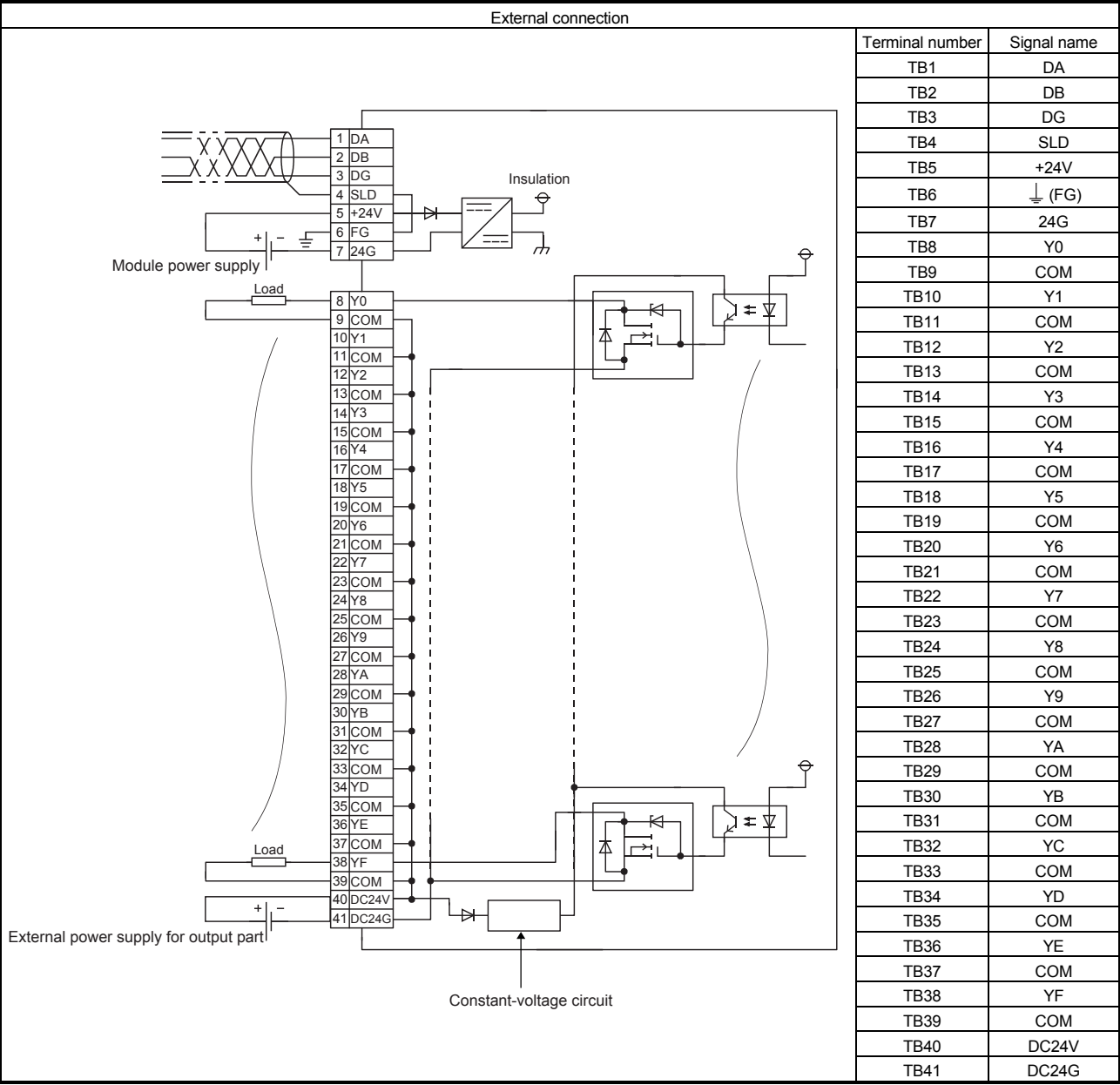
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



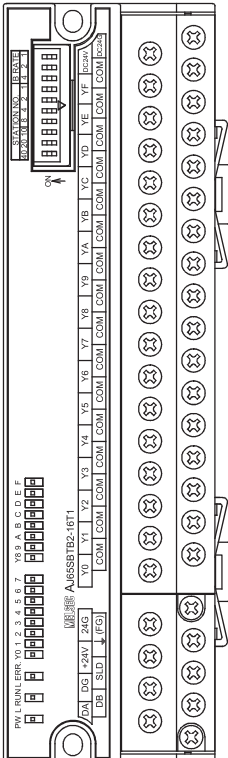
## 5.1.7 AJ65SBTB2-16T transistor output module (sink type)

| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                         |                                                                                      |
|---------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                              | AJ65SBTB2-16T                                                                                                                                                                                                                                                                                    | Appearance                                                                           |
| Number of output points               |                                              | 16 points                                                                                                                                                                                                                                                                                        |  |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                     |                                                                                      |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                         |                                                                                      |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
| Max. load current                     |                                              | 0.5A/point, 3.6A/common                                                                                                                                                                                                                                                                          |                                                                                      |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                               |                                                                                      |
| Leakage current at OFF                |                                              | 0.25mA or lower                                                                                                                                                                                                                                                                                  |                                                                                      |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                         |                                                                                      |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                                        |                                                                                      |
| Protection function                   |                                              | Overload protection, overvoltage protection, overheat protection                                                                                                                                                                                                                                 |                                                                                      |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                    |                                                                                      |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                   |                                                                                      |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
|                                       | Current                                      | 24.2mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                             |                                                                                      |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                      |                                                                                      |
| Wiring method for common              |                                              | 16 points/common (2-wire, terminal block type)                                                                                                                                                                                                                                                   |                                                                                      |
| Number of occupied stations           |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                                                                     |                                                                                      |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
|                                       | Current                                      | 55mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |                                                                                      |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |                                                                                      |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |                                                                                      |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |                                                                                      |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                             |                                                                                      |
| Weight                                |                                              | 0.25kg                                                                                                                                                                                                                                                                                           |                                                                                      |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                      |                                                                                      |
|                                       | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                   |                                                                                      |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                           |                                                                                      |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |                                                                                      |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                           |                                                                                      |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                     |                                                                                      |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                    |                                                                                      |

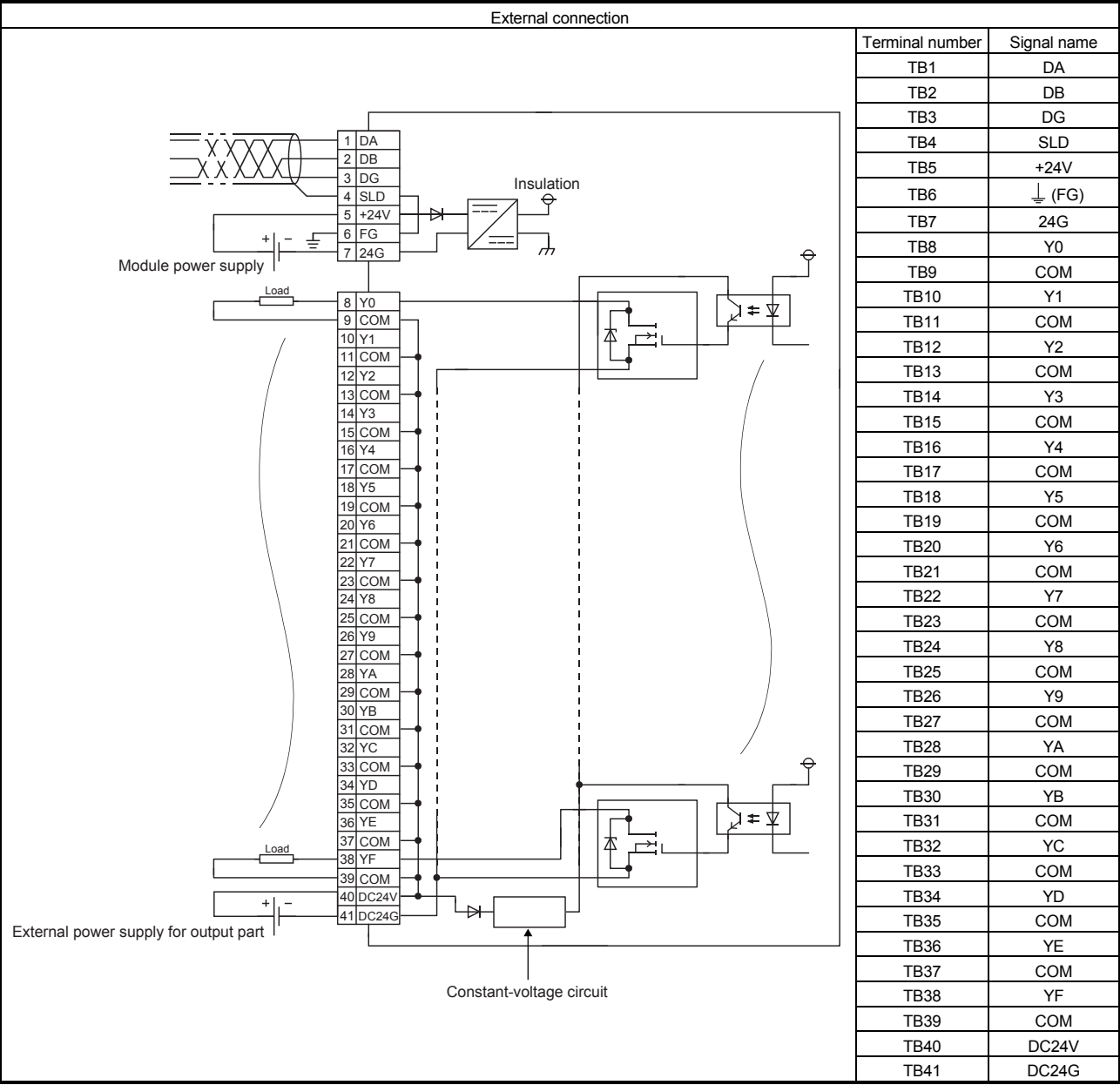
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 5.1.8 AJ65SBTB2-16T1 transistor output module (sink type)

| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                         |                                                                                      |
|---------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                              | AJ65SBTB2-16T1                                                                                                                                                                                                                                                                                   | Appearance                                                                           |
| Number of output points               |                                              | 16 points                                                                                                                                                                                                                                                                                        |  |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                     |                                                                                      |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                         |                                                                                      |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
| Max. load current                     |                                              | 0.5A/point, 3.6A/common                                                                                                                                                                                                                                                                          |                                                                                      |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                               |                                                                                      |
| Leakage current at OFF                |                                              | 0.1mA or lower                                                                                                                                                                                                                                                                                   |                                                                                      |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                         |                                                                                      |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                                        |                                                                                      |
| Protection function                   |                                              | None                                                                                                                                                                                                                                                                                             |                                                                                      |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                    |                                                                                      |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                   |                                                                                      |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
|                                       | Current                                      | 24.2mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                             |                                                                                      |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                      |                                                                                      |
| Wiring method for common              |                                              | 16 points/common (2-wire, terminal block type)                                                                                                                                                                                                                                                   |                                                                                      |
| Number of occupied stations           |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                                                                     |                                                                                      |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                                                                                      |
|                                       | Current                                      | 55mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |                                                                                      |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |                                                                                      |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |                                                                                      |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |                                                                                      |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                             |                                                                                      |
| Weight                                |                                              | 0.25kg                                                                                                                                                                                                                                                                                           |                                                                                      |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                      |                                                                                      |
|                                       | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                   |                                                                                      |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                           |                                                                                      |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |                                                                                      |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                           |                                                                                      |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                     |                                                                                      |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                    |                                                                                      |

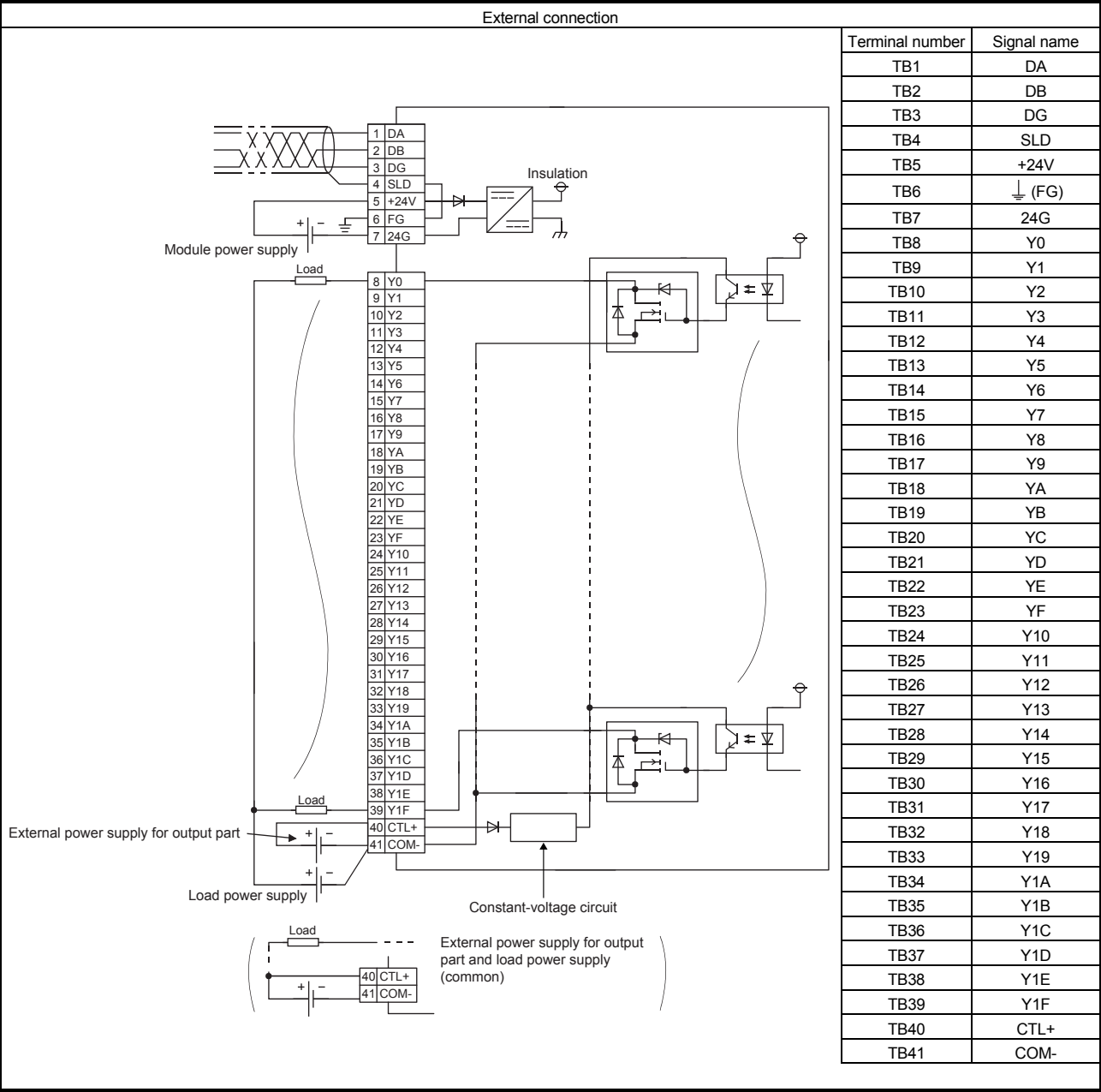
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 5.1.9 AJ65SBTB1-32T transistor output module (sink type)

| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                         |            |
|---------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Item                                  |                                              | AJ65SBTB1-32T                                                                                                                                                                                                                                                                                    | Appearance |
| Number of output points               |                                              | 32 points                                                                                                                                                                                                                                                                                        |            |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                     |            |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                         |            |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |            |
| Max. load current                     |                                              | 0.5A/point, 4.8A/common                                                                                                                                                                                                                                                                          |            |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                               |            |
| Leakage current at OFF                |                                              | 0.25mA or lower                                                                                                                                                                                                                                                                                  |            |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                         |            |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                                        |            |
| Protection function                   |                                              | Overload protection, overvoltage protection, overheat protection                                                                                                                                                                                                                                 |            |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                    |            |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                   |            |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |            |
|                                       | Current                                      | 50mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                               |            |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                      |            |
| Wiring method for common              |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                                   |            |
| Number of occupied stations           |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                                     |            |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |            |
|                                       | Current                                      | 65mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |            |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                           |            |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                 |            |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                |            |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                             |            |
| Weight                                |                                              | 0.25kg                                                                                                                                                                                                                                                                                           |            |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                      |            |
|                                       | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                   |            |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                           |            |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |            |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |            |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                           |            |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                     |            |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                    |            |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

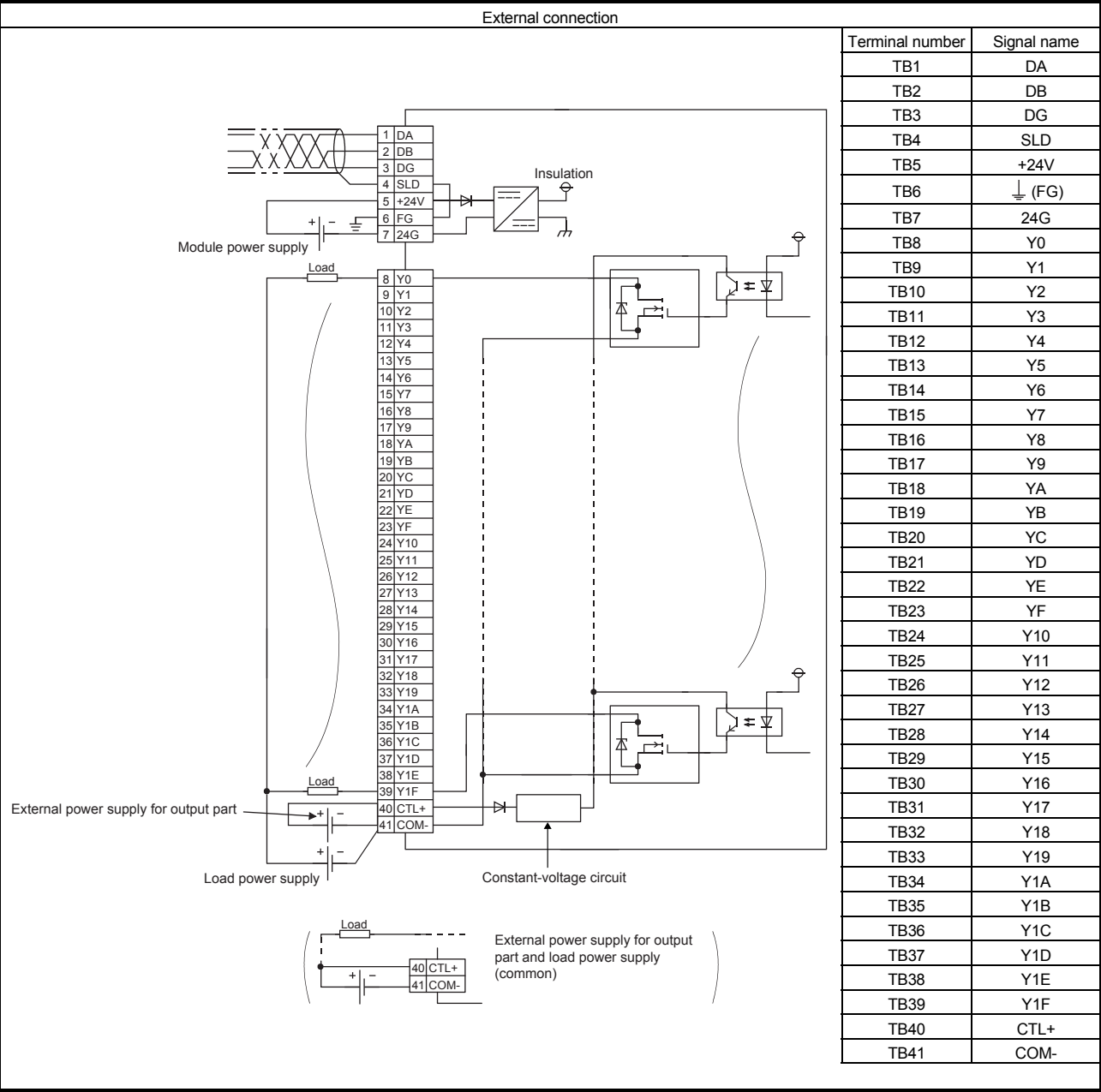




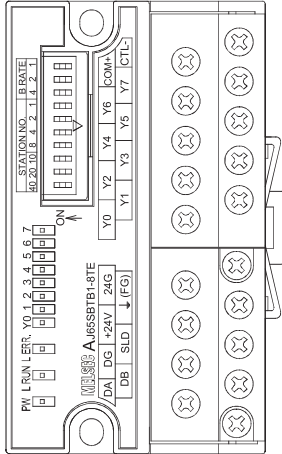
## 5.1.10 AJ65SBTB1-32T1 transistor output module (sink type)

| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                             |            |
|---------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Item                                  |                                              | AJ65SBTB1-32T1                                                                                                                                                                                                                                                                                       | Appearance |
| Number of output points               |                                              | 32 points                                                                                                                                                                                                                                                                                            |            |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                         |            |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                             |            |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |            |
| Max. load current                     |                                              | 0.5A/point, 4.8A/common                                                                                                                                                                                                                                                                              |            |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                                   |            |
| Leakage current at OFF                |                                              | 0.1mA or lower                                                                                                                                                                                                                                                                                       |            |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                             |            |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                                            |            |
| Protection function                   |                                              | None                                                                                                                                                                                                                                                                                                 |            |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                        |            |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                       |            |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |            |
|                                       | Current                                      | 50mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                                   |            |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                          |            |
| Wiring method for common              |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                                       |            |
| Number of occupied stations           |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                                         |            |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |            |
|                                       | Current                                      | 65mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                           |            |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                               |            |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                     |            |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                    |            |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                                 |            |
| Weight                                |                                              | 0.25kg                                                                                                                                                                                                                                                                                               |            |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                          |            |
|                                       | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                       |            |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                               |            |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                    |            |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>• RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |            |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                               |            |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                         |            |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                        |            |

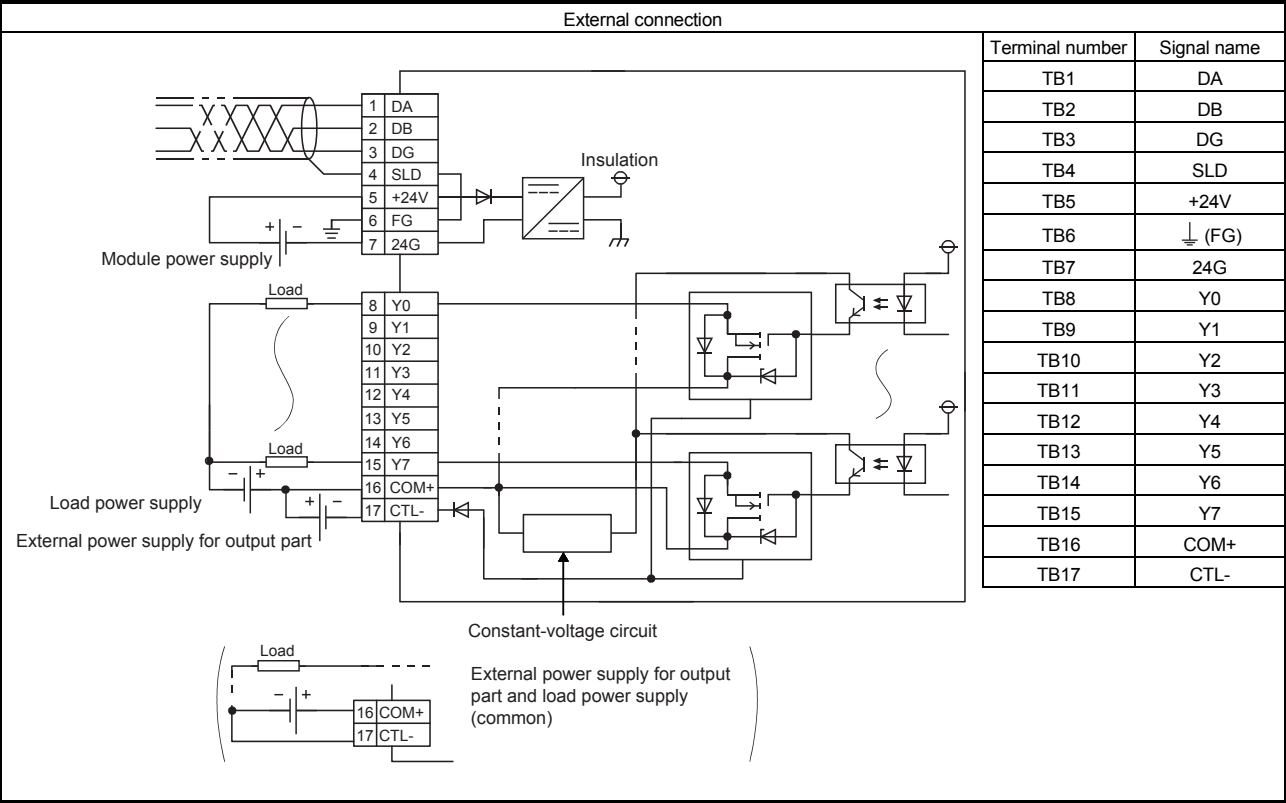
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 5.1.11 AJ65SBTB1-8TE transistor output module (source type)

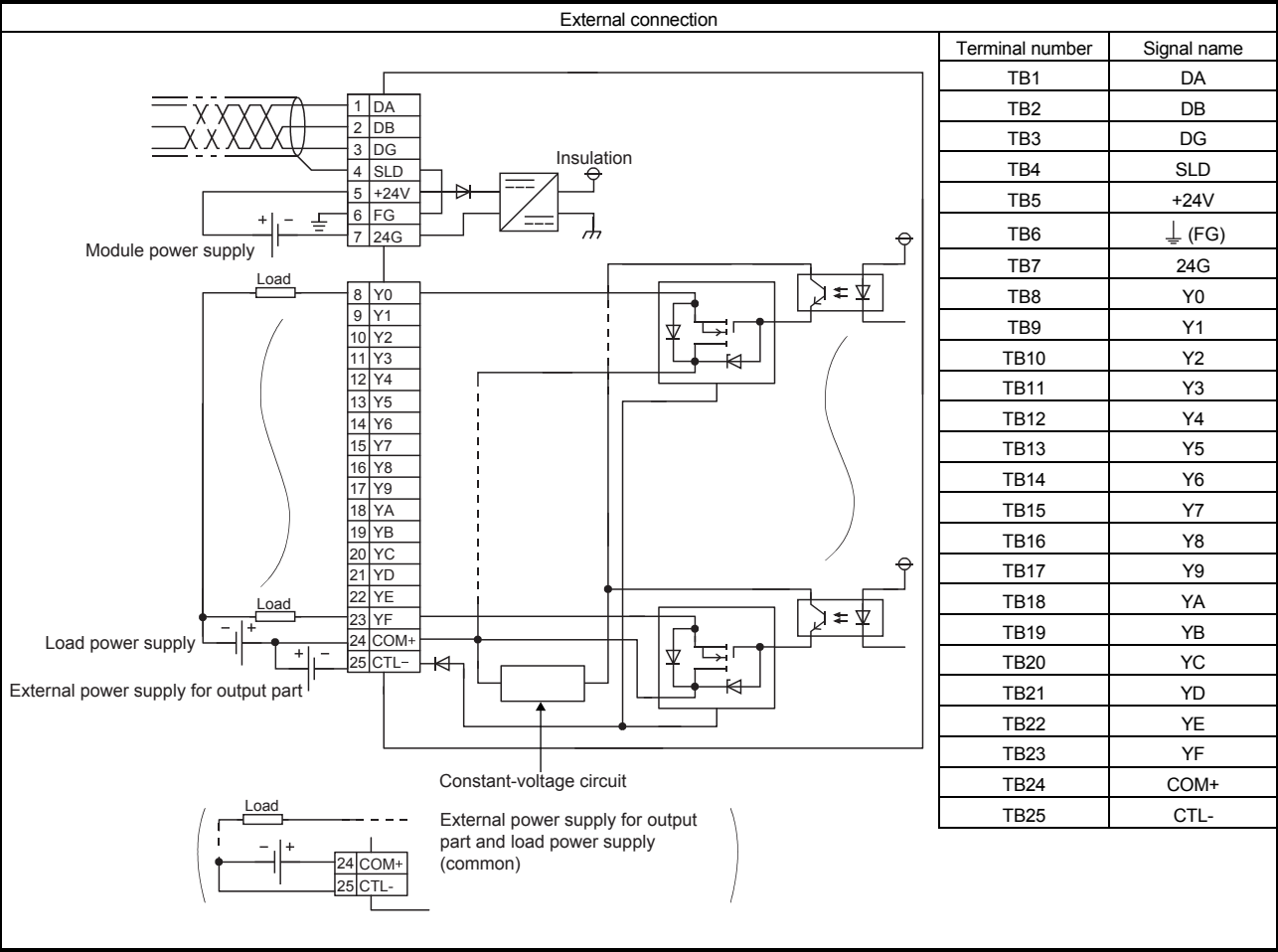
| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                             |                                                                                      |
|---------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                              | AJ65SBTB1-8TE                                                                                                                                                                                                                                                                                        | Appearance                                                                           |
| Number of output points               |                                              | 8 points                                                                                                                                                                                                                                                                                             |  |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                         |                                                                                      |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                             |                                                                                      |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
| Max. load current                     |                                              | 0.1A/point, 0.8A/common                                                                                                                                                                                                                                                                              |                                                                                      |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                                   |                                                                                      |
| Leakage current at OFF                |                                              | 0.1mA or lower                                                                                                                                                                                                                                                                                       |                                                                                      |
| Max. voltage drop at ON               |                                              | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A                                                                                                                                                                                                                                             |                                                                                      |
| Output type                           |                                              | Source type                                                                                                                                                                                                                                                                                          |                                                                                      |
| Protection function                   |                                              | Overload protection, overheat protection                                                                                                                                                                                                                                                             |                                                                                      |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                        |                                                                                      |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                       |                                                                                      |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 15mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                                   |                                                                                      |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                          |                                                                                      |
| Wiring method for common              |                                              | 8 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                                        |                                                                                      |
| Number of occupied stations           |                                              | 32-point assignment/station (8 points used)                                                                                                                                                                                                                                                          |                                                                                      |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                           |                                                                                      |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                               |                                                                                      |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                     |                                                                                      |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                    |                                                                                      |
| Weight                                |                                              | 0.14kg                                                                                                                                                                                                                                                                                               |                                                                                      |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                          |                                                                                      |
|                                       | I/O power supply part, I/O part              | 10-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                       |                                                                                      |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                                  |                                                                                      |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                    |                                                                                      |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>• RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                               |                                                                                      |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                         |                                                                                      |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                        |                                                                                      |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

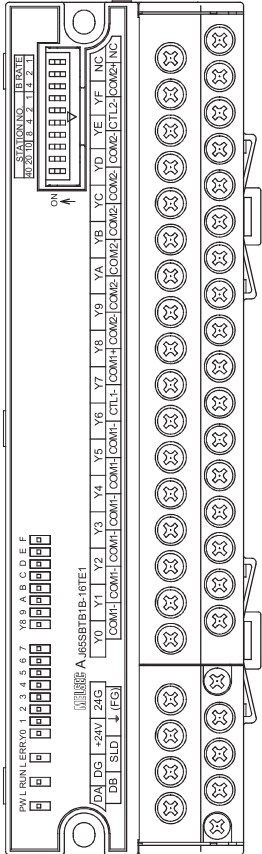


| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                     |  | Appearance |
|---------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------|
|                                       |                                              | AJ65SBTB1-16TE                                                                                                                                                                                                                               |  |            |
| Number of output points               |                                              | 16 points                                                                                                                                                                                                                                    |  |            |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                 |  |            |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                     |  |            |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |            |
| Max. load current                     |                                              | 0.1A/point, 1.6A/common                                                                                                                                                                                                                      |  |            |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                           |  |            |
| Leakage current at OFF                |                                              | 0.1mA or lower                                                                                                                                                                                                                               |  |            |
| Max. voltage drop at ON               |                                              | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A                                                                                                                                                                                     |  |            |
| Output type                           |                                              | Source type                                                                                                                                                                                                                                  |  |            |
| Protection function                   |                                              | Overload protection, overheat protection                                                                                                                                                                                                     |  |            |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                |  |            |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                               |  |            |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |            |
|                                       | Current                                      | 30mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                           |  |            |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                  |  |            |
| Wiring method for common              |                                              | 16 points/common (1-wire, terminal block type )                                                                                                                                                                                              |  |            |
| Number of occupied stations           |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |  |            |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |            |
|                                       | Current                                      | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |  |            |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |  |            |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |  |            |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |  |            |
| Weight                                |                                              | 0.18kg                                                                                                                                                                                                                                       |  |            |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                  |  |            |
|                                       | I/O power supply part, I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                               |  |            |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                       |  |            |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |  |            |
| Applicable solderless terminal        |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |  |            |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                       |  |            |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |  |            |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                |  |            |

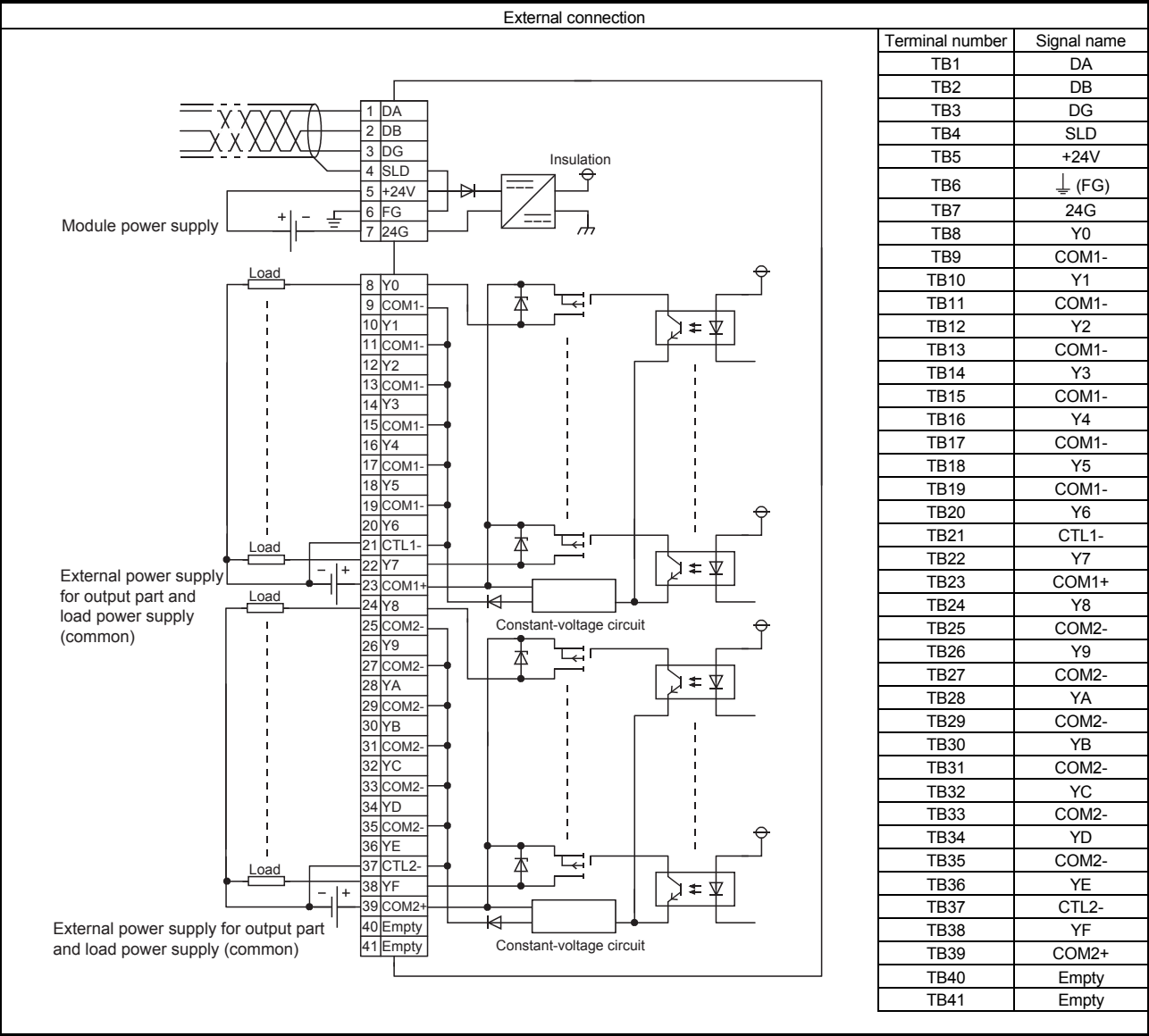
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## 5.1.13 AJ65SBTB1B-16TE1 transistor output module (source type)

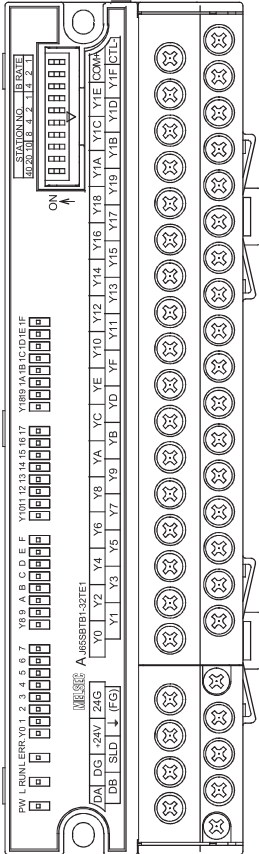
| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                             |                                                                                      |
|---------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                              | AJ65SBTB1B-16TE1                                                                                                                                                                                                                                                                                     | Appearance                                                                           |
| Number of output points               |                                              | 16 points                                                                                                                                                                                                                                                                                            |  |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                         |                                                                                      |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                             |                                                                                      |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
| Max. load current                     |                                              | 0.5A/point, 4A/common                                                                                                                                                                                                                                                                                |                                                                                      |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                                   |                                                                                      |
| Leakage current at OFF                |                                              | 0.1mA or lower                                                                                                                                                                                                                                                                                       |                                                                                      |
| Max. voltage drop at ON               |                                              | 0.5VDC or lower (TYP.) 0.5A, 0.8VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                             |                                                                                      |
| Output type                           |                                              | Source type                                                                                                                                                                                                                                                                                          |                                                                                      |
| Protection function                   |                                              | None                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                        |                                                                                      |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                       |                                                                                      |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 10mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                                   |                                                                                      |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                          |                                                                                      |
| Wiring method for common              |                                              | 8 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                                        |                                                                                      |
| Number of occupied stations           |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                                                                         |                                                                                      |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                           |                                                                                      |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                               |                                                                                      |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                     |                                                                                      |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                    |                                                                                      |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Weight                                |                                              | 0.26kg                                                                                                                                                                                                                                                                                               |                                                                                      |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                          |                                                                                      |
|                                       | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                       |                                                                                      |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                                  |                                                                                      |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                    |                                                                                      |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>• RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                               |                                                                                      |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                         |                                                                                      |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                        |                                                                                      |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

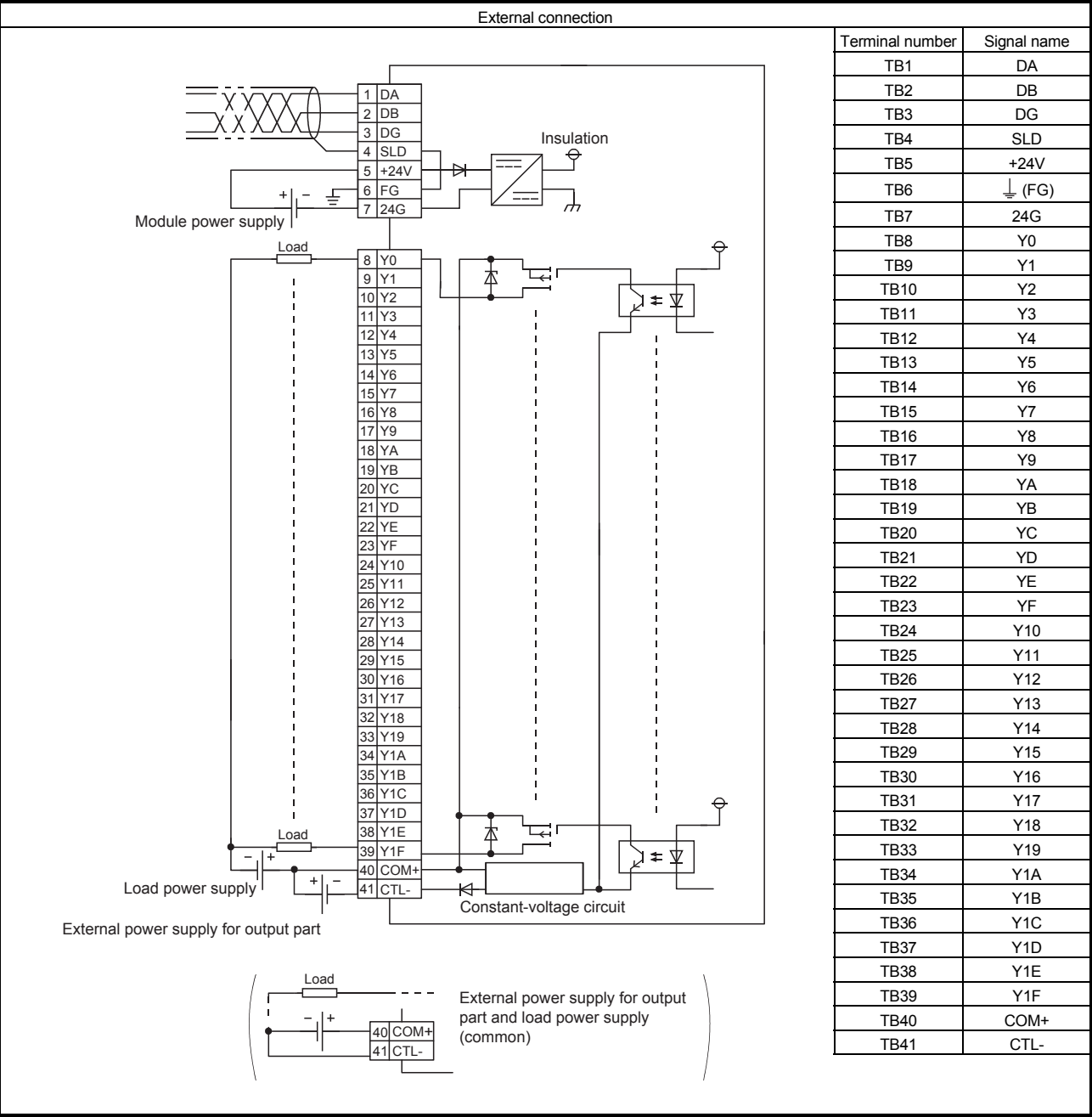




## 5.1.14 AJ65SBTB1-32TE1 transistor output module (source type)

| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                                             | Appearance                                                                           |
|---------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                              | AJ65SBTB1-32TE1                                                                                                                                                                                                                                                                                      |                                                                                      |
| Number of output points               |                                              | 32 points                                                                                                                                                                                                                                                                                            |  |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                         |                                                                                      |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                             |                                                                                      |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
| Max. load current                     |                                              | 0.5A/point, 4.8A/common                                                                                                                                                                                                                                                                              |                                                                                      |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                                   |                                                                                      |
| Leakage current at OFF                |                                              | 0.1mA or lower                                                                                                                                                                                                                                                                                       |                                                                                      |
| Max. voltage drop at ON               |                                              | 0.5VDC or lower (TYP.) 0.5A, 0.8VDC or lower (MAX.) 0.5A                                                                                                                                                                                                                                             |                                                                                      |
| Output type                           |                                              | Source type                                                                                                                                                                                                                                                                                          |                                                                                      |
| Protection function                   |                                              | None                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                        |                                                                                      |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                                       |                                                                                      |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 15mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                                   |                                                                                      |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                                          |                                                                                      |
| Wiring method for common              |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                                       |                                                                                      |
| Number of occupied stations           |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                                         |                                                                                      |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                            |                                                                                      |
|                                       | Current                                      | 60mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                           |                                                                                      |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                               |                                                                                      |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                     |                                                                                      |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                    |                                                                                      |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                                                 |                                                                                      |
| Weight                                |                                              | 0.26kg                                                                                                                                                                                                                                                                                               |                                                                                      |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                          |                                                                                      |
|                                       | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                       |                                                                                      |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                                  |                                                                                      |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                    |                                                                                      |
| Applicable solderless terminal        |                                              | <ul style="list-style-type: none"> <li>• RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                                                                                      |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                               |                                                                                      |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                         |                                                                                      |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                                        |                                                                                      |

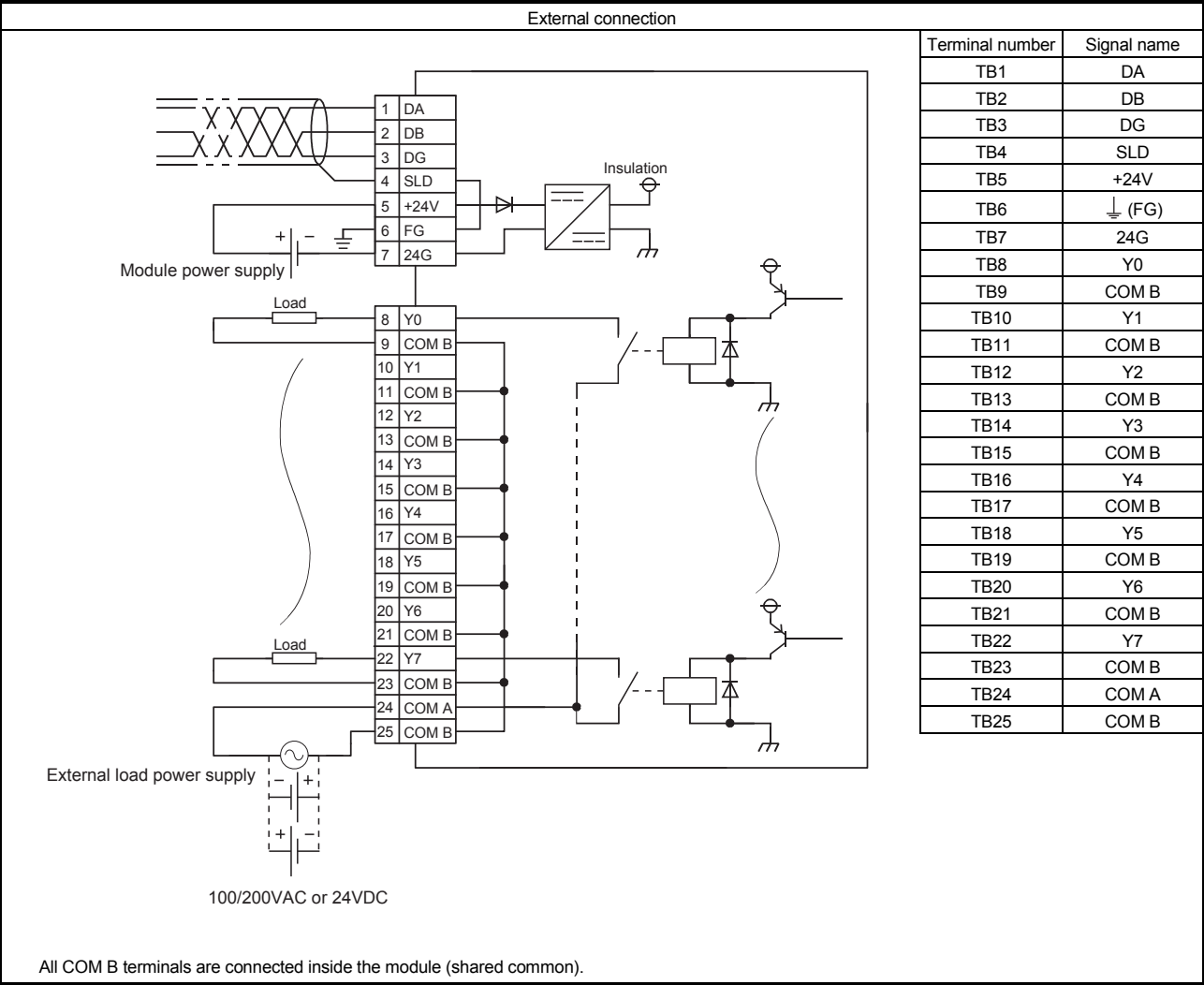
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 5.1.15 AJ65SBTB2N-8R contact output module

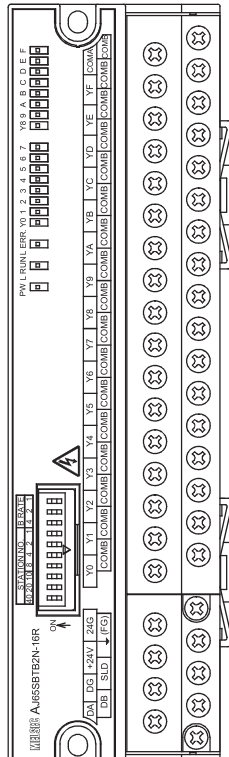
| Type                           |                                                 | Contact output module                                                                                                                                                                       |            |
|--------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Item                           |                                                 | AJ65SBTB2N-8R                                                                                                                                                                               | Appearance |
| Number of output points        |                                                 | 8 points                                                                                                                                                                                    |            |
| Isolation method               |                                                 | Relay                                                                                                                                                                                       |            |
| Rated load voltage/current     |                                                 | 2A/point, 4A/common<br>at 24VDC (resistive load) or 240VAC (cosφ=1)                                                                                                                         |            |
| Min. switching load            |                                                 | 5VDC, 1mA                                                                                                                                                                                   |            |
| Max. switching voltage         |                                                 | 264VAC, 125VDC                                                                                                                                                                              |            |
| Response time                  | OFF→ON                                          | 10ms or less                                                                                                                                                                                |            |
|                                | ON→OFF                                          | 12ms or less                                                                                                                                                                                |            |
| Life                           | Mechanical                                      | 20 million times or more                                                                                                                                                                    |            |
|                                | Electrical                                      | Rated switching voltage/current load: 100 thousand times or more                                                                                                                            |            |
|                                |                                                 | 200VAC 1.5A, 240VAC 1A (cosφ=0.7): 100 thousand times or more                                                                                                                               |            |
|                                |                                                 | 200VAC 1A, 240VAC 0.5A (cosφ=0.35): 100 thousand times or more                                                                                                                              |            |
|                                |                                                 | 24VDC 1A, 100VDC 0.1A (L/R=7ms): 100 thousand times or more                                                                                                                                 |            |
| Max. switching frequency       |                                                 | 3600 times/hour                                                                                                                                                                             |            |
| Surge suppressor               |                                                 | None                                                                                                                                                                                        |            |
| Wiring method for common       |                                                 | 8 points/common (2-wire, terminal block type)                                                                                                                                               |            |
| Number of occupied stations    |                                                 | 32-point assignment/station (8 points used)                                                                                                                                                 |            |
| Module power supply            | Voltage                                         | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                   |            |
|                                | Current                                         | 85mA or lower (at 24VDC and all points ON)                                                                                                                                                  |            |
| Noise immunity                 |                                                 | Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1μs,<br>noise frequency 25 to 60Hz (noise simulator condition)<br>Fast transient/burst immunity test<br>IEC61000-4-4:1kV  |            |
| Withstand voltage              |                                                 | 2830VACrms for 3 cycles between all AC external terminals and ground<br>(2000m above sea level)<br>500VAC for 1 minute between all DC external terminals and ground                         |            |
| Insulation resistance          |                                                 | 10MΩ or higher between all AC external terminals and ground (500VDC<br>insulation resistance tester)                                                                                        |            |
|                                |                                                 | 10MΩ or higher between all DC external terminals and ground (500VDC<br>insulation resistance tester)                                                                                        |            |
| Weight                         |                                                 | 0.25kg                                                                                                                                                                                      |            |
| External connection system     | Communication part,<br>module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less |            |
|                                | I/O power supply part,<br>I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less              |            |
| Module mounting screw          |                                                 | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                      |            |
| Applicable DIN rail            |                                                 | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                           |            |
| Applicable solderless terminal |                                                 | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]                                                                  |            |
|                                |                                                 | • V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]                                                                              |            |
| Wire                           | Material                                        | Copper                                                                                                                                                                                      |            |
|                                | Temperature rating                              | 75°C or more                                                                                                                                                                                |            |
| Accessory                      |                                                 | User's manual                                                                                                                                                                               |            |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



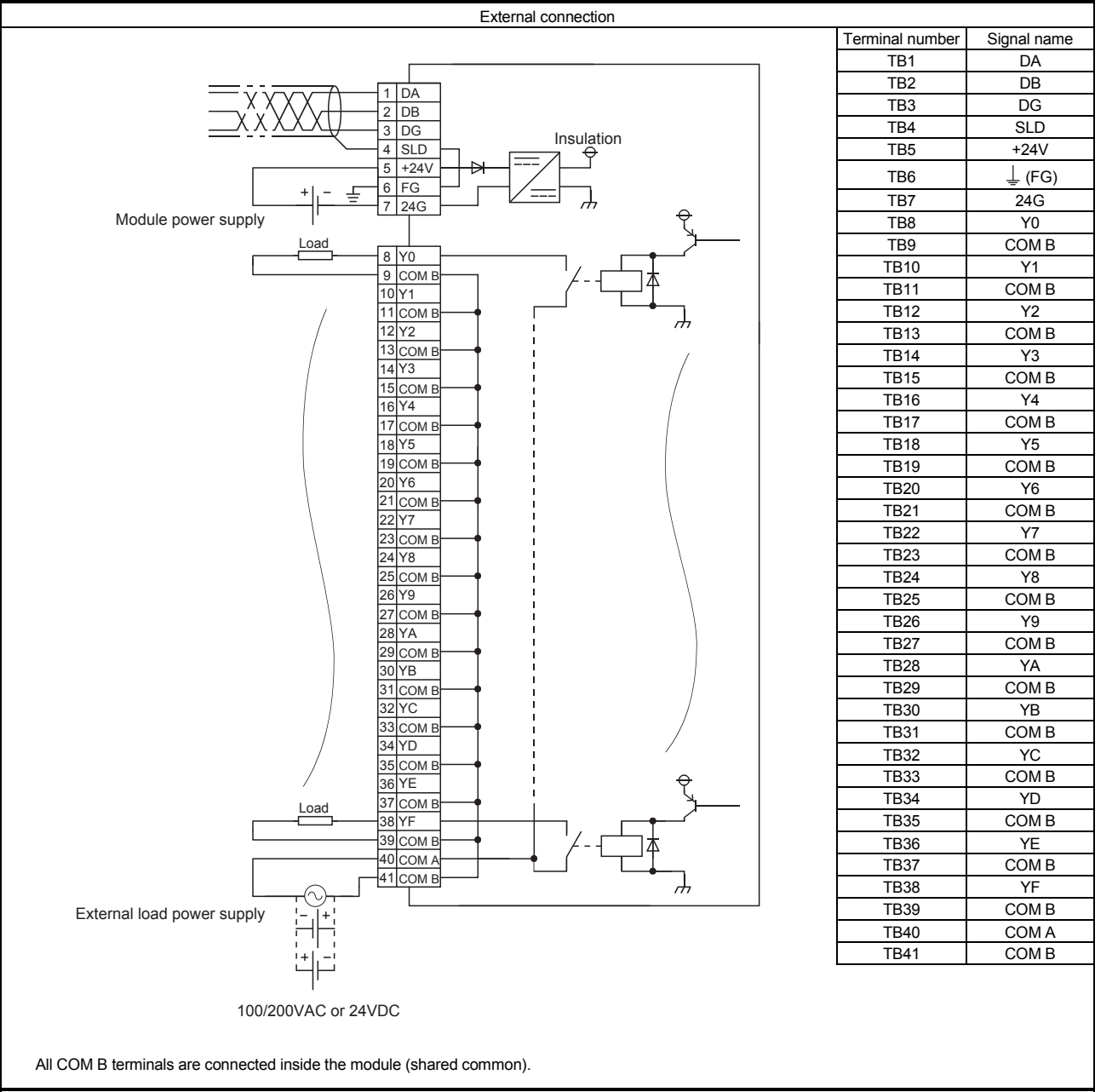
## 5.1.16 AJ65SBTB2N-16R contact output module

| Type                           |                                                 | Contact output module                                                                                                                                                                                                                        |  |
|--------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Item                           |                                                 | AJ65SBTB2N-16R                                                                                                                                                                                                                               |  |
| Number of output points        |                                                 | 16 points                                                                                                                                                                                                                                    |  |
| Isolation method               |                                                 | Relay                                                                                                                                                                                                                                        |  |
| Rated load voltage/current     |                                                 | 2A/point, 8A/common<br>at 24VDC (resistive load) or 240VAC (cosφ=1)                                                                                                                                                                          |  |
| Min. switching load            |                                                 | 5VDC, 1mA                                                                                                                                                                                                                                    |  |
| Max. switching voltage         |                                                 | 264VAC, 125VDC                                                                                                                                                                                                                               |  |
| Response time                  | OFF→ON                                          | 10ms or less                                                                                                                                                                                                                                 |  |
|                                | ON→OFF                                          | 12ms or less                                                                                                                                                                                                                                 |  |
| Life                           | Mechanical                                      | 20 million times or more                                                                                                                                                                                                                     |  |
|                                | Electrical                                      | Rated switching voltage/current load: 100 thousand times or more                                                                                                                                                                             |  |
|                                |                                                 | 200VAC 1.5A, 240VAC 1A (cosφ=0.7): 100 thousand times or more                                                                                                                                                                                |  |
|                                |                                                 | 200VAC 1A, 240VAC 0.5A (cosφ=0.35): 100 thousand times or more                                                                                                                                                                               |  |
|                                |                                                 | 24VDC 1A, 100VDC 0.1A (L/R=7ms): 100 thousand times or more                                                                                                                                                                                  |  |
| Max. switching frequency       |                                                 | 3600 times/hour                                                                                                                                                                                                                              |  |
| Surge suppressor               |                                                 | None                                                                                                                                                                                                                                         |  |
| Wiring method for common       |                                                 | 16 points/common (2-wire, terminal block type)                                                                                                                                                                                               |  |
| Number of occupied stations    |                                                 | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |  |
| Module power supply            | Voltage                                         | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |
|                                | Current                                         | 120mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                  |  |
| Noise immunity                 |                                                 | Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1μs,<br>noise frequency 25 to 60Hz (noise simulator condition)<br>Fast transient/burst immunity test<br>IEC 61000-4-4:1kV                                                  |  |
| Withstand voltage              |                                                 | 2830VACrms for 3 cycles between all AC external terminals and ground (2000m<br>above sea level)<br>500VAC for 1 minute between all DC external terminals and ground                                                                          |  |
| Insulation resistance          |                                                 | 10MΩ or higher between all AC external terminals and ground (500VDC insulation<br>resistance tester)<br>10MΩ or higher between all DC external terminals and ground (500VDC insulation<br>resistance tester)                                 |  |
| Weight                         |                                                 | 0.35kg                                                                                                                                                                                                                                       |  |
| External connection system     | Communication part,<br>module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                  |  |
|                                | I/O power supply part,<br>I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                               |  |
| Module mounting screw          |                                                 | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                       |  |
| Applicable DIN rail            |                                                 | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |  |
| Applicable solderless terminal |                                                 | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |  |
| Wire                           | Material                                        | Copper                                                                                                                                                                                                                                       |  |
|                                | Temperature rating                              | 75°C or more                                                                                                                                                                                                                                 |  |
| Accessory                      |                                                 | User's manual                                                                                                                                                                                                                                |  |



The diagram illustrates the AJ65SBTB2N-16R contact output module. It features a 34-point direct-mount terminal block on the left, organized into two rows of 17 terminals each. The top row is labeled with terminals 1 through 16, and the bottom row is labeled with terminals 17 through 34. The terminals are arranged in a 2x16 grid. The module is shown mounted on a DIN rail, with a label indicating the model number AJ65SBTB2N-16R. The diagram also shows the module's dimensions and the location of the mounting screw.

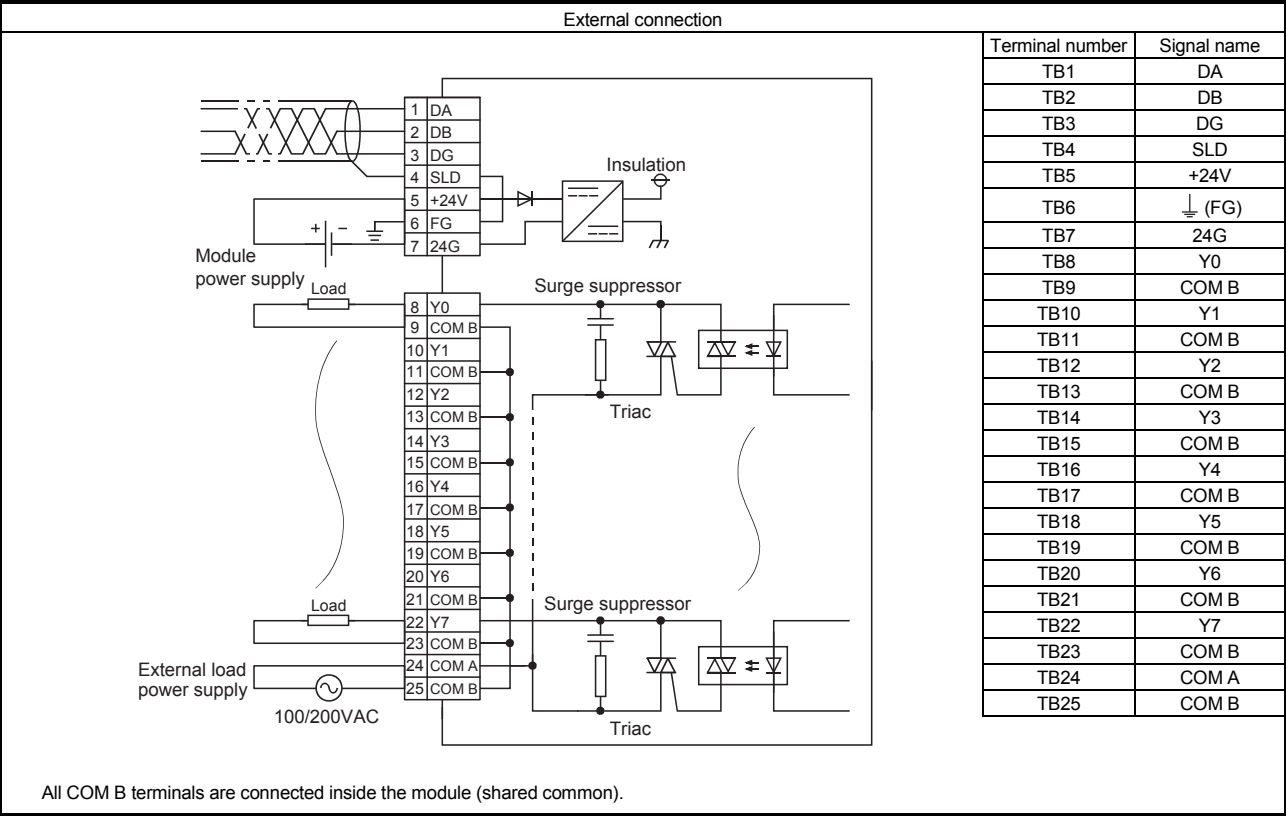
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



| Item                           |                                                 | Type                                                                                                                                                                                                                                                                                             | Triac output module |            |
|--------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|
|                                |                                                 |                                                                                                                                                                                                                                                                                                  | AJ65SBTB2N-8S       | Appearance |
| Number of output points        |                                                 | 8 points                                                                                                                                                                                                                                                                                         |                     |            |
| Isolation method               |                                                 | Photocoupler                                                                                                                                                                                                                                                                                     |                     |            |
| Rated load voltage             |                                                 | 100 to 240VAC, 50/60Hz ±5%                                                                                                                                                                                                                                                                       |                     |            |
| Load voltage distortion ratio  |                                                 | Within 5%                                                                                                                                                                                                                                                                                        |                     |            |
| Max. load voltage              |                                                 | 264VAC                                                                                                                                                                                                                                                                                           |                     |            |
| Max. load current              |                                                 | 0.6A/point, 2.4A/common                                                                                                                                                                                                                                                                          |                     |            |
| Min. load voltage/current      |                                                 | 50VAC 100mA, 100VAC 10mA, 240VAC 10mA                                                                                                                                                                                                                                                            |                     |            |
| Max. inrush current            |                                                 | 25A, 10ms or less                                                                                                                                                                                                                                                                                |                     |            |
| Leakage current at OFF         |                                                 | 1.5mA <sub>rms</sub> or lower (at 100VAC <sub>rms</sub> , 60Hz),<br>3mA <sub>rms</sub> or lower (at 200VAC <sub>rms</sub> , 60Hz)                                                                                                                                                                |                     |            |
| Max. voltage drop at ON        |                                                 | 1.5VAC <sub>rms</sub> or lower (at 0.6A)                                                                                                                                                                                                                                                         |                     |            |
| Response time                  | OFF→ON                                          | 1ms or less                                                                                                                                                                                                                                                                                      |                     |            |
|                                | ON→OFF                                          | Total of 1ms and 0.5 cycles or less                                                                                                                                                                                                                                                              |                     |            |
| Surge suppressor               |                                                 | CR absorber (0.01μF + 47Ω)                                                                                                                                                                                                                                                                       |                     |            |
| Wiring method for common       |                                                 | 8 points/common (2-wire, terminal block type)                                                                                                                                                                                                                                                    |                     |            |
| Number of occupied stations    |                                                 | 32-point assignment/station (8 points used)                                                                                                                                                                                                                                                      |                     |            |
| Module power supply            | Voltage                                         | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                        |                     |            |
|                                | Current                                         | 55mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                       |                     |            |
| Noise immunity                 |                                                 | Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1μs,<br>noise frequency 25 to 60Hz (noise simulator condition)<br>Fast transient/burst immunity test<br>IEC61000-4-4:1kV                                                                                                       |                     |            |
| Withstand voltage              |                                                 | 2830VAC <sub>rms</sub> for 3 cycles between all AC external terminals and ground<br>(2000m above sea level)<br>500VAC for 1 minute between all DC external terminals and ground                                                                                                                  |                     |            |
| Insulation resistance          |                                                 | 10MΩ or higher between all AC external terminals and ground (500VDC<br>insulation resistance tester)<br>10MΩ or higher between all DC external terminals and ground (500VDC<br>insulation resistance tester)                                                                                     |                     |            |
| Weight                         |                                                 | 0.25kg                                                                                                                                                                                                                                                                                           |                     |            |
| External connection system     | Communication part,<br>module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                                                      |                     |            |
|                                | I/O power supply part,<br>I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                                                                   |                     |            |
| Module mounting screw          |                                                 | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                           |                     |            |
| Applicable DIN rail            |                                                 | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                                |                     |            |
| Applicable solderless terminal |                                                 | <ul style="list-style-type: none"> <li>RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |                     |            |
| Wire                           | Material                                        | Copper                                                                                                                                                                                                                                                                                           |                     |            |
|                                | Temperature rating                              | 75°C or more                                                                                                                                                                                                                                                                                     |                     |            |
| Accessory                      |                                                 | User's manual                                                                                                                                                                                                                                                                                    |                     |            |

The diagram illustrates the AJ65SBTB2N-8S module, a triac output module. It shows the module's profile with a DIN rail on the left for mounting. The terminal block on the right is divided into two sections: a 7-point section for communication and power supply, and an 18-point section for I/O power supply and I/O signals. The 7-point section includes terminals for PH, L, N, L, ER, Y0, Y1, Y2, Y3, Y4, Y5, Y6, Y7, COMA, COMB, COME, and COMF. The 18-point section includes terminals for DA, DG, +24V, 24G, DB, SLD, and FG. The module is shown in a side view, highlighting its compact design and mounting features.

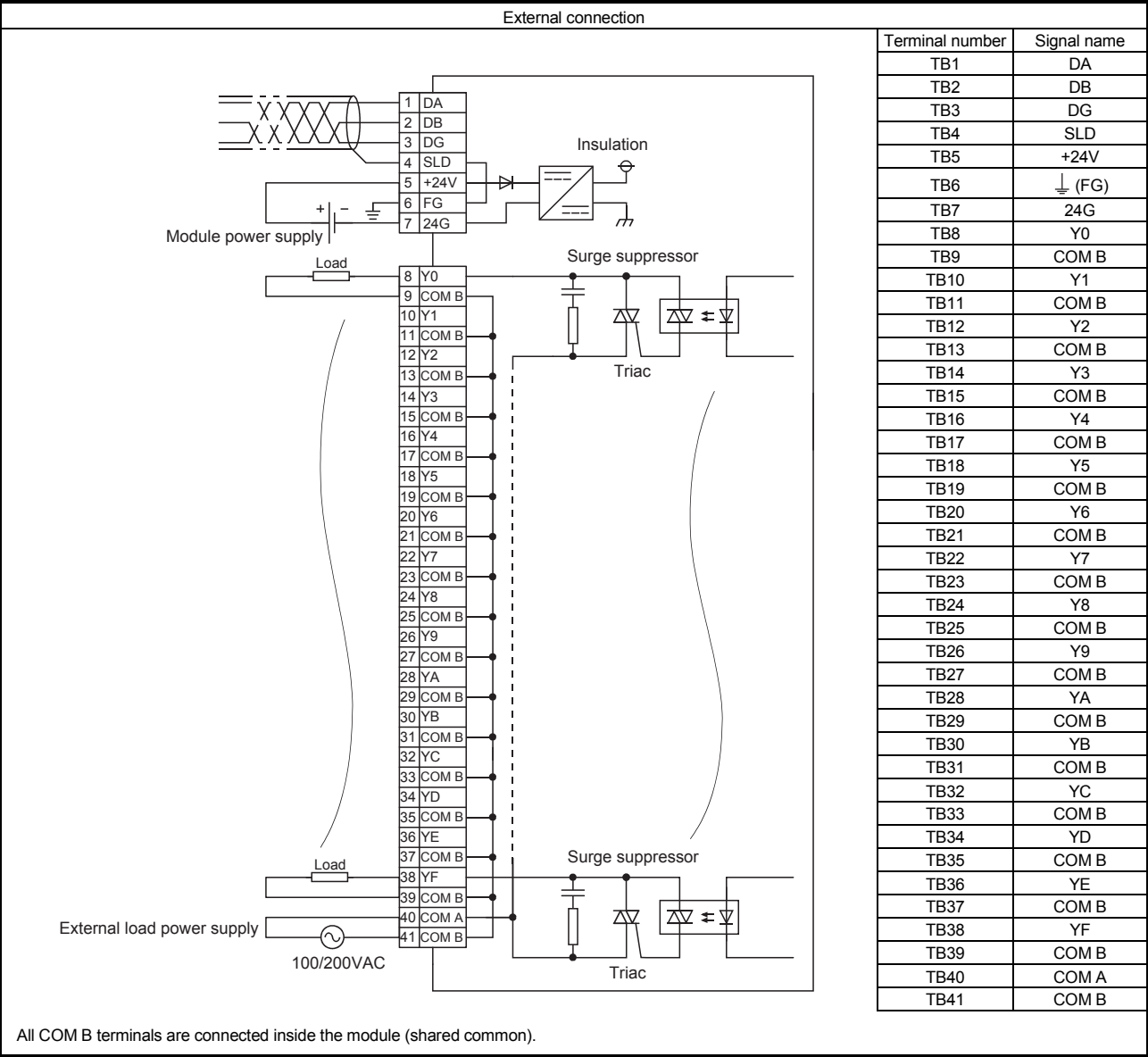
5 - 33



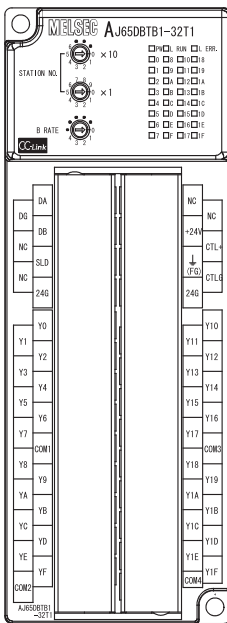


| Item                    |  | Type           | Triac output module | Appearance |
|-------------------------|--|----------------|---------------------|------------|
|                         |  | AJ65SBTB2N-16S |                     |            |
| Number of output points |  | 16 points      |                     |            |

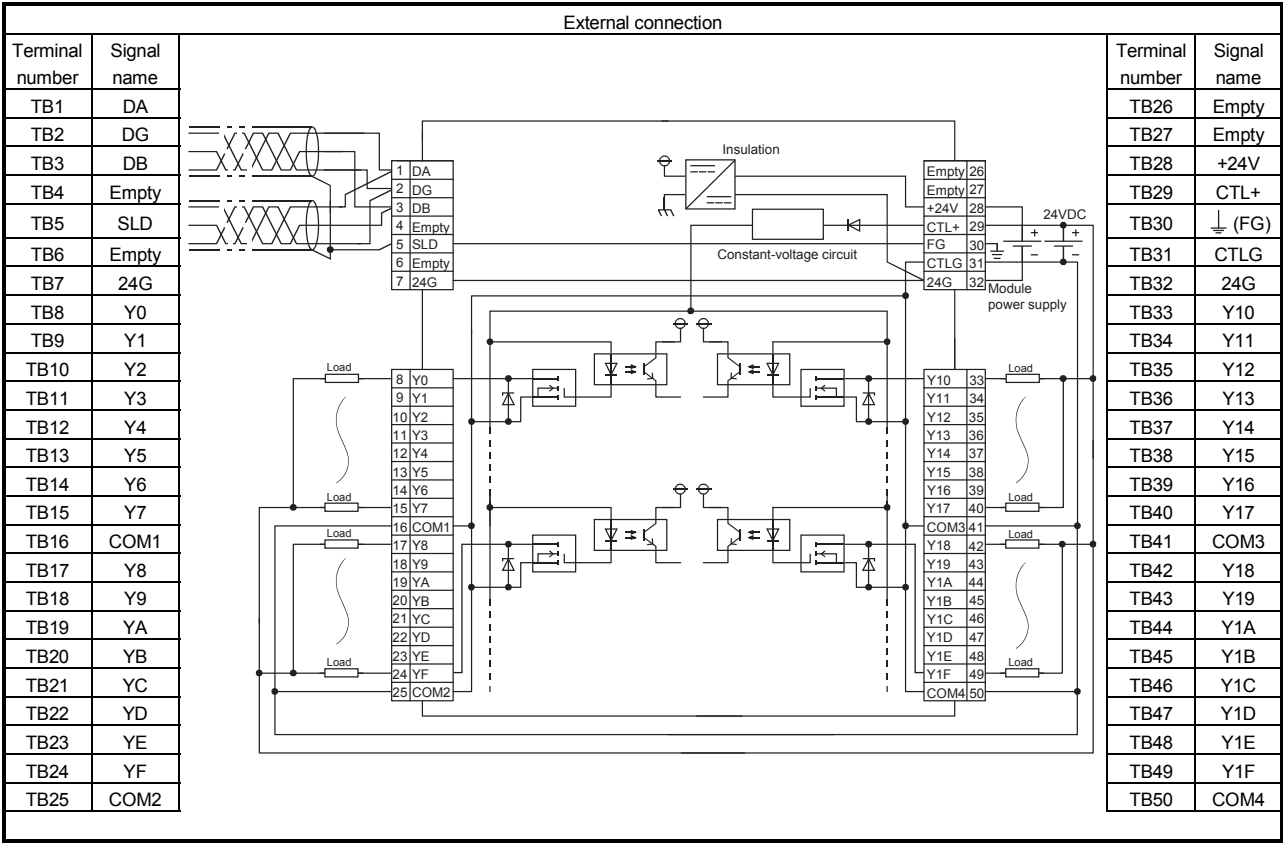
5 - 35



## 5.1.19 AJ65DBTB1-32T1 transistor output module (sink type)

| Type                                  |                    | Transistor output module                                                                                                   |  | Appearance                                                                           |
|---------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|
| Item                                  |                    | AJ65DBTB1-32T1                                                                                                             |  |                                                                                      |
| Number of output points               |                    | 32 points                                                                                                                  |  |  |
| Isolation method                      |                    | Photocoupler                                                                                                               |  |                                                                                      |
| Rated load voltage                    |                    | 12/24VDC                                                                                                                   |  |                                                                                      |
| Operating load voltage range          |                    | 10.2 to 31.2VDC (ripple ratio: within 5%)                                                                                  |  |                                                                                      |
| Max. load current                     |                    | 0.5A/point, 8A/common (2A/terminal)                                                                                        |  |                                                                                      |
| Max. inrush current                   |                    | 1.2A, 10ms or less                                                                                                         |  |                                                                                      |
| Leakage current at OFF                |                    | 0.1mA or lower                                                                                                             |  |                                                                                      |
| Max. voltage drop at ON               |                    | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                   |  |                                                                                      |
| Output type                           |                    | Sink type                                                                                                                  |  |                                                                                      |
| Protection function                   |                    | None                                                                                                                       |  |                                                                                      |
| Response time                         | OFF→ON             | 0.5ms or less                                                                                                              |  |                                                                                      |
|                                       | ON→OFF             | 1.5ms or less (resistive load)                                                                                             |  |                                                                                      |
| External power supply for output part | Voltage            | 10.2 to 31.2VDC (ripple ratio: within 5%)                                                                                  |  |                                                                                      |
|                                       | Current            | 50mA or lower (at 24VDC and all points ON), excluding external load current                                                |  |                                                                                      |
| Surge suppressor                      |                    | Zener diode                                                                                                                |  |                                                                                      |
| Wiring method for common              |                    | 32 points/common (4 points) (1-wire, terminal block type)                                                                  |  |                                                                                      |
| Number of occupied stations           |                    | 32-point assignment/station (32 points used)                                                                               |  |                                                                                      |
| Module power supply                   | Voltage            | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                  |  |                                                                                      |
|                                       | Current            | 65mA or lower (at 24VDC and all points ON)                                                                                 |  |                                                                                      |
| Noise immunity                        |                    | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                     |  |                                                                                      |
| Withstand voltage                     |                    | 500VAC for 1 minute between all DC external terminals and ground                                                           |  |                                                                                      |
| Insulation resistance                 |                    | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                          |  |                                                                                      |
| Protection degree                     |                    | IP2X                                                                                                                       |  |                                                                                      |
| Weight                                |                    | 0.7kg                                                                                                                      |  |                                                                                      |
| External connection system            |                    | 50-point terminal block                                                                                                    |  |                                                                                      |
|                                       |                    | [Transmission circuit, module power supply, FG, I/O power supply, I/O signal]                                              |  |                                                                                      |
|                                       |                    | M3×7 screw (tightening torque range: 0.68 to 0.92N•m)<br>Applicable solderless terminal: 2 or less                         |  |                                                                                      |
| Module mounting screw                 |                    | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)                                       |  |                                                                                      |
| Applicable solderless terminal        |                    | • R1.25-3.5 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire] |  |                                                                                      |
|                                       |                    | • RAV2-3.5 (compliant with JIS C 2805)<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]  |  |                                                                                      |
|                                       |                    |                                                                                                                            |  |                                                                                      |
| Wire                                  | Material           | Copper                                                                                                                     |  |                                                                                      |
|                                       | Temperature rating | 75°C or more                                                                                                               |  |                                                                                      |
| Accessory                             |                    | User's manual                                                                                                              |  |                                                                                      |
| Part sold separately                  |                    | A6DIN1C, A2CCOM-TB                                                                                                         |  |                                                                                      |

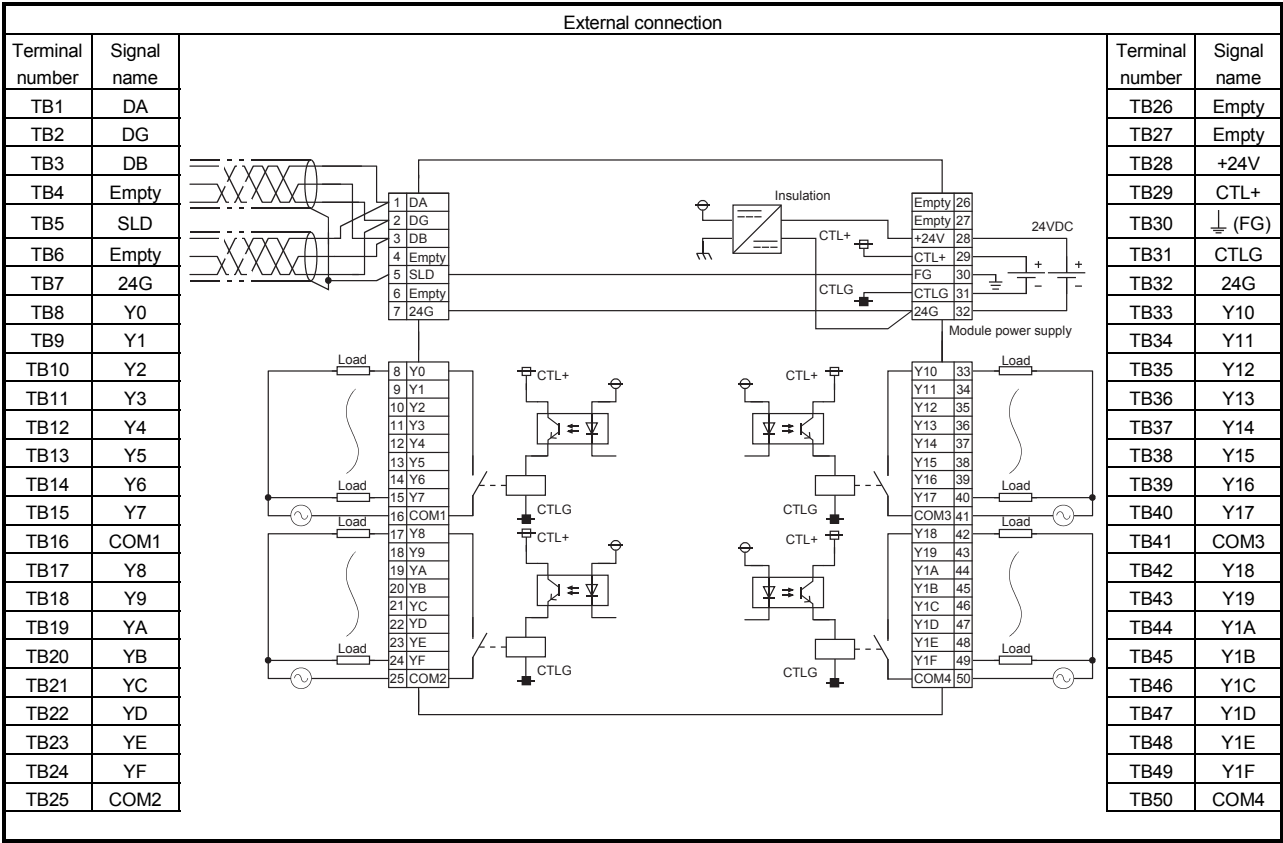
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 5.1.20 AJ65DBTB1-32R contact output module

| Type                                                            |                    | Contact output module                                                                                                                                                                                                                                              |            |
|-----------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Item                                                            |                    | AJ65DBTB1-32R                                                                                                                                                                                                                                                      | Appearance |
| Number of output points                                         |                    | 32 points                                                                                                                                                                                                                                                          |            |
| Isolation method                                                |                    | Photocoupler                                                                                                                                                                                                                                                       |            |
| Rated load voltage/current                                      |                    | 2A/point, 4A/common (2A/terminal)<br>at 24VDC (resistive load) or 240VAC (cosφ=1)                                                                                                                                                                                  |            |
| Min. switching load                                             |                    | 5VDC, 1mA                                                                                                                                                                                                                                                          |            |
| Max. switching voltage                                          |                    | 264VAC, 125VDC                                                                                                                                                                                                                                                     |            |
| Response time                                                   | OFF→ON             | 10ms or less                                                                                                                                                                                                                                                       |            |
|                                                                 | ON→OFF             | 12ms or less                                                                                                                                                                                                                                                       |            |
| Life                                                            | Mechanical         | 20 million times or more                                                                                                                                                                                                                                           |            |
|                                                                 | Electrical         | Rated switching voltage/current load: 100 thousand times or more<br>200VAC 1.5A, 240VAC 1A (cosφ=0.7): 100 thousand times or more<br>200VAC 1A, 240VAC 0.5A (cosφ=0.35): 100 thousand times or more<br>24VDC 1A, 100VDC 0.1A (L/R=7ms): 100 thousand times or more |            |
| Max. switching frequency                                        |                    | 3600 times/hour                                                                                                                                                                                                                                                    |            |
| Surge suppressor                                                |                    | None                                                                                                                                                                                                                                                               |            |
| External power supply for output part (CTL+ and CTLG terminals) | Voltage            | 24VDC ±10% (ripple ratio: 4Vp-p or lower)                                                                                                                                                                                                                          |            |
|                                                                 | Current            | 180mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                        |            |
| Wiring method for common                                        |                    | 8 points/common (1-wire, terminal block type)                                                                                                                                                                                                                      |            |
| Number of occupied stations                                     |                    | 32-point assignment/station (32 points used)                                                                                                                                                                                                                       |            |
| Module power supply                                             | Voltage            | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                          |            |
|                                                                 | Current            | 80mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                         |            |
| Noise immunity                                                  |                    | Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1μs, noise frequency 25 to 60Hz (noise simulator condition)                                                                                                                                      |            |
| Withstand voltage                                               |                    | 1500VAC for 1 minute between all AC external terminals and ground<br>500VAC for 1 minute between all DC external terminals and ground                                                                                                                              |            |
| Insulation resistance                                           |                    | 10MΩ or higher between all AC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                  |            |
|                                                                 |                    | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                  |            |
| Protection degree                                               |                    | IP1X                                                                                                                                                                                                                                                               |            |
| Weight                                                          |                    | 0.7kg                                                                                                                                                                                                                                                              |            |
| External connection system                                      |                    | 50-point terminal block                                                                                                                                                                                                                                            |            |
|                                                                 |                    | [Transmission circuit, module power supply, FG, I/O power supply, I/O signal]<br>M3.5×7 screw (tightening torque range: 0.68 to 0.92N•m)<br>Applicable solderless terminal: 2 or less                                                                              |            |
| Module mounting screw                                           |                    | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)                                                                                                                                                                               |            |
| Applicable solderless terminal                                  |                    | • R1.25-3.5 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]                                                                                                                                         |            |
|                                                                 |                    | • RAV2-3.5 (compliant with JIS C 2805)<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]                                                                                                                                          |            |
| Wire                                                            | Material           | Copper                                                                                                                                                                                                                                                             |            |
|                                                                 | Temperature rating | 75°C or more                                                                                                                                                                                                                                                       |            |
| Accessory                                                       |                    | User's manual                                                                                                                                                                                                                                                      |            |
| Part sold separately                                            |                    | A6DIN1C, A2CCOM-TB                                                                                                                                                                                                                                                 |            |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



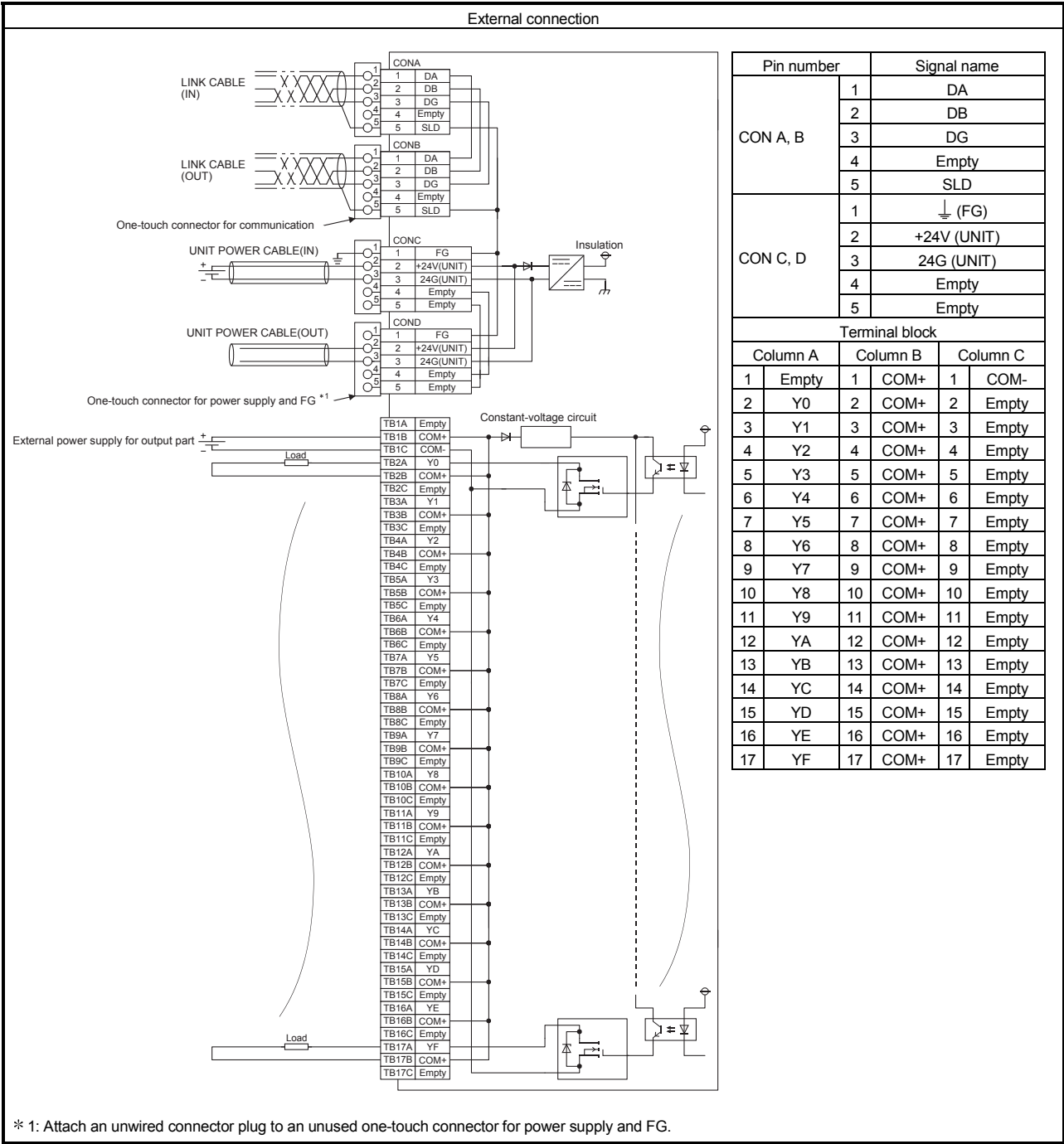
## 5.2 Spring Clamp Terminal Block Type Output Module

## 5.2.1 AJ65VBTS2-16T transistor output module (sink type)

| Type                                  |                                     | Transistor output module                                                                                                                                                                                                        |                                                                     | AJ65VBTS2-16T |  | Appearance |  |
|---------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------|--|------------|--|
| Item                                  |                                     |                                                                                                                                                                                                                                 |                                                                     |               |  |            |  |
| Number of output points               |                                     | 16 points                                                                                                                                                                                                                       |                                                                     |               |  |            |  |
| Isolation method                      |                                     | Photocoupler                                                                                                                                                                                                                    |                                                                     |               |  |            |  |
| Rated load voltage                    |                                     | 12/24VDC                                                                                                                                                                                                                        |                                                                     |               |  |            |  |
| Operating load voltage range          |                                     | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |                                                                     |               |  |            |  |
| Max. load current                     |                                     | 0.5A/point, 4A/common                                                                                                                                                                                                           |                                                                     |               |  |            |  |
| Max. inrush current                   |                                     | 1.0A, 10ms or less                                                                                                                                                                                                              |                                                                     |               |  |            |  |
| Leakage current at OFF                |                                     | 0.1mA or lower                                                                                                                                                                                                                  |                                                                     |               |  |            |  |
| Max. voltage drop at ON               |                                     | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                        |                                                                     |               |  |            |  |
| Output type                           |                                     | Sink type                                                                                                                                                                                                                       |                                                                     |               |  |            |  |
| Protection function                   |                                     | None                                                                                                                                                                                                                            |                                                                     |               |  |            |  |
| Response time                         | OFF→ON                              | 1ms or less                                                                                                                                                                                                                     |                                                                     |               |  |            |  |
|                                       | ON→OFF                              | 1ms or less (resistive load)                                                                                                                                                                                                    |                                                                     |               |  |            |  |
| External power supply for output part | Voltage                             | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |                                                                     |               |  |            |  |
|                                       | Current                             | 30mA or lower (at 24VDC and all points ON), excluding external load current                                                                                                                                                     |                                                                     |               |  |            |  |
| Surge suppressor                      |                                     | Zener diode                                                                                                                                                                                                                     |                                                                     |               |  |            |  |
| Wiring method for common              |                                     | 16 points/common (2-wire, spring clamp terminal block type)                                                                                                                                                                     |                                                                     |               |  |            |  |
| Number of occupied stations           |                                     | 32-point assignment/station (16 points used)                                                                                                                                                                                    |                                                                     |               |  |            |  |
| Module power supply                   | Voltage                             | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |                                                                     |               |  |            |  |
|                                       | Current                             | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                      |                                                                     |               |  |            |  |
| Noise immunity                        |                                     | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                          |                                                                     |               |  |            |  |
| Withstand voltage                     |                                     | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                |                                                                     |               |  |            |  |
| Insulation resistance                 |                                     | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                               |                                                                     |               |  |            |  |
| Protection degree                     |                                     | IP1XB                                                                                                                                                                                                                           |                                                                     |               |  |            |  |
| Weight                                |                                     | 0.24kg                                                                                                                                                                                                                          |                                                                     |               |  |            |  |
| External connection system            | Communication part                  | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                    |                                                                     |               |  |            |  |
|                                       |                                     | One-touch connector for power supply and FG [Module power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P                          |                                                                     |               |  |            |  |
|                                       | Power supply part                   |                                                                                                                                                                                                                                 |                                                                     |               |  |            |  |
|                                       |                                     | I/O part                                                                                                                                                                                                                        | 2-piece spring clamp terminal block [I/O power supply, I/O signals] |               |  |            |  |
| Applicable DIN rail                   |                                     | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                               |                                                                     |               |  |            |  |
| Applicable wire size                  | Connector for communication         | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                         |                                                                     |               |  |            |  |
|                                       | Connector for power supply and FG   | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                      |                                                                     |               |  |            |  |
|                                       | Spring clamp terminal block for I/O | Stranded wire 0.08 to 1.5mm <sup>2</sup> (28 to 16 AWG) * 1<br>Wire strip length: 8 to 11mm                                                                                                                                     |                                                                     |               |  |            |  |
|                                       | Applicable solderless terminal      | TE0.5 [Applicable wire size: 0.5mm <sup>2</sup> ]<br>TE0.75 [Applicable wire size: 0.75mm <sup>2</sup> ]<br>TE1 [Applicable wire size: 0.9 to 1.0mm <sup>2</sup> ]<br>TE1.5 [Applicable wire size: 1.25 to 1.5mm <sup>2</sup> ] |                                                                     |               |  |            |  |
| Accessory                             |                                     | User's manual, Holding fixtures for screw installation                                                                                                                                                                          |                                                                     |               |  |            |  |

The diagram illustrates the physical appearance of the AJ65VBTS2-16T module. It features a DIN rail on the left side for power and ground connections. The main terminal block on the right is organized into two rows of 16 points each, labeled Y0 to Y15. The top row includes common terminals (COM+) and common terminals (COM-). The bottom row includes common terminals (COM+) and common terminals (COM-). The module is shown with a screw terminal block for power supply and ground connection. The diagram also shows the module's dimensions and the location of the screw terminals.

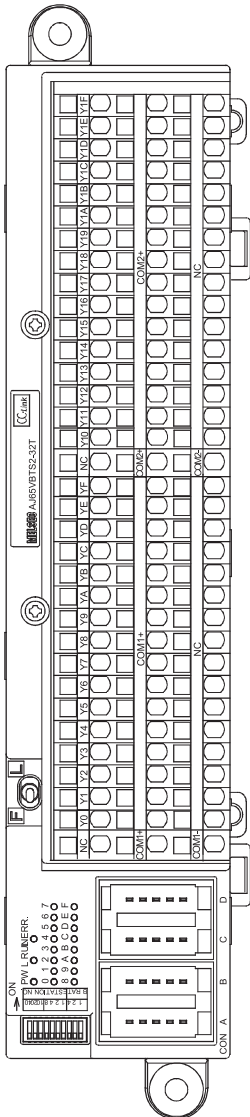
\* 1: Insert one wire per terminal.



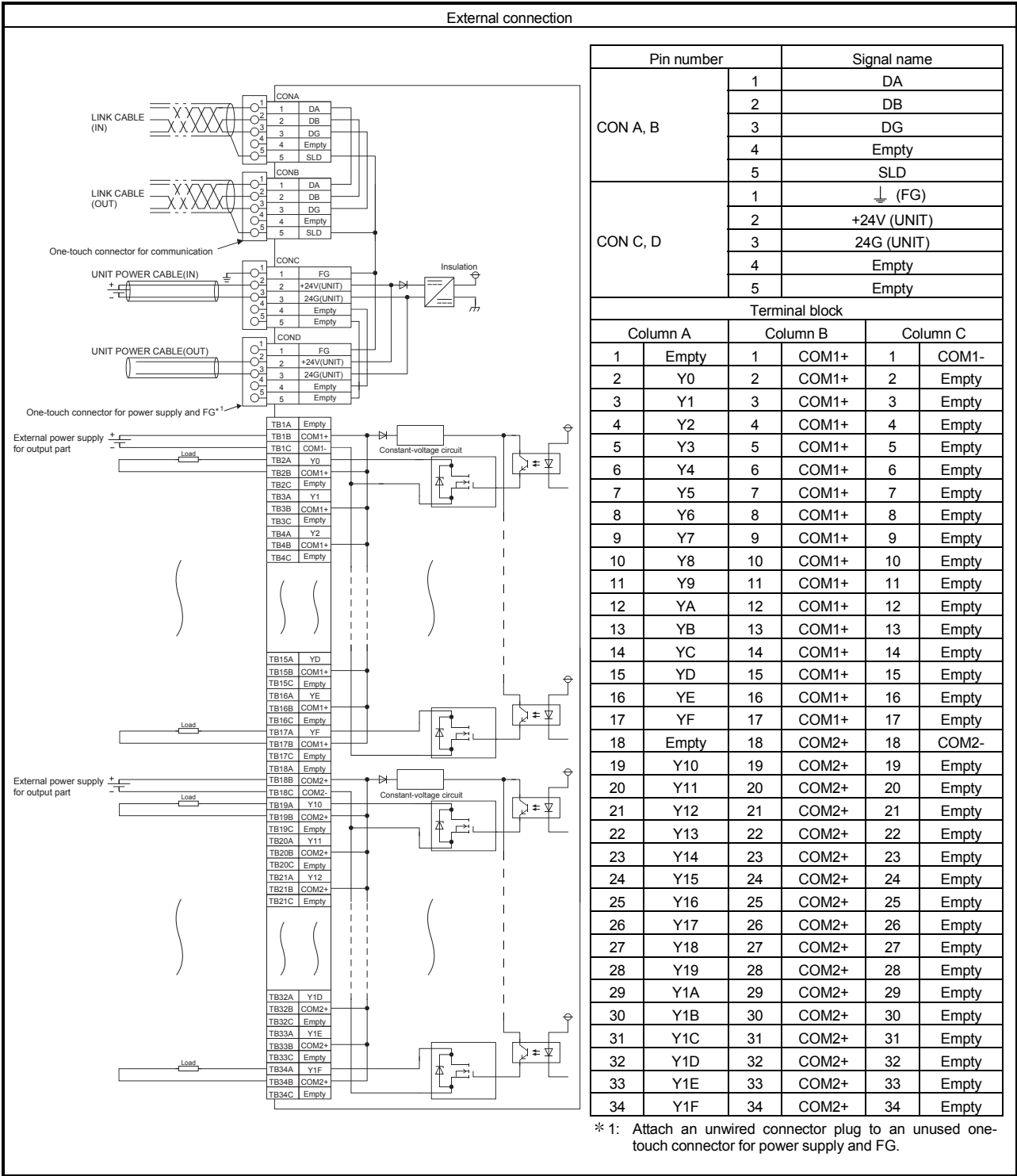




## 5.2.2 AJ65VBTS2-32T transistor output module (sink type)

| Type                                  |                                     | Transistor output module                                                                                                                                                                                                        | Appearance                                                                           |
|---------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                     | AJ65VBTS2-32T                                                                                                                                                                                                                   |                                                                                      |
| Number of output points               |                                     | 32 points                                                                                                                                                                                                                       |  |
| Isolation method                      |                                     | Photocoupler                                                                                                                                                                                                                    |                                                                                      |
| Rated load voltage                    |                                     | 12/24VDC                                                                                                                                                                                                                        |                                                                                      |
| Operating load voltage range          |                                     | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |                                                                                      |
| Max. load current                     |                                     | 0.5A/point, 4A/common                                                                                                                                                                                                           |                                                                                      |
| Max. inrush current                   |                                     | 1.0A, 10ms or less                                                                                                                                                                                                              |                                                                                      |
| Leakage current at OFF                |                                     | 0.1mA or lower                                                                                                                                                                                                                  |                                                                                      |
| Max. voltage drop at ON               |                                     | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                                                                                                        |                                                                                      |
| Output type                           |                                     | Sink type                                                                                                                                                                                                                       |                                                                                      |
| Protection function                   |                                     | None                                                                                                                                                                                                                            |                                                                                      |
| Response time                         | OFF→ON                              | 1ms or less                                                                                                                                                                                                                     |                                                                                      |
|                                       | ON→OFF                              | 1ms or less (resistive load)                                                                                                                                                                                                    |                                                                                      |
| External power supply for output part | Voltage                             | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |                                                                                      |
|                                       | Current                             | 30mA or lower (at 24VDC and all points ON), excluding external load current                                                                                                                                                     |                                                                                      |
| Surge suppressor                      |                                     | Zener diode                                                                                                                                                                                                                     |                                                                                      |
| Wiring method for common              |                                     | 16 points/common (2-wire, spring clamp terminal block type)                                                                                                                                                                     |                                                                                      |
| Number of occupied stations           |                                     | 32-point assignment/station (32 points used)                                                                                                                                                                                    |                                                                                      |
| Module power supply                   | Voltage                             | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |                                                                                      |
|                                       | Current                             | 60mA or lower (at 24VDC and all points ON)                                                                                                                                                                                      |                                                                                      |
| Noise immunity                        |                                     | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                          |                                                                                      |
| Withstand voltage                     |                                     | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                |                                                                                      |
| Insulation resistance                 |                                     | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                               |                                                                                      |
| Protection degree                     |                                     | IP1XB                                                                                                                                                                                                                           |                                                                                      |
| Weight                                |                                     | 0.40kg                                                                                                                                                                                                                          |                                                                                      |
| External connection system            | Communication part                  | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                    |                                                                                      |
|                                       | Power supply part                   | One-touch connector for power supply and FG [Module power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P                          |                                                                                      |
|                                       | I/O part                            | 2-piece spring clamp terminal block [I/O power supply, I/O signals]                                                                                                                                                             |                                                                                      |
| Applicable DIN rail                   |                                     | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                               |                                                                                      |
| Applicable wire size                  | Connector for communication         | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                         |                                                                                      |
|                                       | Connector for power supply and FG   | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                      |                                                                                      |
|                                       | Spring clamp terminal block for I/O | Stranded wire 0.08 to 1.5mm <sup>2</sup> (28 to 16 AWG) * 1<br>Wire strip length: 8 to 11mm                                                                                                                                     |                                                                                      |
|                                       | Applicable solderless terminal      | TE0.5 [Applicable wire size: 0.5mm <sup>2</sup> ]<br>TE0.75 [Applicable wire size: 0.75mm <sup>2</sup> ]<br>TE1 [Applicable wire size: 0.9 to 1.0mm <sup>2</sup> ]<br>TE1.5 [Applicable wire size: 1.25 to 1.5mm <sup>2</sup> ] |                                                                                      |
| Accessory                             |                                     | User's manual, Holding fixtures for screw installation                                                                                                                                                                          |                                                                                      |

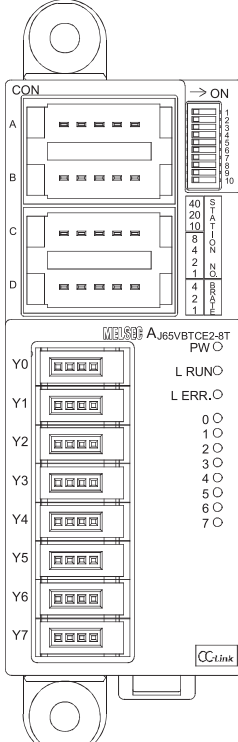
\* 1: Insert one wire per terminal.





## 5.3 Sensor Connector (e-CON) Type Output Module

## 5.3.1 AJ65VBTCE2-8T transistor output module (sink type)

| Type                                  |                                   | Transistor output module                                                                                                                                                                                                    | Appearance                                                                           |
|---------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                   | AJ65VBTCE2-8T                                                                                                                                                                                                               |                                                                                      |
| Number of output points               |                                   | 8 points                                                                                                                                                                                                                    |  |
| Isolation method                      |                                   | Photocoupler                                                                                                                                                                                                                |                                                                                      |
| Rated load voltage                    |                                   | 12/24VDC                                                                                                                                                                                                                    |                                                                                      |
| Operating load voltage range          |                                   | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
| Max. load current                     |                                   | 0.1A/point, 0.8A/common                                                                                                                                                                                                     |                                                                                      |
| Max. inrush current                   |                                   | 0.7A, 10ms or less                                                                                                                                                                                                          |                                                                                      |
| Leakage current at OFF                |                                   | 0.1mA or lower                                                                                                                                                                                                              |                                                                                      |
| Max. voltage drop at ON               |                                   | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A                                                                                                                                                                    |                                                                                      |
| Output type                           |                                   | Sink type                                                                                                                                                                                                                   |                                                                                      |
| Protection function                   |                                   | Overload protection, overvoltage protection, overheat protection                                                                                                                                                            |                                                                                      |
| Response time                         | OFF→ON                            | 1ms or less                                                                                                                                                                                                                 |                                                                                      |
|                                       | ON→OFF                            | 1ms or less (resistive load)                                                                                                                                                                                                |                                                                                      |
| External power supply for output part | Voltage                           | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
|                                       | Current                           | 5mA or lower (at 24VDC and all points ON), excluding external load current                                                                                                                                                  |                                                                                      |
| Surge suppressor                      |                                   | Zener diode                                                                                                                                                                                                                 |                                                                                      |
| Wiring method for common              |                                   | 8 points/common (2-wire, sensor connector (e-CON) type)                                                                                                                                                                     |                                                                                      |
| Number of occupied stations           |                                   | 32-point assignment/station (8 points used)                                                                                                                                                                                 |                                                                                      |
| Module power supply                   | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
|                                       | Current                           | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                  |                                                                                      |
| Noise immunity                        |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                      |                                                                                      |
| Withstand voltage                     |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                            |                                                                                      |
| Insulation resistance                 |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                           |                                                                                      |
| Protection degree                     |                                   | IP1XB                                                                                                                                                                                                                       |                                                                                      |
| Weight                                |                                   | 0.10kg                                                                                                                                                                                                                      |                                                                                      |
| External connection system            | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                |                                                                                      |
|                                       | Power supply part                 | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |                                                                                      |
|                                       | I/O part                          | Sensor connector (e-CON) [I/O signals]<br>4-pin IDC plug is sold separately. * 1                                                                                                                                            |                                                                                      |
| Applicable DIN rail                   |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                           |                                                                                      |
| Applicable wire size                  | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                     |                                                                                      |
|                                       | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                  |                                                                                      |
|                                       | Connector for I/O                 | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                                    |                                                                                      |
| Accessory                             |                                   | User's manual, Holding fixtures for screw installation                                                                                                                                                                      |                                                                                      |

\* 1: Refer to Section 1.6.2 for details.

External connection

<When using online connectors>

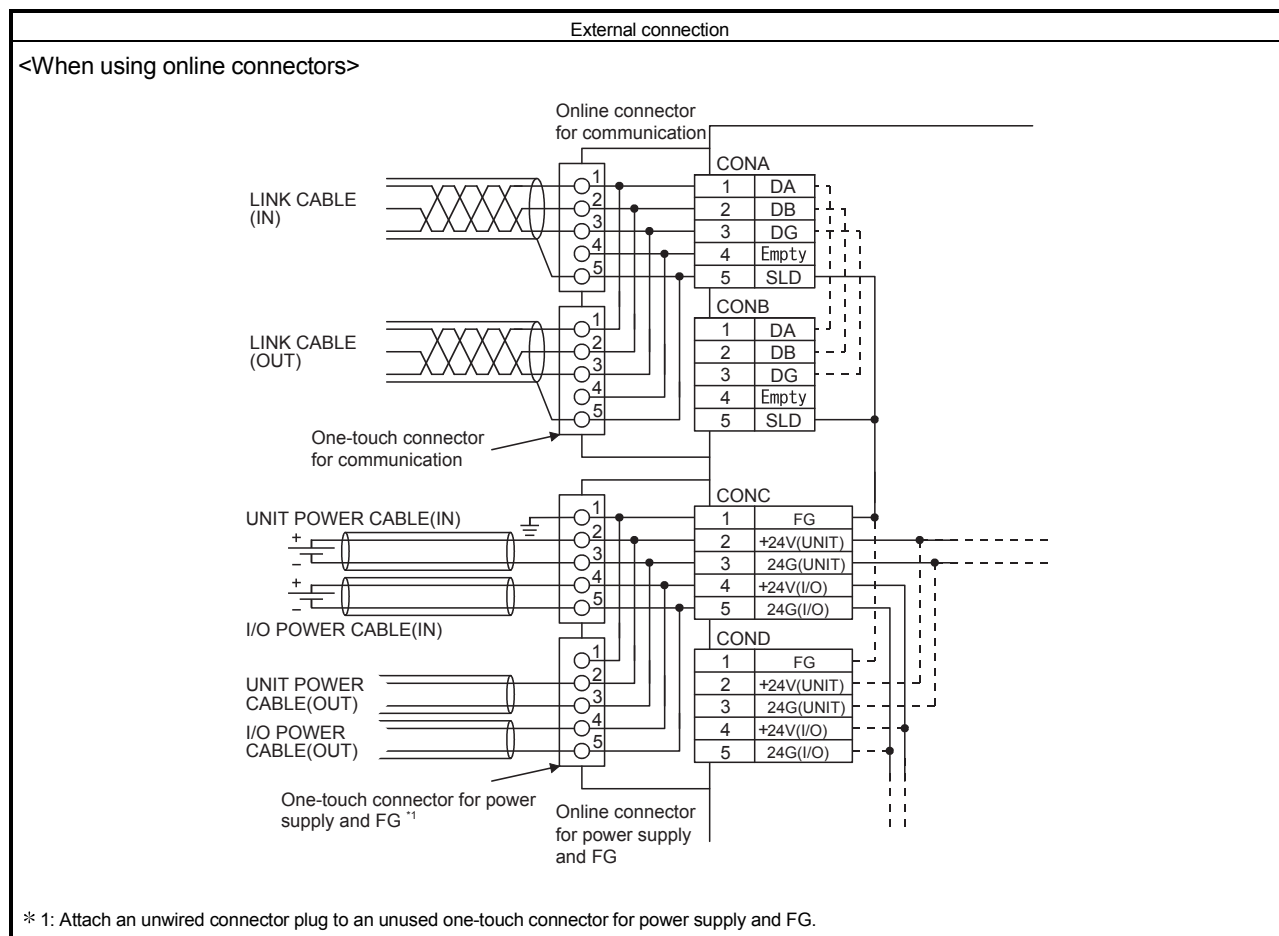
The diagram illustrates the external connections for MELSEC-A output modules. It shows four main connector groups: CONA and CONB for communication (LINK CABLE IN/OUT), CONC and COND for power supply (UNIT POWER CABLE IN/OUT and I/O POWER CABLE IN/OUT), and CON1 and CON8 for loads. A constant-voltage circuit is shown connected to the power supply lines. A note indicates that an unwired connector plug should be attached to an unused one-touch connector for power supply and FG.

| Pin number |             | Signal name |
|------------|-------------|-------------|
| CON A,B    | 1           | DA          |
|            | 2           | DB          |
|            | 3           | DG          |
|            | 4           | Empty       |
|            | 5           | SLD         |
| CON C,D    | 1           | ⏏ (FG)      |
|            | 2           | +24V (UNIT) |
|            | 3           | 24G (UNIT)  |
|            | 4           | +24V (I/O)  |
|            | 5           | 24G (I/O)   |
| Pin number | Signal name | Pin layout  |
| CON1 (Y0)  | 1           | +24V        |
|            | 2           | Empty       |
|            | 3           | Empty       |
|            | 4           | Y0          |
| CON2 (Y1)  | 1           | +24V        |
|            | 2           | Empty       |
|            | 3           | Empty       |
|            | 4           | Y1          |
| CON3 (Y2)  | 1           | +24V        |
|            | 2           | Empty       |
|            | 3           | Empty       |
|            | 4           | Y2          |
| CON4 (Y3)  | 1           | +24V        |
|            | 2           | Empty       |
|            | 3           | Empty       |
|            | 4           | Y3          |
| CON5 (Y4)  | 1           | +24V        |
|            | 2           | Empty       |
|            | 3           | Empty       |
|            | 4           | Y4          |
| CON6 (Y5)  | 1           | +24V        |
|            | 2           | Empty       |
|            | 3           | Empty       |
|            | 4           | Y5          |
| CON7 (Y6)  | 1           | +24V        |
|            | 2           | Empty       |
|            | 3           | Empty       |
|            | 4           | Y6          |
| CON8 (Y7)  | 1           | +24V        |
|            | 2           | Empty       |
|            | 3           | Empty       |
|            | 4           | Y7          |

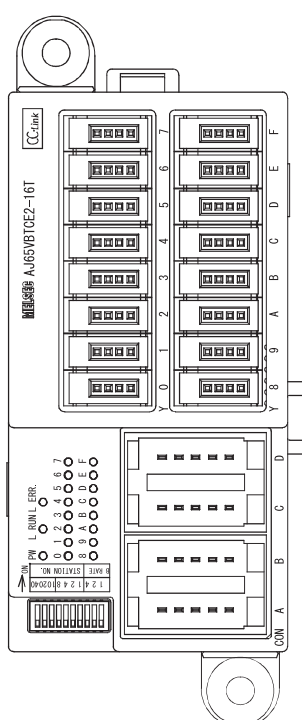
Viewed from the front of the module

\* 1: Attach an unwired connector plug to an unused one-touch connector for power supply and FG.

\* 2: Wiring the sensor connector (e-CON) incorrectly may cause malfunction or failure due to short circuit of the power supply.

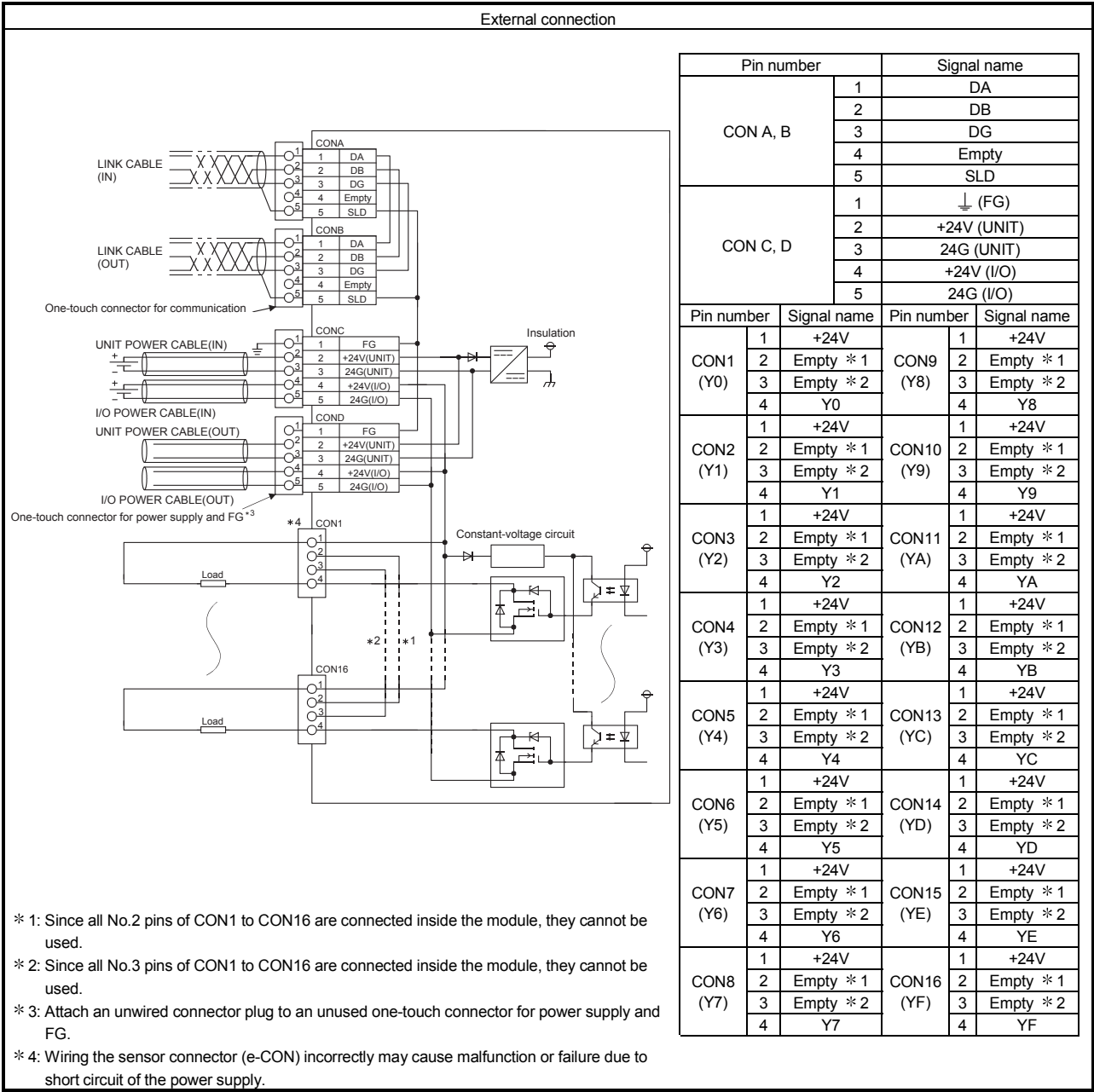


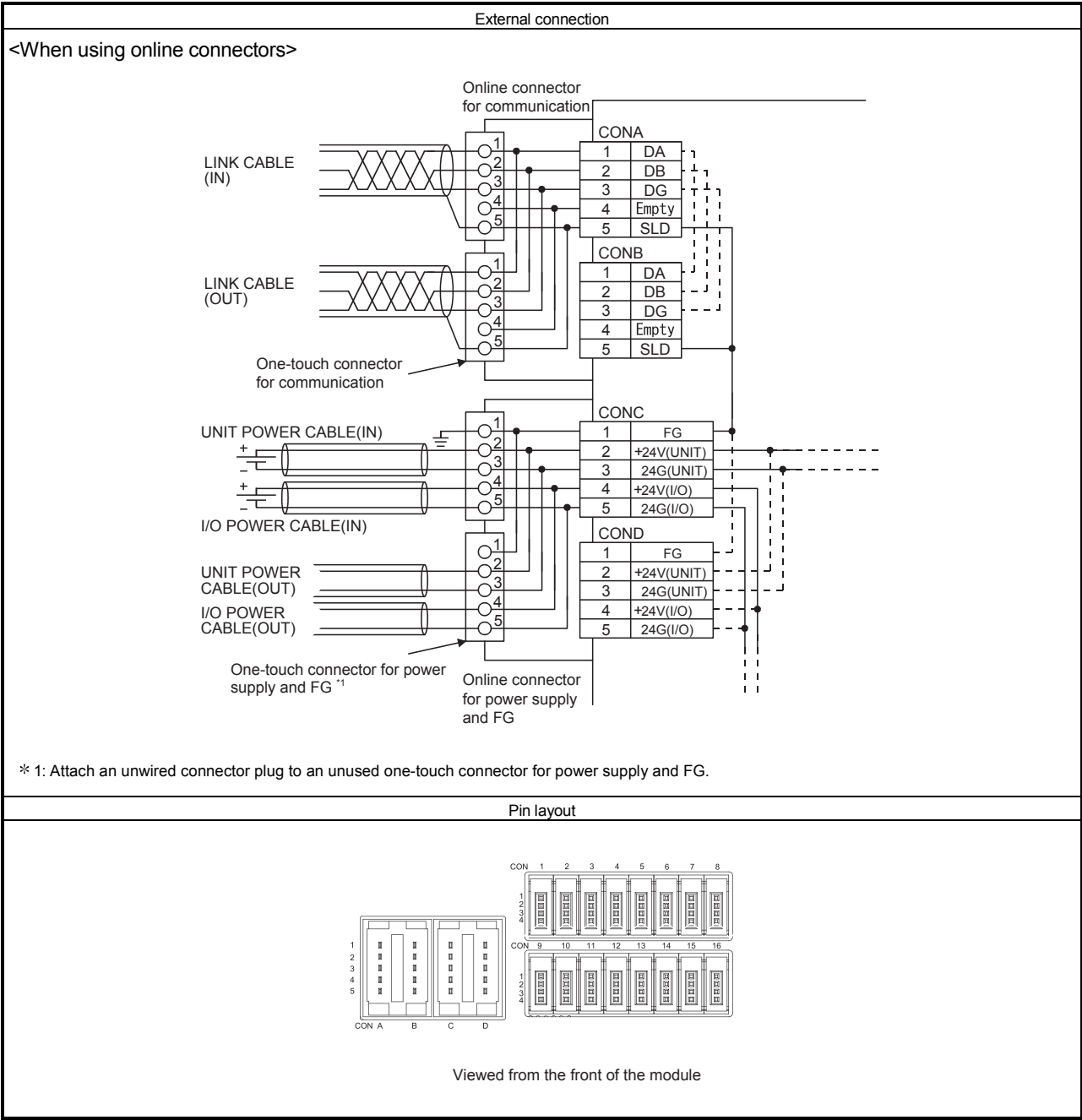
## 5.3.2 AJ65VBTCE2-16T transistor output module (sink type)

| Type                                  |                                   | Transistor output module                                                                                                                                                                                                    | Appearance                                                                           |
|---------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                   | AJ65VBTCE2-16T                                                                                                                                                                                                              |                                                                                      |
| Number of output points               |                                   | 16 points                                                                                                                                                                                                                   |  |
| Isolation method                      |                                   | Photocoupler                                                                                                                                                                                                                |                                                                                      |
| Rated load voltage                    |                                   | 12/24VDC                                                                                                                                                                                                                    |                                                                                      |
| Operating load voltage range          |                                   | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
| Max. load current                     |                                   | 0.1A/point, 1.6A/common                                                                                                                                                                                                     |                                                                                      |
| Max. inrush current                   |                                   | 0.7A, 10ms or less                                                                                                                                                                                                          |                                                                                      |
| Leakage current at OFF                |                                   | 0.1mA or lower                                                                                                                                                                                                              |                                                                                      |
| Max. voltage drop at ON               |                                   | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A                                                                                                                                                                    |                                                                                      |
| Output type                           |                                   | Sink type                                                                                                                                                                                                                   |                                                                                      |
| Protection function                   |                                   | Overload protection, overvoltage protection, overheat protection                                                                                                                                                            |                                                                                      |
| Response time                         | OFF→ON                            | 1ms or less                                                                                                                                                                                                                 |                                                                                      |
|                                       | ON→OFF                            | 1ms or less (resistive load)                                                                                                                                                                                                |                                                                                      |
| External power supply for output part | Voltage                           | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
|                                       | Current                           | 10mA or lower (at 24VDC and all points ON), excluding external load current                                                                                                                                                 |                                                                                      |
| Surge suppressor                      |                                   | Zener diode                                                                                                                                                                                                                 |                                                                                      |
| Wiring method for common              |                                   | 16 points/common (2-wire, sensor connector (e-CON) type)                                                                                                                                                                    |                                                                                      |
| Number of occupied stations           |                                   | 32-point assignment/station (16 points used)                                                                                                                                                                                |                                                                                      |
| Module power supply                   | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |                                                                                      |
|                                       | Current                           | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                  |                                                                                      |
| Noise immunity                        |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                      |                                                                                      |
| Withstand voltage                     |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                            |                                                                                      |
| Insulation resistance                 |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                           |                                                                                      |
| Protection degree                     |                                   | IP1XB                                                                                                                                                                                                                       |                                                                                      |
| Weight                                |                                   | 0.10kg                                                                                                                                                                                                                      |                                                                                      |
| External connection system            | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                |                                                                                      |
|                                       | Power supply part                 | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |                                                                                      |
|                                       | I/O part                          | Sensor connector (e-CON) [I/O signals]<br>4-pin IDC plug is sold separately. * 1                                                                                                                                            |                                                                                      |
| Applicable DIN rail                   |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                           |                                                                                      |
| Applicable wire size                  | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                     |                                                                                      |
|                                       | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                  |                                                                                      |
|                                       | Connector for I/O                 | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                                    |                                                                                      |
| Accessory                             |                                   | User's manual, Holding fixtures for screw installation                                                                                                                                                                      |                                                                                      |

\* 1: Refer to Section 1.6.2 for details.



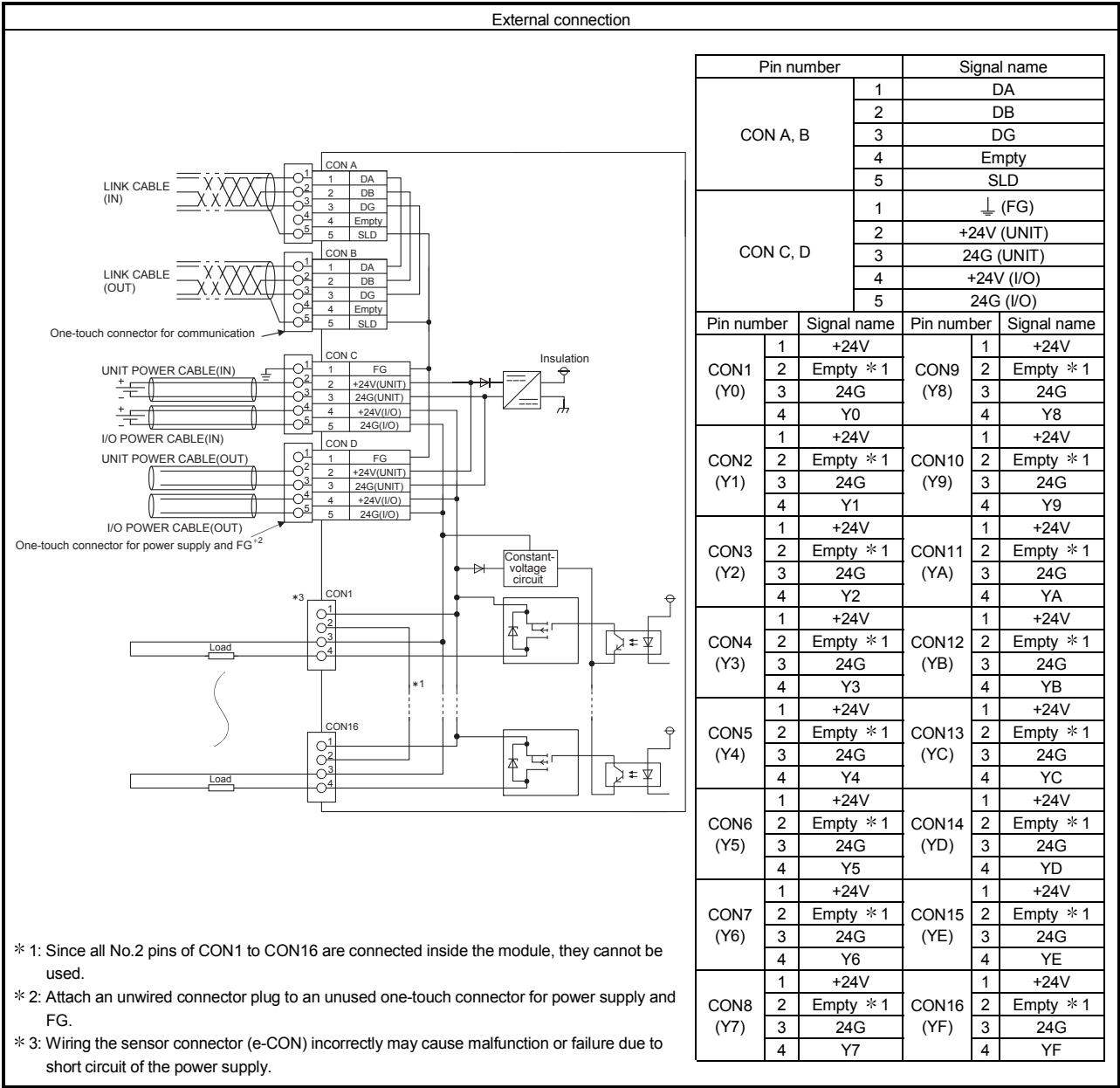


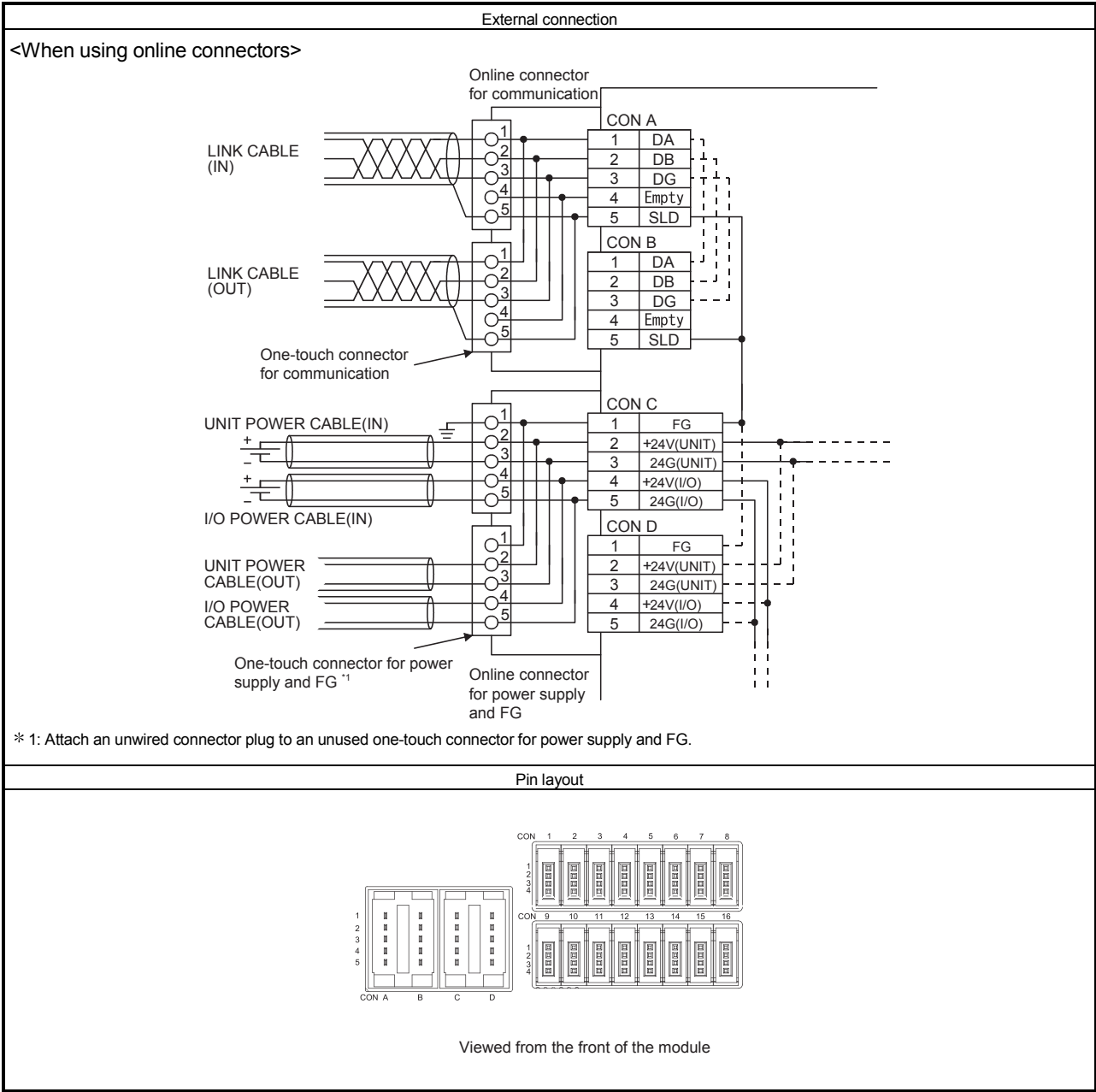


## 5.3.3 AJ65VBTCE3-16TE transistor output module (source type)

| Type                                  |                                   | Transistor output module                                                                                                                                                                                                    | Appearance |
|---------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Item                                  |                                   | AJ65VBTCE3-16TE                                                                                                                                                                                                             |            |
| Number of output points               |                                   | 16 points                                                                                                                                                                                                                   |            |
| Isolation method                      |                                   | Photocoupler                                                                                                                                                                                                                |            |
| Rated load voltage                    |                                   | 12/24VDC                                                                                                                                                                                                                    |            |
| Operating load voltage range          |                                   | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |            |
| Max. load current                     |                                   | 0.1A/point, 1.6A/common                                                                                                                                                                                                     |            |
| Max. inrush current                   |                                   | 0.7A, 10ms or less                                                                                                                                                                                                          |            |
| Leakage current at OFF                |                                   | 0.1mA or lower                                                                                                                                                                                                              |            |
| Max. voltage drop at ON               |                                   | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A                                                                                                                                                                    |            |
| Output type                           |                                   | Source type                                                                                                                                                                                                                 |            |
| Protection function                   |                                   | Overload protection, overheat protection                                                                                                                                                                                    |            |
| Response time                         | OFF→ON                            | 1ms or less                                                                                                                                                                                                                 |            |
|                                       | ON→OFF                            | 1ms or less (resistive load)                                                                                                                                                                                                |            |
| External power supply for output part | Voltage                           | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |            |
|                                       | Current                           | 11mA or lower (at 24VDC and all points ON), excluding external load current                                                                                                                                                 |            |
| Surge suppressor                      |                                   | Zener diode                                                                                                                                                                                                                 |            |
| Supply current for connected device   |                                   | 1.0A or lower/common                                                                                                                                                                                                        |            |
| Wiring method for common              |                                   | 16 points/common (3-wire, sensor connector (e-CON) type)                                                                                                                                                                    |            |
| Number of occupied stations           |                                   | 32-point assignment/station (16 points used)                                                                                                                                                                                |            |
| Module power supply                   | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                   |            |
|                                       | Current                           | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                  |            |
| Noise immunity                        |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                      |            |
| Withstand voltage                     |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                            |            |
| Insulation resistance                 |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                           |            |
| Protection degree                     |                                   | IP1XB                                                                                                                                                                                                                       |            |
| Weight                                |                                   | 0.11kg                                                                                                                                                                                                                      |            |
| External connection system            | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                |            |
|                                       | Power supply part                 | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |            |
|                                       | I/O part                          | Sensor connector (e-CON) [I/O signals]<br>4-pin IDC plug is sold separately. * 1                                                                                                                                            |            |
| Applicable DIN rail                   |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                           |            |
| Applicable wire size                  | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                     |            |
|                                       | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                  |            |
|                                       | Connector for I/O                 | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                                    |            |
| Accessory                             |                                   | User's manual, Holding fixtures for screw installation                                                                                                                                                                      |            |

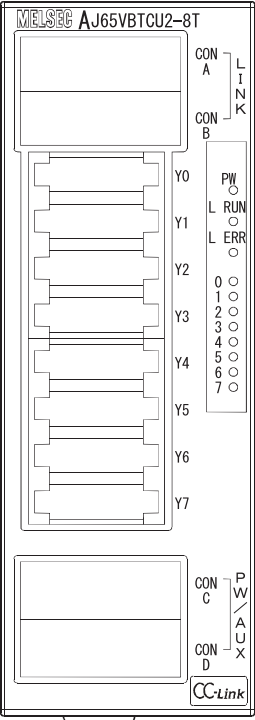
\* 1: Refer to Section 1.6.2 for details.

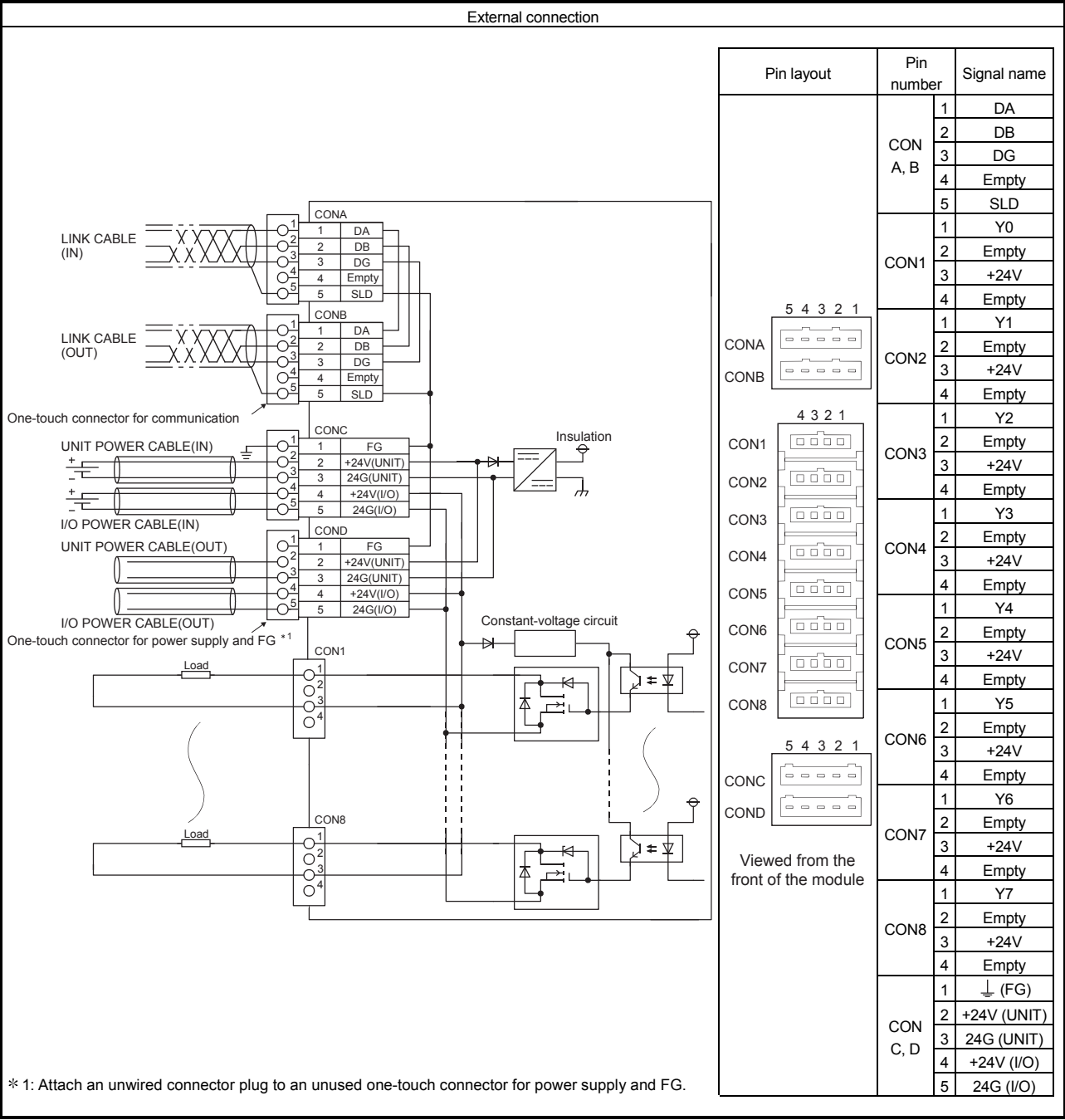


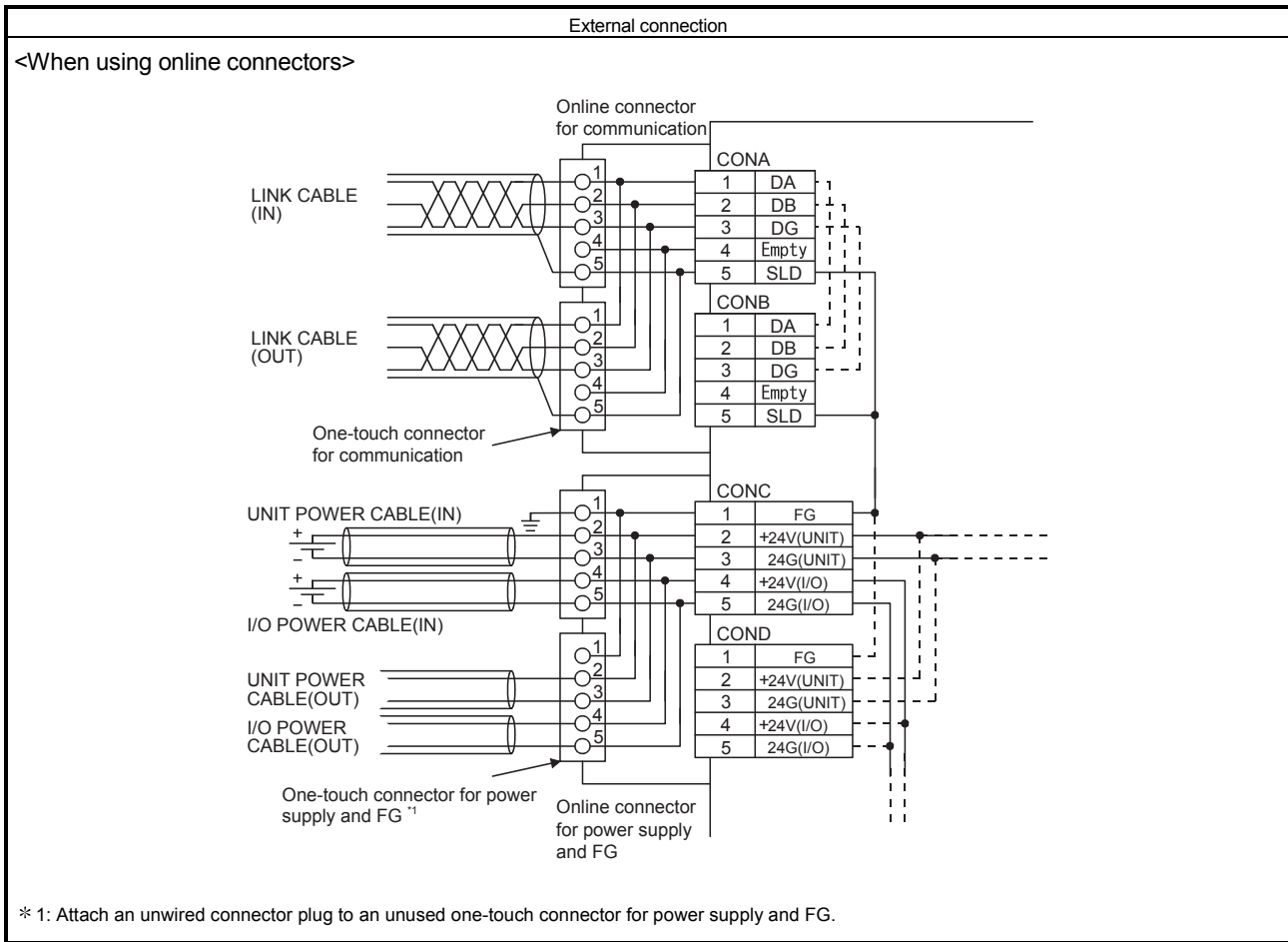


## 5.4 One-Touch Connector Type Output Module

## 5.4.1 AJ65VBTCU2-8T transistor output module (sink type)

| Type                                  |                                   | Transistor output module                                                                                                                                                                                                                              | Appearance                                                                           |
|---------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                  |                                   | AJ65VBTCU2-8T                                                                                                                                                                                                                                         |                                                                                      |
| Number of output points               |                                   | 8 points                                                                                                                                                                                                                                              |  |
| Isolation method                      |                                   | Photocoupler                                                                                                                                                                                                                                          |                                                                                      |
| Rated load voltage                    |                                   | 12/24VDC                                                                                                                                                                                                                                              |                                                                                      |
| Operating load voltage range          |                                   | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                             |                                                                                      |
| Max. load current                     |                                   | 0.1A/point, 0.8A/common                                                                                                                                                                                                                               |                                                                                      |
| Max. inrush current                   |                                   | 0.7A, 10ms or less                                                                                                                                                                                                                                    |                                                                                      |
| Leakage current at OFF                |                                   | 0.1mA or lower                                                                                                                                                                                                                                        |                                                                                      |
| Max. voltage drop at ON               |                                   | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A                                                                                                                                                                                              |                                                                                      |
| Output type                           |                                   | Sink type                                                                                                                                                                                                                                             |                                                                                      |
| Protection function                   |                                   | Overload protection, overvoltage protection, overheat protection                                                                                                                                                                                      |                                                                                      |
| Response time                         | OFF→ON                            | 1ms or less                                                                                                                                                                                                                                           |                                                                                      |
|                                       | ON→OFF                            | 1ms or less (rated load, resistive load)                                                                                                                                                                                                              |                                                                                      |
| External power supply for output part | Voltage                           | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                             |                                                                                      |
|                                       | Current                           | 5mA or lower (TYP., 24VDC/common)                                                                                                                                                                                                                     |                                                                                      |
| Surge suppressor                      |                                   | Zener diode                                                                                                                                                                                                                                           |                                                                                      |
| Wiring method for common              |                                   | 8 points/common (2-wire, one-touch connector type)                                                                                                                                                                                                    |                                                                                      |
| Number of occupied stations           |                                   | 32-point assignment/station (8 points used)                                                                                                                                                                                                           |                                                                                      |
| Module power supply                   | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                             |                                                                                      |
|                                       | Current                           | 35mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                            |                                                                                      |
| Noise immunity                        |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                |                                                                                      |
| Withstand voltage                     |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                      |                                                                                      |
| Insulation resistance                 |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                     |                                                                                      |
| Protection degree                     |                                   | IP1XB                                                                                                                                                                                                                                                 |                                                                                      |
| Weight                                |                                   | 0.15kg                                                                                                                                                                                                                                                |                                                                                      |
| External connection system            | Communication part                | One-touch connector for communication<br>[Transmission circuit]<br>5-pin IDC plug is sold separately.<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                                                 |                                                                                      |
|                                       | Power supply part                 | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P                           |                                                                                      |
|                                       | I/O part                          | One-touch connector for I/O<br>4-pin IDC plug is sold separately.                                                                                                                                                                                     |                                                                                      |
| Applicable DIN rail                   |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                     |                                                                                      |
| Applicable wire size                  | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110<br>0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant) |                                                                                      |
|                                       | Connector for power supply and FG |                                                                                                                                                                                                                                                       |                                                                                      |
|                                       | Connector for I/O                 | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> ]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5mm <sup>2</sup> ]                                 |                                                                                      |
| Accessory                             |                                   | User's manual                                                                                                                                                                                                                                         |                                                                                      |







## 5.4.2 AJ65VBTCU2-16T transistor output module (sink type)

| Type                                  |                                   | Transistor output module                                                                                                                                                                                                 | Appearance |
|---------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Item                                  |                                   | AJ65VBTCU2-16T                                                                                                                                                                                                           |            |
| Number of output points               |                                   | 16 points                                                                                                                                                                                                                |            |
| Isolation method                      |                                   | Photocoupler                                                                                                                                                                                                             |            |
| Rated load voltage                    |                                   | 12/24VDC                                                                                                                                                                                                                 |            |
| Operating load voltage range          |                                   | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                |            |
| Max. load current                     |                                   | 0.1A/point, 1.6A/common                                                                                                                                                                                                  |            |
| Max. inrush current                   |                                   | 0.7A, 10ms or less                                                                                                                                                                                                       |            |
| Leakage current at OFF                |                                   | 0.1mA or lower                                                                                                                                                                                                           |            |
| Max. voltage drop at ON               |                                   | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A                                                                                                                                                                 |            |
| Output type                           |                                   | Sink type                                                                                                                                                                                                                |            |
| Protection function                   |                                   | Overload protection, overvoltage protection, overheat protection                                                                                                                                                         |            |
| Response time                         | OFF→ON                            | 1ms or less                                                                                                                                                                                                              |            |
|                                       | ON→OFF                            | 1ms or less (resistive load)                                                                                                                                                                                             |            |
| External power supply for output part | Voltage                           | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                |            |
|                                       | Current                           | 10mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                       |            |
| Surge suppressor                      |                                   | Zener diode                                                                                                                                                                                                              |            |
| Wiring method for common              |                                   | 16 points/common (2-wire, one-touch connector type)                                                                                                                                                                      |            |
| Number of occupied stations           |                                   | 32-point assignment/station (16 points used)                                                                                                                                                                             |            |
| Module power supply                   | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                |            |
|                                       | Current                           | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                               |            |
| Noise immunity                        |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                   |            |
| Withstand voltage                     |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                         |            |
| Insulation resistance                 |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                        |            |
| Protection degree                     |                                   | IP1XB                                                                                                                                                                                                                    |            |
| Weight                                |                                   | 0.19kg                                                                                                                                                                                                                   |            |
| External connection system            | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately.<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                       |            |
|                                       | Power supply part                 | One-touch connector for power supply and FG [Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P |            |
|                                       | I/O part                          | One-touch connector for I/O<br>4-pin IDC plug is sold separately.                                                                                                                                                        |            |
| Applicable DIN rail                   |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                        |            |
| Applicable wire size                  | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                  |            |
|                                       | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                               |            |
|                                       | Connector for I/O                 | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> ]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5mm <sup>2</sup> ]    |            |
| Accessory                             |                                   | User's manual                                                                                                                                                                                                            |            |

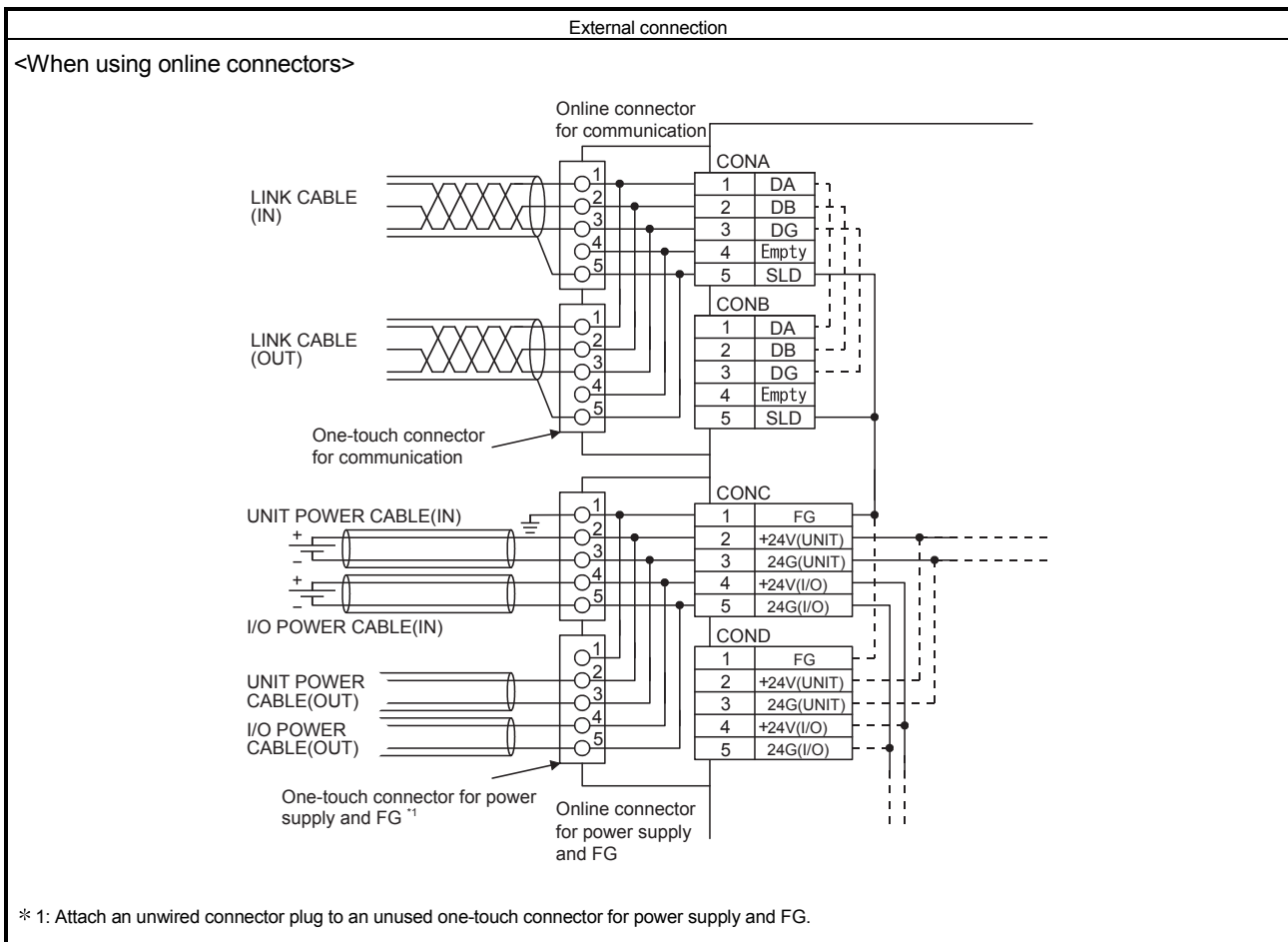
# External connection

The diagram illustrates the external connection for MELSEC-A output modules. It shows the following components and connections:

- Communication:** LINK CABLE (IN) and LINK CABLE (OUT) are connected to CONA and CONB. The one-touch connector for communication is shown.
- Power Supply:** UNIT POWER CABLE (IN) and I/O POWER CABLE (IN) are connected to CONC. UNIT POWER CABLE (OUT) and I/O POWER CABLE (OUT) are connected to COND. The one-touch connector for power supply and FG is shown.
- Constant-voltage circuit:** A circuit diagram showing the connection of the power supply cables to the module's internal circuitry.
- Insulation:** A note indicating that the power supply cables should be insulated.
- Load:** The module is connected to a load through CON1 and CON16.

\* 1: Attach an unwired connector plug to an unused one-touch connector for power supply and FG.

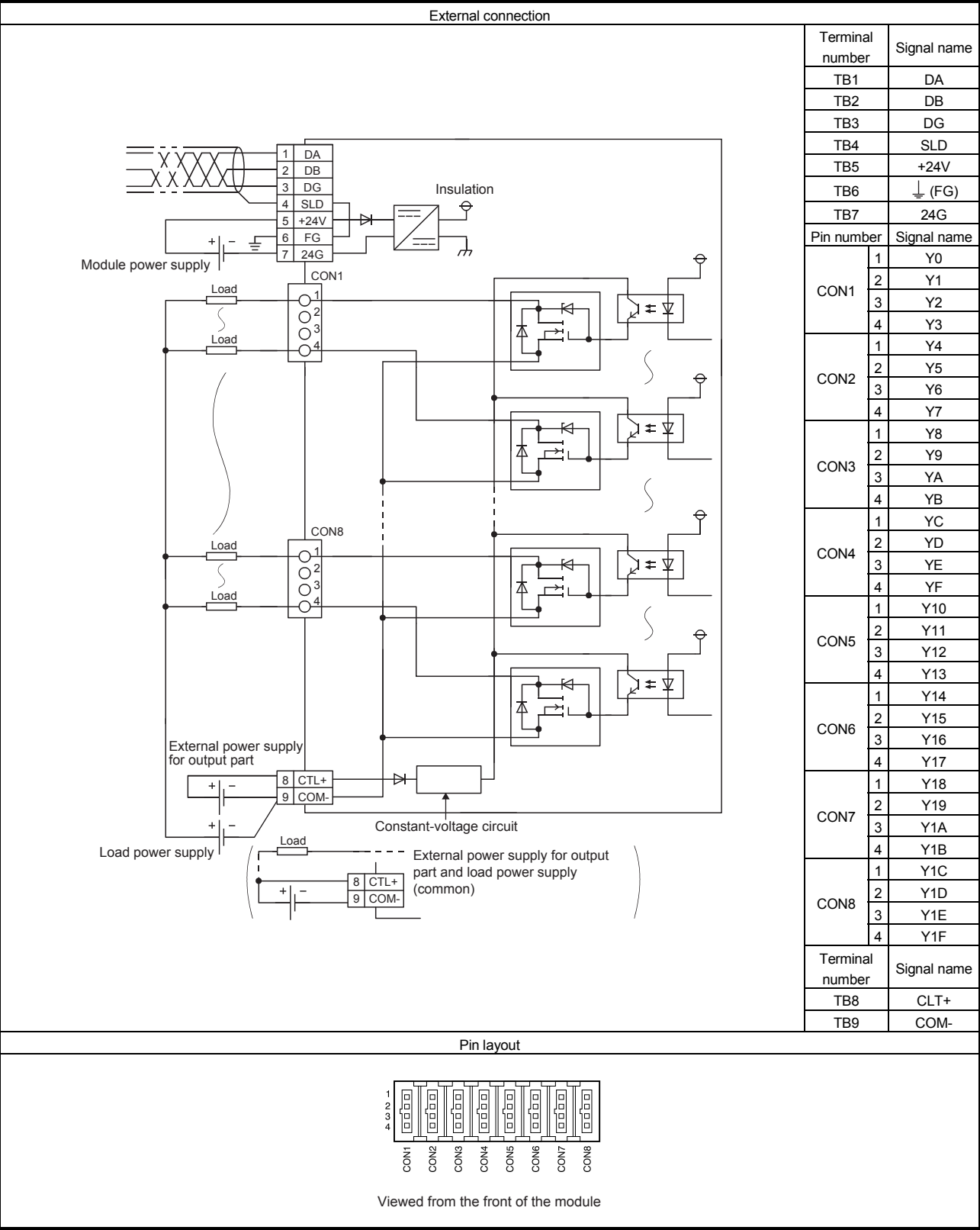
| Pin layout                      |  | Pin number | Signal name |
|---------------------------------|--|------------|-------------|
| <div>CONA</div> <div>CONB</div> |  | 1          | DA          |
|                                 |  | 2          | DB          |
|                                 |  | 3          | DG          |
|                                 |  | 4          | Empty       |
|                                 |  | 5          | SLD         |
| <div>CON1</div>                 |  | 1          | Y0          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON2</div>                 |  | 1          | Y1          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON3</div>                 |  | 1          | Y2          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON4</div>                 |  | 1          | Y3          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON5</div>                 |  | 1          | Y4          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON6</div>                 |  | 1          | Y5          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON7</div>                 |  | 1          | Y6          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON8</div>                 |  | 1          | Y7          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON9</div>                 |  | 1          | Y8          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON10</div>                |  | 1          | Y9          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON11</div>                |  | 1          | YA          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON12</div>                |  | 1          | YB          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON13</div>                |  | 1          | YC          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON14</div>                |  | 1          | YD          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON15</div>                |  | 1          | YE          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON16</div>                |  | 1          | YF          |
|                                 |  | 2          | Empty       |
|                                 |  | 3          | +24V        |
|                                 |  | 4          | Empty       |
| <div>CON C, D</div>             |  | 1          | ⏏ (FG)      |
|                                 |  | 2          | +24V (UNIT) |
|                                 |  | 3          | 24G (UNIT)  |
|                                 |  | 4          | +24V (I/O)  |
|                                 |  | 5          | 24G (I/O)   |



## 5.4.3 AJ65SBTC1-32T transistor output module (sink type)

| Type |  | Transistor output module |  |
|------|--|--------------------------|--|
| Item |  | AJ65SBTC1-32T            |  |
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|      |  | AJ65SBTC1-32             |  |

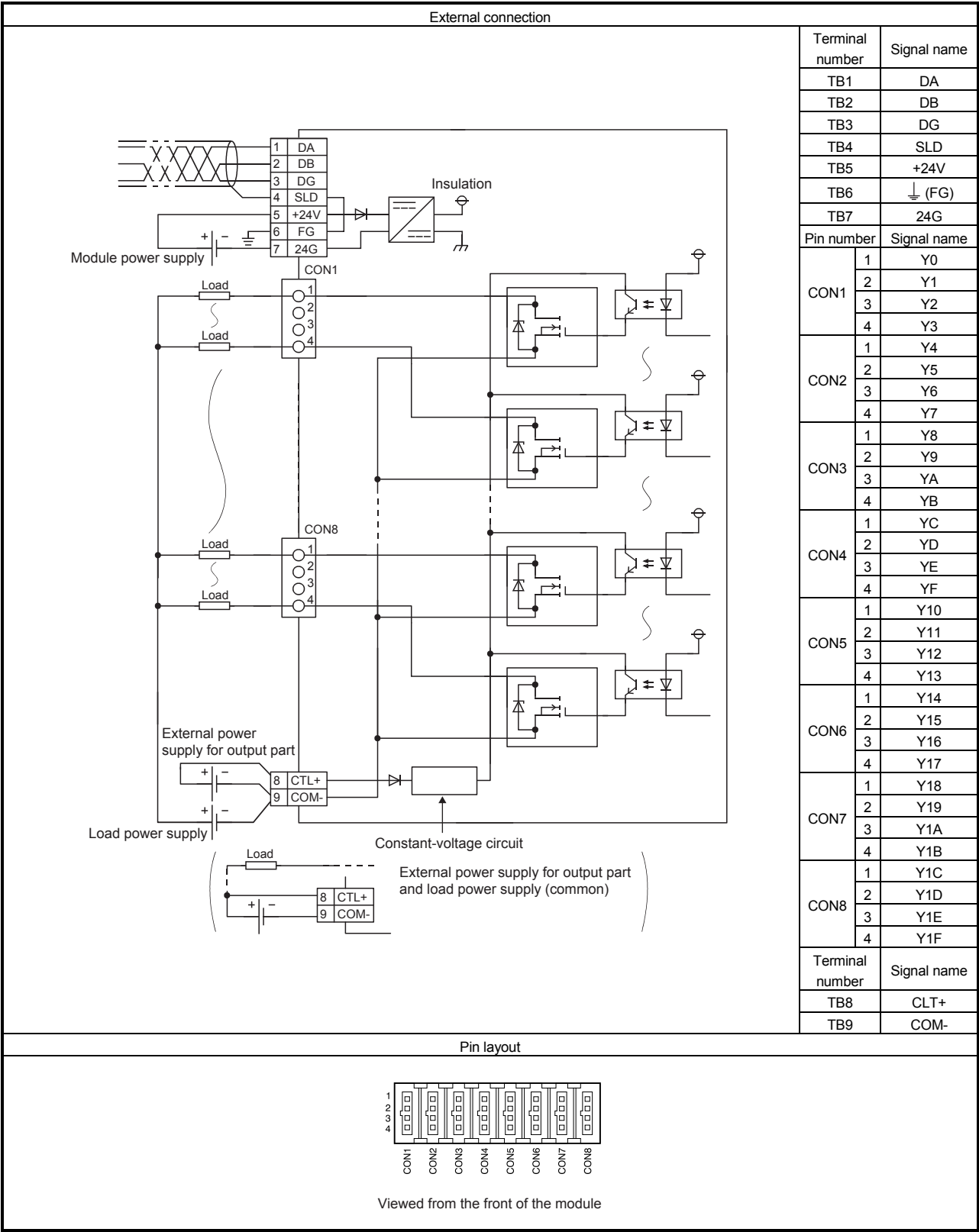
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



| Type                                  |                                              | Transistor output module                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                      |
|---------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                       |                                              | AJ65SBTC1-32T1                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                      |
| Item                                  |                                              | Appearance                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                      |
| Number of output points               |                                              | 32 points                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                      |
| Isolation method                      |                                              | Photocoupler                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                      |
| Rated load voltage                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                      |
| Operating load voltage range          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                      |
| Max. load current                     |                                              | 0.1A/point, 3.2A/common                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                      |
| Max. inrush current                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      |
| Leakage current at OFF                |                                              | 0.1mA or lower                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                      |
| Max. voltage drop at ON               |                                              | 0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                      |
| Output type                           |                                              | Sink type                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                      |
| Protection function                   |                                              | None                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                      |
| Response time                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                      |
|                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                      |
| External power supply for output part | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                      |
|                                       | Current                                      | 50mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                      |
| Surge suppressor                      |                                              | Zener diode                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                      |
| Wiring method for common              |                                              | 32 points/common (1-wire, one-touch connector type)                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                      |
| Number of occupied stations           |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                      |
| Module power supply                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                      |
|                                       | Current                                      | 60mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                      |
| Noise immunity                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                      |
| Withstand voltage                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                      |
| Insulation resistance                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                      |
| Protection degree                     |                                              | IP2X                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                      |
| Weight                                |                                              | 0.16kg                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                      |
| External connection system            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                    |                                                                                                                                                                                                                                                                                                      |
|                                       | I/O power supply part                        | 2-point direct-mount terminal block<br>[I/O power supply]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                              |                                                                                                                                                                                                                                                                                                      |
|                                       | I/O part                                     | Dedicated one-touch connector [I/O signals]<br>4-pin IDC plug is sold separately.                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                      |
| Module mounting screw                 |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                            |                                                                                                                                                                                                                                                                                                      |
| Applicable DIN rail                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                      |
| Applicable wire size                  | Communication part, module power supply part | Applicable solderless terminal                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>• RAV1.25-3 (compliant with JIS C 2805)<br/>[Applicable wire size: 0.3 to 1.25mm<sup>2</sup> (22 to 16 AWG) stranded wire]</li> <li>• V2-MS3, RAP2-3SL, TGV2-3N<br/>[Applicable wire size: 1.25 to 2.0mm<sup>2</sup> (16 to 14 AWG) stranded wire]</li> </ul> |
|                                       | I/O power supply part                        |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                      |
|                                       | I/O part                                     | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG) stranded wire]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5 mm <sup>2</sup> (22 to 20 AWG) stranded wire] |                                                                                                                                                                                                                                                                                                      |
| Wire                                  | Material                                     | Copper                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                      |
|                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                      |
| Accessory                             |                                              | User's manual                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                      |

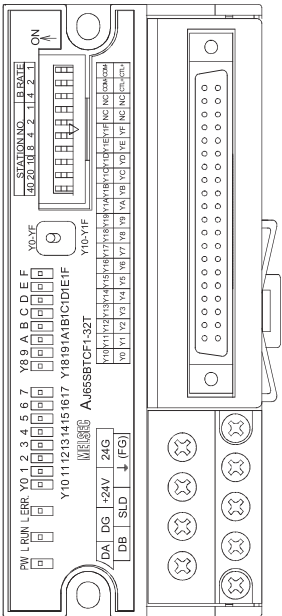
The diagram illustrates the AJ65SBTC1-32T1 module, a 32-point transistor output module. It shows the module's profile with various connection points. On the left, there are terminal blocks for power supply (Y0-YF) and signal (Y1-YF). The top features a 7-point two-piece terminal block for communication, power supply, and FG. The bottom shows a 2-point direct-mount terminal block for I/O power supply and a dedicated one-touch connector for I/O signals. The module is designed for DIN rail mounting, with screws and washers indicated. The diagram also shows the module's orientation and the location of the DIN rail.

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## 5.5 FCN Connector Type Output Module

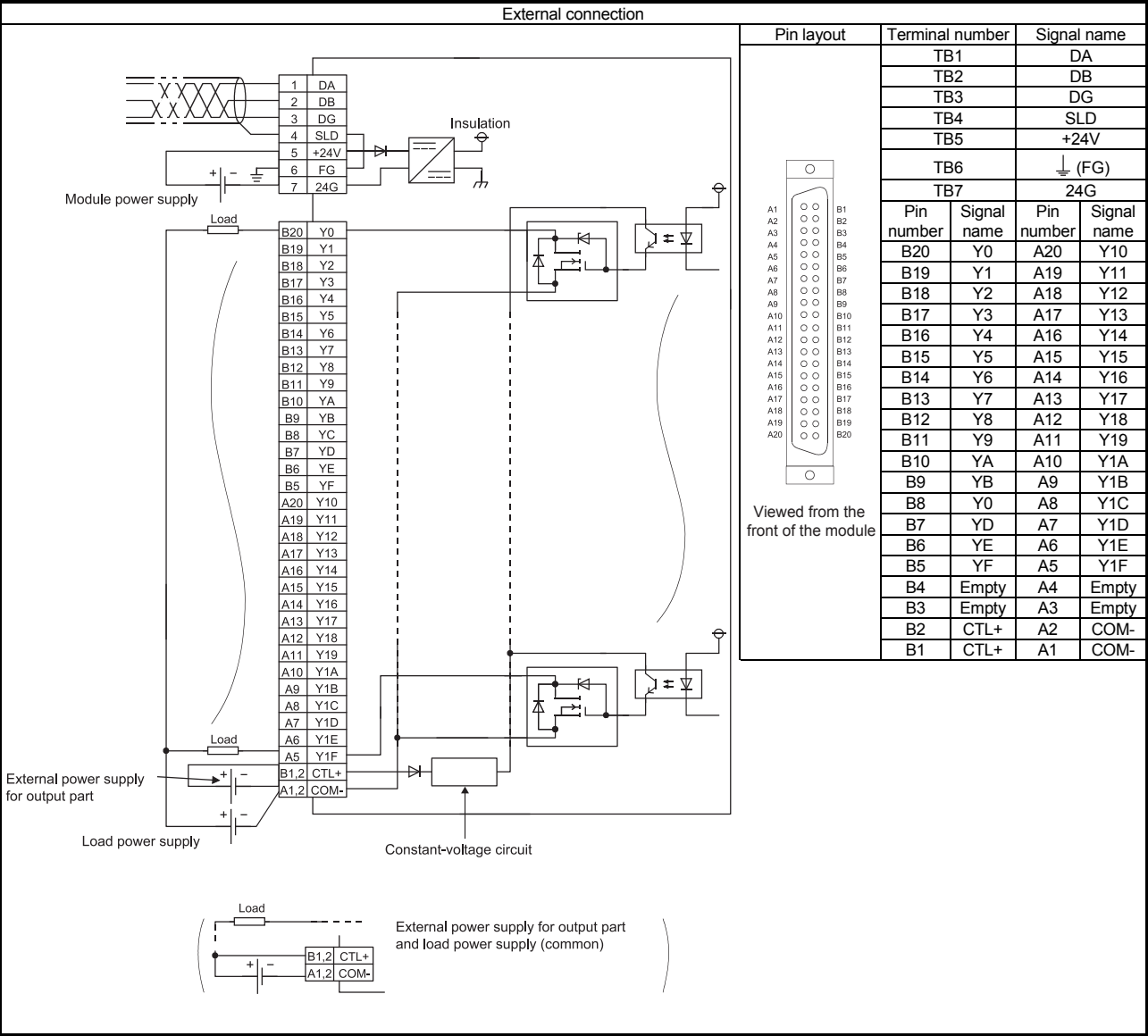
## 5.5.1 AJ65SBTCF1-32T type transistor output module (sink type)

| Type                                                  |                                              | Triac output module                                                                                                                                                                                                                                                                          |                                                                                      |
|-------------------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                                  |                                              | AJ65SBTCF1-32T                                                                                                                                                                                                                                                                               | Appearance                                                                           |
| Number of output points                               |                                              | 32 points                                                                                                                                                                                                                                                                                    |  |
| Isolation method                                      |                                              | Photocoupler                                                                                                                                                                                                                                                                                 |                                                                                      |
| Rated load voltage                                    |                                              | 12/24VDC                                                                                                                                                                                                                                                                                     |                                                                                      |
| Operating load voltage range                          |                                              | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                    |                                                                                      |
| Max. load current                                     |                                              | 0.1A/point, 3.2A/common                                                                                                                                                                                                                                                                      |                                                                                      |
| Max. inrush current                                   |                                              | 1.0A, 10ms or less                                                                                                                                                                                                                                                                           |                                                                                      |
| Leakage current at OFF                                |                                              | 0.1mA or lower                                                                                                                                                                                                                                                                               |                                                                                      |
| Max. voltage drop at ON                               |                                              | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A                                                                                                                                                                                                                                     |                                                                                      |
| Output type                                           |                                              | Sink type                                                                                                                                                                                                                                                                                    |                                                                                      |
| Protection function                                   |                                              | Overload protection, overvoltage protection, overheat protection                                                                                                                                                                                                                             |                                                                                      |
| Response time                                         | OFF→ON                                       | 0.5ms or less                                                                                                                                                                                                                                                                                |                                                                                      |
|                                                       | ON→OFF                                       | 1.5ms or less (resistive load)                                                                                                                                                                                                                                                               |                                                                                      |
| External power supply for output part                 | Voltage                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                    |                                                                                      |
|                                                       | Current                                      | 50mA or lower (TYP. 24VDC/common), excluding external load current                                                                                                                                                                                                                           |                                                                                      |
| Surge suppressor                                      |                                              | Zener diode                                                                                                                                                                                                                                                                                  |                                                                                      |
| Wiring method for common                              |                                              | 32 points/common (1-wire, FCN connector type)                                                                                                                                                                                                                                                |                                                                                      |
| Number of occupied stations                           |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                                                                 |                                                                                      |
| Module power supply                                   | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                    |                                                                                      |
|                                                       | Current                                      | 60mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                   |                                                                                      |
| Noise immunity                                        |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                       |                                                                                      |
| Withstand voltage                                     |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                             |                                                                                      |
| Insulation resistance                                 |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                            |                                                                                      |
| Weight                                                |                                              | 0.15kg                                                                                                                                                                                                                                                                                       |                                                                                      |
| External connection system                            | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                  |                                                                                      |
|                                                       | I/O power supply part, I/O part              | 40-pin connector [I/O power supply, I/O signal]<br>(A6CON1, A6CON2, A6CON3, A6CON4)                                                                                                                                                                                                          |                                                                                      |
| Module mounting screw                                 |                                              | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                                                                       |                                                                                      |
| Applicable DIN rail                                   |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                                                            |                                                                                      |
| Applicable wire size                                  | Communication part, module power supply part | Applicable solderless terminal <sup>*1</sup><br>• RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                                                                      |
|                                                       | I/O power supply part, I/O part              | • 0.08 to 0.3mm <sup>2</sup> (28 to 22 AWG) stranded wire (A6CON1 and A6CON4) <sup>*2</sup><br>• 0.08 to 0.2mm <sup>2</sup> (28 to 24 AWG) stranded wire (A6CON2)<br>• 0.08mm <sup>2</sup> (28 AWG) stranded wire, φ0.25mm (30 AWG) single wire (A6CON3)                                     |                                                                                      |
| Wire                                                  | Material                                     | Copper                                                                                                                                                                                                                                                                                       |                                                                                      |
|                                                       | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                                                                 |                                                                                      |
| Applicable connector/terminal block conversion module |                                              | A6TBXY36, A6TBXY54                                                                                                                                                                                                                                                                           |                                                                                      |
| Accessory                                             |                                              | User's manual                                                                                                                                                                                                                                                                                |                                                                                      |

\*1 For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

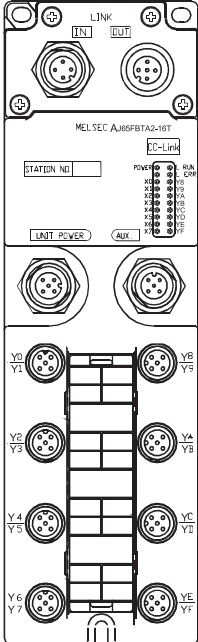
\*2 Use cables with outside diameter of 1.3mm or shorter to connect 40 cables to the connector. In addition, consider the amount of current to be used and select appropriate cables.

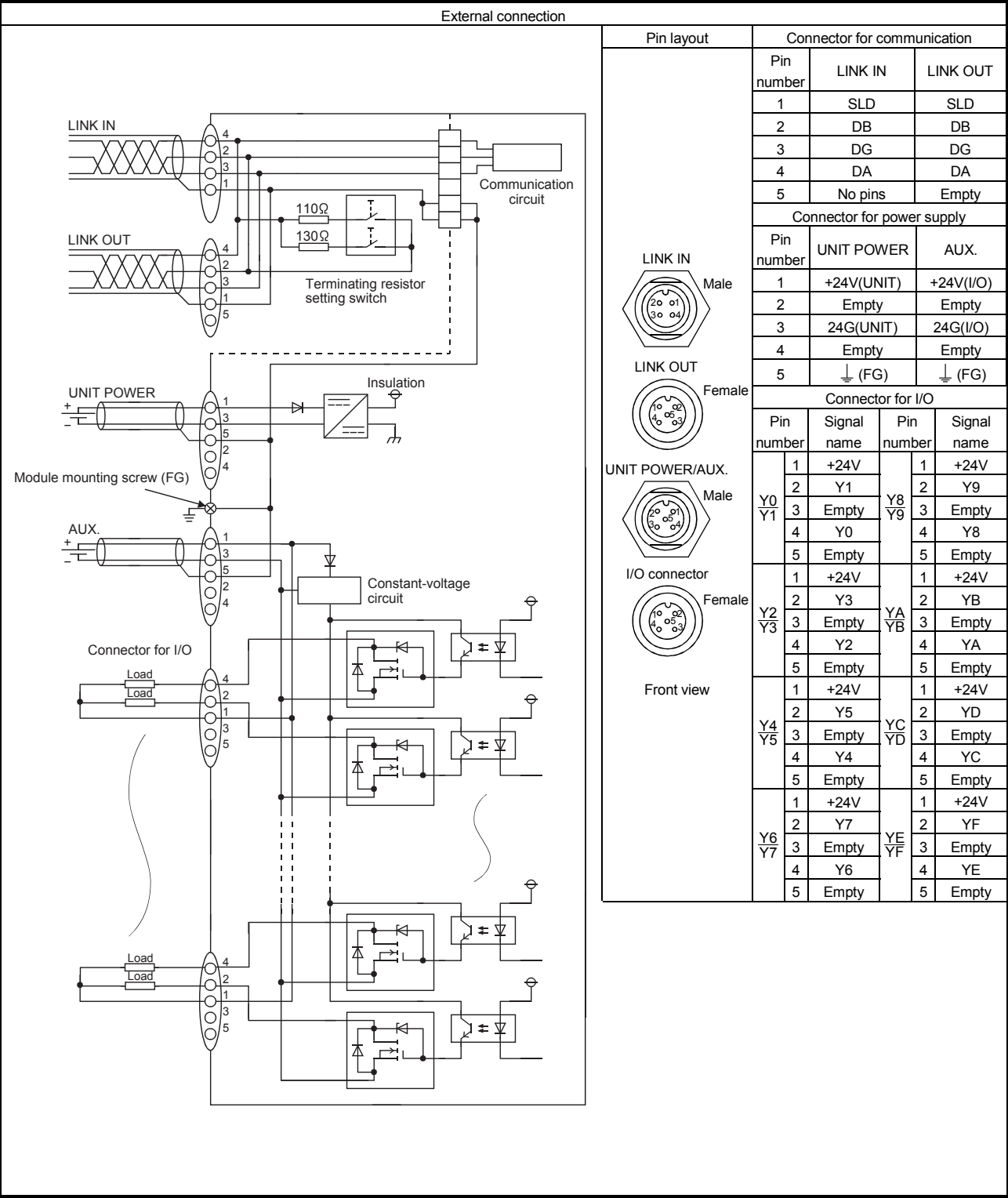




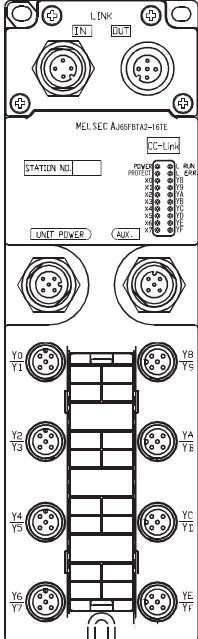
## 5.6 Waterproof Type Output Module

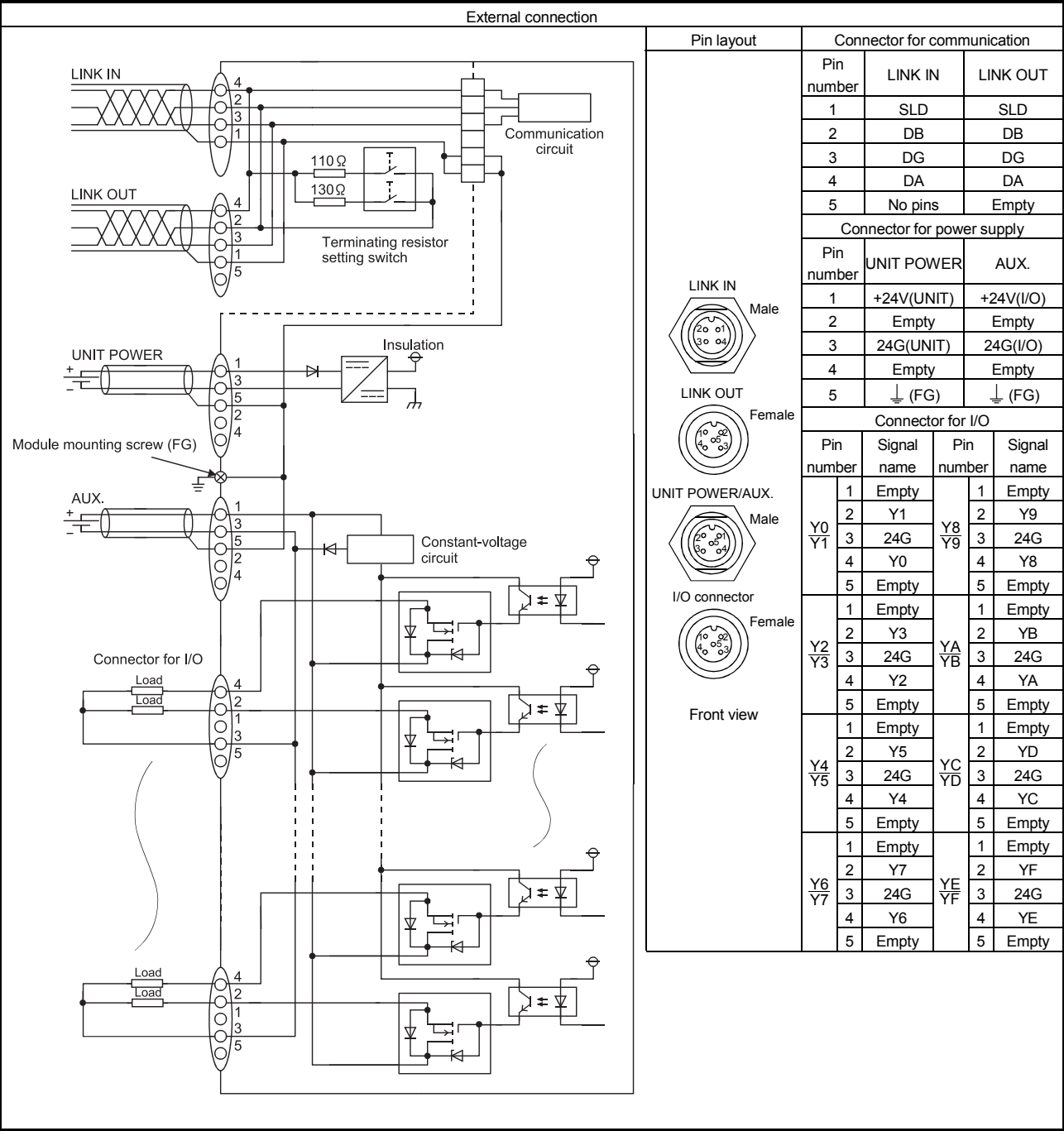
## 5.6.1 AJ65FBTA2-16T transistor output module (sink type)

| Type                                  |         | Transistor output module                                                                               |  | Appearance                                                                           |
|---------------------------------------|---------|--------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|
|                                       |         | AJ65FBTA2-16T                                                                                          |  |                                                                                      |
| Number of output points               |         | 16 points                                                                                              |  |  |
| Isolation method                      |         | Photocoupler                                                                                           |  |                                                                                      |
| Rated load voltage                    |         | 12/24VDC                                                                                               |  |                                                                                      |
| Operating load voltage range          |         | 10.2 to 28.8VDC (ripple ratio: within 5%)                                                              |  |                                                                                      |
| Max. load current                     |         | 0.5A/point, 4A/common                                                                                  |  |                                                                                      |
| Max. inrush current                   |         | 1.0A, 10ms or less                                                                                     |  |                                                                                      |
| Leakage current at OFF                |         | 0.25mA or lower                                                                                        |  |                                                                                      |
| Max. voltage drop at ON               |         | 0.15VDC or lower (TYP.) 0.5A, 0.25VDC or lower (MAX.) 0.5A                                             |  |                                                                                      |
| Output type                           |         | Sink type                                                                                              |  |                                                                                      |
| Protection function                   |         | Overload protection, overheat protection                                                               |  |                                                                                      |
| Response time                         | OFF→ON  | 0.5ms or less                                                                                          |  |                                                                                      |
|                                       | ON→OFF  | 1.5ms or less (resistive load)                                                                         |  |                                                                                      |
| External power supply for output part | Voltage | 10.2 to 28.8VDC (ripple ratio: within 5%)                                                              |  |                                                                                      |
|                                       | Current | 20mA or lower (at 24VDC and all points ON), excluding external load current                            |  |                                                                                      |
| Surge suppressor                      |         | Zener diode                                                                                            |  |                                                                                      |
| Wiring method for common              |         | 16 points/common (2-wire, waterproof connector type)                                                   |  |                                                                                      |
| Number of occupied stations           |         | 32-point assignment/station (16 points used)                                                           |  |                                                                                      |
| Module power supply                   | Voltage | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                              |  |                                                                                      |
|                                       | Current | 50mA or lower (at 24VDC and all points ON)                                                             |  |                                                                                      |
| Noise immunity                        |         | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition) |  |                                                                                      |
| Withstand voltage                     |         | 500VAC for 1 minute between all DC external terminals and ground                                       |  |                                                                                      |
| Insulation resistance                 |         | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)      |  |                                                                                      |
| Protection degree                     |         | IP67                                                                                                   |  |                                                                                      |
| Weight                                |         | 0.40kg                                                                                                 |  |                                                                                      |
| Accessory                             |         | User's manual                                                                                          |  |                                                                                      |
| Optional item                         |         | Waterproof cap: A6CAP-WP2 (20 pieces)                                                                  |  |                                                                                      |
| Other connecting devices              |         | Refer to Section 1.6.1.                                                                                |  |                                                                                      |



## 5.6.2 AJ65FBTA2-16TE transistor output module (source type)

| Type                                  |         | Transistor output module                                                                                  |  | Appearance                                                                           |
|---------------------------------------|---------|-----------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|
|                                       |         | AJ65FBTA2-16TE                                                                                            |  |                                                                                      |
| Item                                  |         |                                                                                                           |  |                                                                                      |
| Number of output points               |         | 16 points                                                                                                 |  |  |
| Isolation method                      |         | Photocoupler                                                                                              |  |                                                                                      |
| Rated load voltage                    |         | 12/24VDC                                                                                                  |  |                                                                                      |
| Operating load voltage range          |         | 10.2 to 28.8VDC (ripple ratio: within 5%)                                                                 |  |                                                                                      |
| Max. load current                     |         | 1.0A/point, 4A/common                                                                                     |  |                                                                                      |
| Max. inrush current                   |         | 2.0A, 10ms or less                                                                                        |  |                                                                                      |
| Leakage current at OFF                |         | 0.3mA or lower                                                                                            |  |                                                                                      |
| Max. voltage drop at ON               |         | 0.15VDC or lower (TYP.) 1.0A, 0.2VDC or lower (MAX.) 1.0A                                                 |  |                                                                                      |
| Output type                           |         | Source type                                                                                               |  |                                                                                      |
| Protection function                   |         | Overload protection, overheat protection<br>(The LED turns on when any protection is activated.)          |  |                                                                                      |
| Response time                         | OFF→ON  | 0.5ms or less                                                                                             |  |                                                                                      |
|                                       | ON→OFF  | 1.5ms or less (resistive load)                                                                            |  |                                                                                      |
| External power supply for output part | Voltage | 10.2 to 28.8VDC (ripple ratio: within 5%)                                                                 |  |                                                                                      |
|                                       | Current | 30mA or lower (at 24VDC and all points ON), excluding external load current                               |  |                                                                                      |
| Surge suppressor                      |         | Zener diode                                                                                               |  |                                                                                      |
| Wiring method for common              |         | 16 points/common (2-wire, waterproof connector type)                                                      |  |                                                                                      |
| Number of occupied stations           |         | 32-point assignment/station (16 points used)                                                              |  |                                                                                      |
| Module power supply                   | Voltage | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                 |  |                                                                                      |
|                                       | Current | 50mA or lower (at 24VDC and all points ON)                                                                |  |                                                                                      |
| Noise immunity                        |         | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition) |  |                                                                                      |
| Withstand voltage                     |         | 500VAC for 1 minute between all DC external terminals and ground                                          |  |                                                                                      |
| Insulation resistance                 |         | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)         |  |                                                                                      |
| Protection degree                     |         | IP67                                                                                                      |  |                                                                                      |
| Weight                                |         | 0.40kg                                                                                                    |  |                                                                                      |
| Accessory                             |         | User's manual                                                                                             |  |                                                                                      |
| Optional item                         |         | Waterproof cap: A6CAP-WP2 (20 pieces)                                                                     |  |                                                                                      |
| Other connecting devices              |         | Refer to Section 1.6.1.                                                                                   |  |                                                                                      |



# MEMO

[illegible]

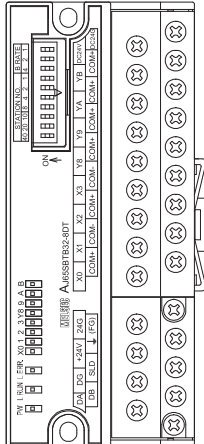
## 6 SPECIFICATIONS FOR COMBINED MODULES

This chapter describes the specifications for a combined module that can be connected to the CC-Link system.

## 6.1 Terminal Block Type Combined Module

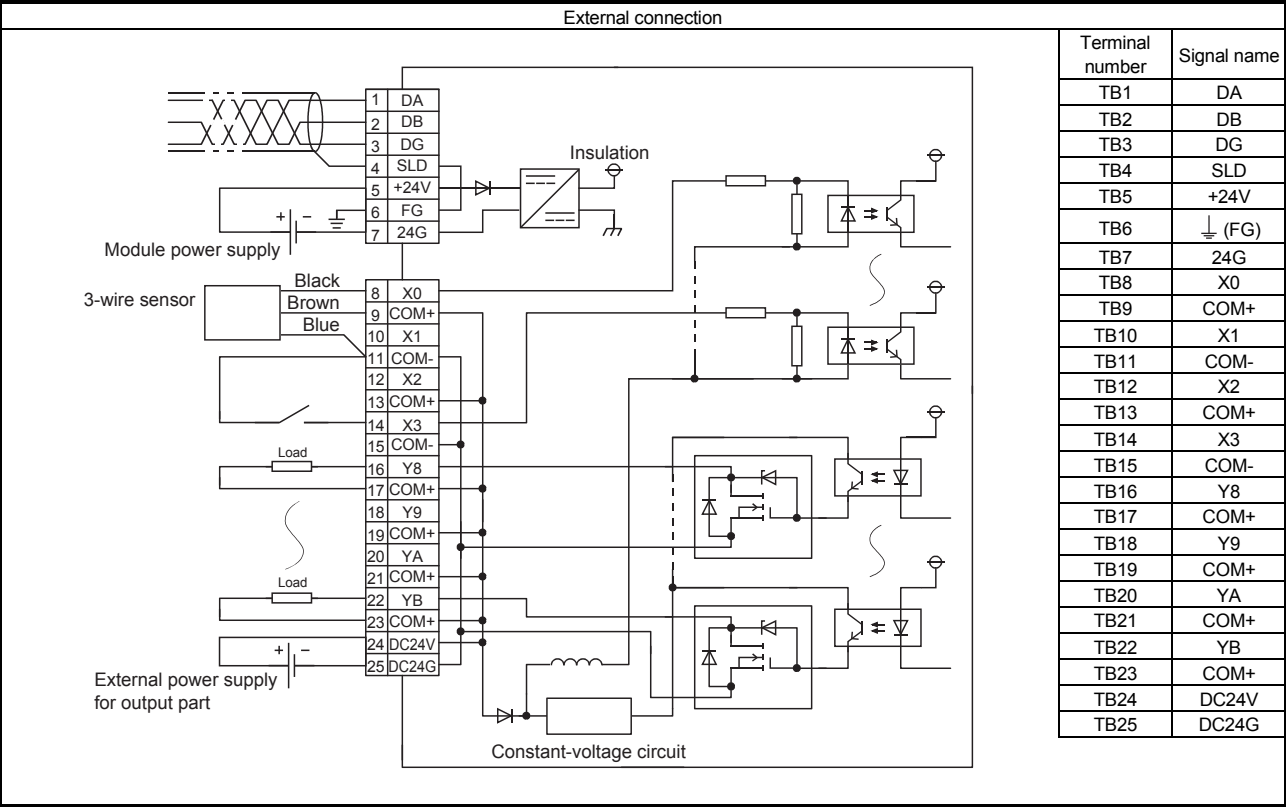
## 6.1.1 AJ65SBTB32-8DT combined module

| Type                                     |                                              | DC input transistor output combined module                                                                                                                                                                                                   |                                       |                              |                                                                                     | Appearance                                                       |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Item                                     |                                              | AJ65SBTB32-8DT                                                                                                                                                                                                                               |                                       |                              |                                                                                     |                                                                  |
| Input                                    |                                              | Output                                                                                                                                                                                                                                       |                                       |                              |                                                                                     |                                                                  |
| Number of input points                   |                                              | 4 points                                                                                                                                                                                                                                     |                                       | Number of output points      |                                                                                     | 4 points                                                         |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 |                                       | Isolation method             |                                                                                     | Photocoupler                                                     |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        |                                       | Rated load voltage           |                                                                                     | 24VDC                                                            |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                  |                                       | Operating load voltage range |                                                                                     | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                     |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                                                                                                                                                                                 |                                       | Max. load current            |                                                                                     | 0.5A/point, 1.2A/common                                          |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         |                                       | Max. inrush current          |                                                                                     | 1.0A, 10ms or less                                               |
| ON voltage/ON current                    |                                              | 14VDC or higher/<br>3.5mA or higher                                                                                                                                                                                                          |                                       | Leakage current at OFF       |                                                                                     | 0.25mA or lower                                                  |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/<br>1.7mA or lower                                                                                                                                                                                                             |                                       | Max. voltage drop at ON      |                                                                                     | 0.3VDC or lower (TYP.) 0.5A,<br>0.6VDC or lower (MAX.) 0.5A      |
| Input resistance                         |                                              | Approx. 3.3kΩ                                                                                                                                                                                                                                |                                       | Output type                  |                                                                                     | Sink type                                                        |
|                                          |                                              |                                                                                                                                                                                                                                              |                                       | Protection function          |                                                                                     | Overload protection, overvoltage protection, overheat protection |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                         | OFF→ON                       | 0.5ms or less                                                                       |                                                                  |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |                                       | ON→OFF                       | 1.5ms or less (resistive load)                                                      |                                                                  |
|                                          |                                              |                                                                                                                                                                                                                                              | External power supply for output part | Voltage                      | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                        |                                                                  |
|                                          |                                              |                                                                                                                                                                                                                                              |                                       | Current                      | 14.6mA or lower<br>(at 24VDC and all points ON),<br>excluding external load current |                                                                  |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                                  | Surge suppressor                      |                              | Zener diode                                                                         |                                                                  |
| Supply current for connected device      |                                              | 1.0A or lower/common                                                                                                                                                                                                                         |                                       |                              |                                                                                     |                                                                  |
| Wiring method for common                 |                                              | 8 points/common (input: 3-wire terminal block type, output: 2-wire terminal block type)                                                                                                                                                      |                                       |                              |                                                                                     |                                                                  |
| Number of occupied stations              |                                              | 32-point assignment/station (8 points used)                                                                                                                                                                                                  |                                       |                              |                                                                                     |                                                                  |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                       |                              |                                                                                     |                                                                  |
|                                          | Current                                      | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                       |                              |                                                                                     |                                                                  |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |                                       |                              |                                                                                     |                                                                  |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                                       |                              |                                                                                     |                                                                  |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                       |                              |                                                                                     |                                                                  |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |                                       |                              |                                                                                     |                                                                  |
| Weight                                   |                                              | 0.18kg                                                                                                                                                                                                                                       |                                       |                              |                                                                                     |                                                                  |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                     |                                       |                              |                                                                                     |                                                                  |
|                                          | I/O power supply part, I/O part              | 18-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                  |                                       |                              |                                                                                     |                                                                  |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                                       |                              |                                                                                     |                                                                  |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                       |                              |                                                                                     |                                                                  |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                       |                              |                                                                                     |                                                                  |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                                       |                              |                                                                                     |                                                                  |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                                       |                              |                                                                                     |                                                                  |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                                       |                              |                                                                                     |                                                                  |



The diagram shows the physical module with its terminal blocks. On the left, there are two 7-pin headers labeled 'TRANSMISSION' and 'POWER SUPPLY'. On the right, there is a large 18-pin header. The pins are numbered 1 through 18. The header is divided into three sections: pins 1-6 are for 'I/O SIGNAL', pins 7-12 are for 'I/O POWER SUPPLY', and pins 13-18 are for 'TRANSMISSION'. The module is labeled 'AJ65SBTB32-8DT' and 'DC INPUT TRANSISTOR OUTPUT COMBINED MODULE'.

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

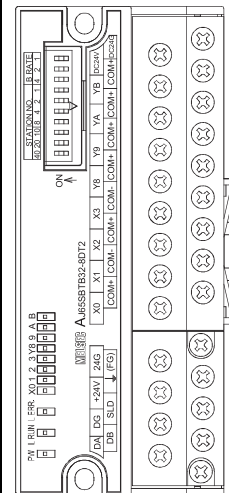




## 6.1.2 AJ65SBTB32-8DT2 combined module

| Type                                     |                                                 | DC input transistor output combined module                                                                                                                                                                                                   |                                       |         |                                                                                     | Appearance |
|------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------|-------------------------------------------------------------------------------------|------------|
| Item                                     |                                                 | AJ65SBTB32-8DT2                                                                                                                                                                                                                              |                                       |         |                                                                                     |            |
| Input                                    |                                                 | Output                                                                                                                                                                                                                                       |                                       |         |                                                                                     |            |
| Number of input points                   |                                                 | 4 points                                                                                                                                                                                                                                     | Number of output points               |         | 4 points                                                                            |            |
| Isolation method                         |                                                 | Photocoupler                                                                                                                                                                                                                                 | Isolation method                      |         | Photocoupler                                                                        |            |
| Rated input voltage                      |                                                 | 24VDC                                                                                                                                                                                                                                        | Rated load voltage                    |         | 24VDC                                                                               |            |
| Rated input current                      |                                                 | Approx. 7mA                                                                                                                                                                                                                                  | Operating load voltage range          |         | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                        |            |
| Operating voltage range                  |                                                 | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                                                                                                                                                                                 | Max. load current                     |         | 0.5A/point, 1.2A/common                                                             |            |
| Max. number of simultaneous input points |                                                 | 100%                                                                                                                                                                                                                                         | Max. inrush current                   |         | 1.0A, 10ms or less                                                                  |            |
| ON voltage/ON current                    |                                                 | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                              | Leakage current at OFF                |         | 0.1mA or lower                                                                      |            |
| OFF voltage/OFF current                  |                                                 | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                 | Max. voltage drop at ON               |         | 0.3VDC or lower (TYP.) 0.5A,<br>0.6VDC or lower (MAX.) 0.5A                         |            |
| Input resistance                         |                                                 | Approx. 3.3kΩ                                                                                                                                                                                                                                | Output type                           |         | Sink type                                                                           |            |
|                                          |                                                 |                                                                                                                                                                                                                                              | Protection function                   |         | None                                                                                |            |
| Response time                            | OFF→ON                                          | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                         | OFF→ON  | 0.5ms or less                                                                       |            |
|                                          | ON→OFF                                          | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |                                       | ON→OFF  | 1.5ms or less (resistive load)                                                      |            |
|                                          |                                                 |                                                                                                                                                                                                                                              | External power supply for output part | Voltage | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                        |            |
|                                          |                                                 |                                                                                                                                                                                                                                              |                                       | Current | 14.6mA or lower<br>(at 24VDC and all points ON),<br>excluding external load current |            |
| Input type                               |                                                 | Positive common (sink type)                                                                                                                                                                                                                  | Surge suppressor                      |         | Zener diode                                                                         |            |
| Supply current for connected device      |                                                 | 1.0A or lower/common                                                                                                                                                                                                                         |                                       |         |                                                                                     |            |
| Wiring method for common                 |                                                 | 8 points/common (input: 3-wire terminal block type, output: 2-wire terminal block type)                                                                                                                                                      |                                       |         |                                                                                     |            |
| Number of occupied stations              |                                                 | 32-point assignment/station (8 points used)                                                                                                                                                                                                  |                                       |         |                                                                                     |            |
| Module power supply                      | Voltage                                         | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                       |         |                                                                                     |            |
|                                          | Current                                         | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                       |         |                                                                                     |            |
| Noise immunity                           |                                                 | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                    |                                       |         |                                                                                     |            |
| Withstand voltage                        |                                                 | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                                       |         |                                                                                     |            |
| Insulation resistance                    |                                                 | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                       |         |                                                                                     |            |
| Protection degree                        |                                                 | IP2X                                                                                                                                                                                                                                         |                                       |         |                                                                                     |            |
| Weight                                   |                                                 | 0.18kg                                                                                                                                                                                                                                       |                                       |         |                                                                                     |            |
| External connection system               | Communication part,<br>module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                  |                                       |         |                                                                                     |            |
|                                          | I/O power supply part,<br>I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                               |                                       |         |                                                                                     |            |
| Module mounting screw                    |                                                 | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                                       |         |                                                                                     |            |
| Applicable DIN rail                      |                                                 | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                       |         |                                                                                     |            |
| Applicable solderless terminal           |                                                 | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                       |         |                                                                                     |            |
| Wire                                     | Material                                        | Copper                                                                                                                                                                                                                                       |                                       |         |                                                                                     |            |
|                                          | Temperature rating                              | 75°C or more                                                                                                                                                                                                                                 |                                       |         |                                                                                     |            |
| Accessory                                |                                                 | User's manual                                                                                                                                                                                                                                |                                       |         |                                                                                     |            |

The diagram illustrates the physical layout of the AJ65SBTB32-8DT2 module. It features a 7-point terminal block on the left for communication, power supply, and FG. The main body contains 32-point assignments for I/O, labeled X0 through X7, Y0 through Y7, and common lines (COM+, COM-, COM+). A DIN rail is shown on the right with 18-point direct-mount terminals. The module is labeled 'AJ65SBTB32-8DT2' and includes a 'PWR' terminal for power supply.

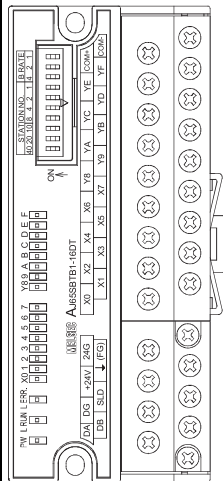


\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

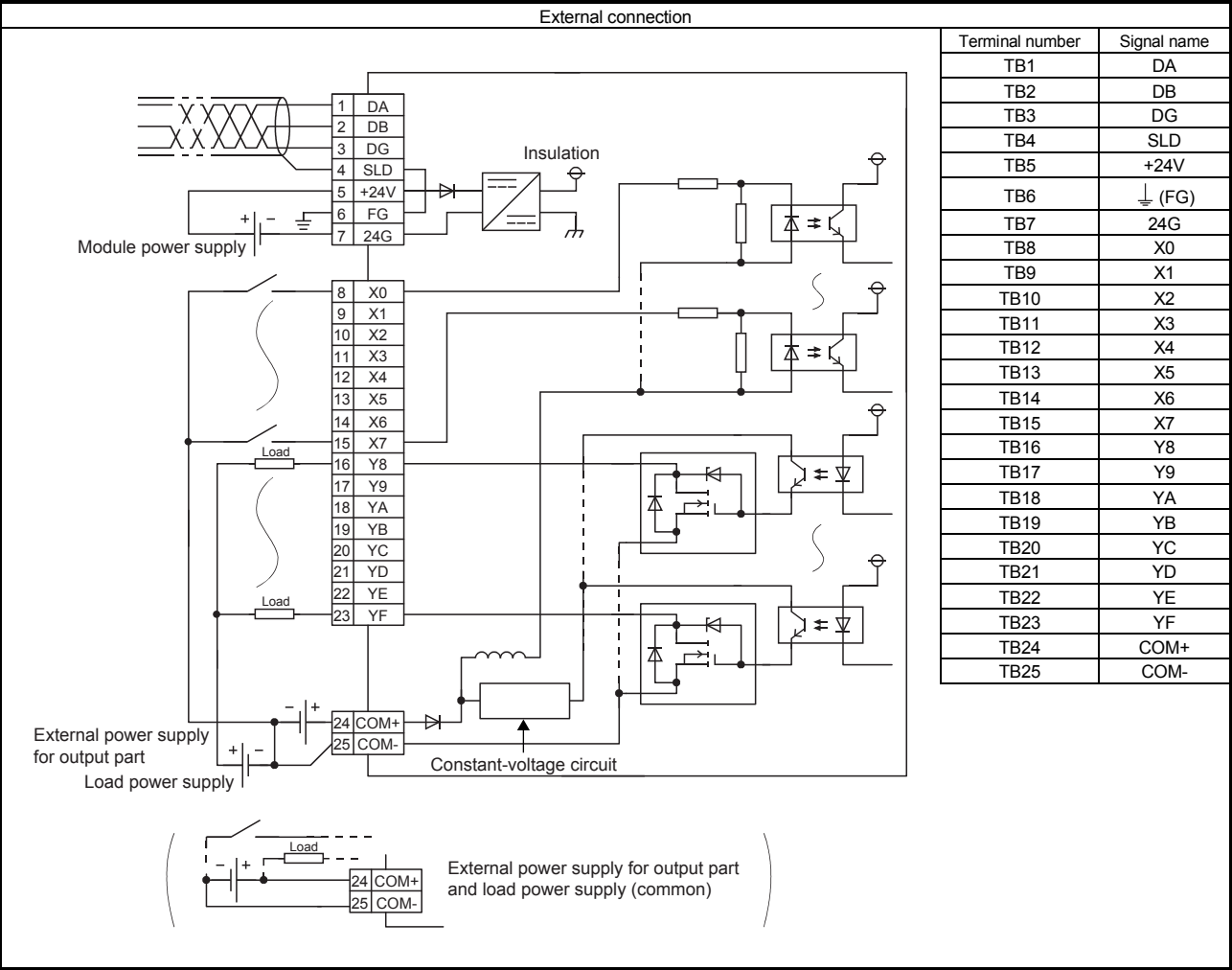


## 6.1.3 AJ65SBTB1-16DT combined module

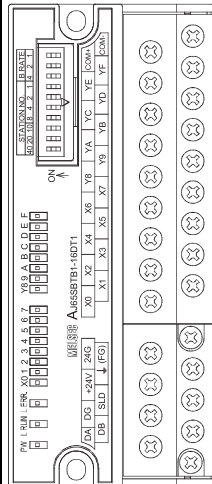
| Item                                     |                                              | Type                                                                                                                                                                                                                                         | DC input transistor output combined module |                                       |                              |                                                                               | Appearance                                                       |  |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------|------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------|--|
|                                          |                                              | AJ65SBTB1-16DT                                                                                                                                                                                                                               |                                            |                                       |                              |                                                                               |                                                                  |  |
| Input                                    |                                              |                                                                                                                                                                                                                                              | Output                                     |                                       |                              |                                                                               |                                                                  |  |
| Number of input points                   |                                              |                                                                                                                                                                                                                                              | 8 points                                   |                                       | Number of output points      |                                                                               | 8 points                                                         |  |
| Isolation method                         |                                              |                                                                                                                                                                                                                                              | Photocoupler                               |                                       | Isolation method             |                                                                               | Photocoupler                                                     |  |
| Rated input voltage                      |                                              |                                                                                                                                                                                                                                              | 24VDC                                      |                                       | Rated load voltage           |                                                                               | 24VDC                                                            |  |
| Rated input current                      |                                              |                                                                                                                                                                                                                                              | Approx. 7mA                                |                                       | Operating load voltage range |                                                                               | 19.2 to 26.4VDC (ripple ratio: within 5%)                        |  |
| Operating voltage range                  |                                              |                                                                                                                                                                                                                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)  |                                       | Max. load current            |                                                                               | 0.5A/point, 2.4A/common                                          |  |
| Max. number of simultaneous input points |                                              |                                                                                                                                                                                                                                              | 100%                                       |                                       | Max. inrush current          |                                                                               | 1.0A, 10ms or less                                               |  |
| ON voltage/ON current                    |                                              |                                                                                                                                                                                                                                              | 14VDC or higher/3.5mA or higher            |                                       | Leakage current at OFF       |                                                                               | 0.25mA or lower                                                  |  |
| OFF voltage/OFF current                  |                                              |                                                                                                                                                                                                                                              | 6VDC or lower/1.7mA or lower               |                                       | Max. voltage drop at ON      |                                                                               | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A         |  |
| Input resistance                         |                                              |                                                                                                                                                                                                                                              | Approx. 3.3kΩ                              |                                       | Output type                  |                                                                               | Sink type                                                        |  |
|                                          |                                              |                                                                                                                                                                                                                                              |                                            |                                       | Protection function          |                                                                               | Overload protection, overvoltage protection, overheat protection |  |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |                                            | Response time                         | OFF→ON                       | 0.5ms or less                                                                 |                                                                  |  |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |                                            |                                       | ON→OFF                       | 1.5ms or less (resistive load)                                                |                                                                  |  |
|                                          |                                              |                                                                                                                                                                                                                                              |                                            | External power supply for output part | Voltage                      | 19.2 to 26.4VDC (ripple ratio: within 5%)                                     |                                                                  |  |
|                                          |                                              |                                                                                                                                                                                                                                              |                                            |                                       | Current                      | 17.8mA or lower (at 24VDC and all points ON), excluding external load current |                                                                  |  |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                                  |                                            | Surge suppressor                      |                              | Zener diode                                                                   |                                                                  |  |
| Wiring method for common                 |                                              | 16 points/common (1-wire, terminal block type )                                                                                                                                                                                              |                                            |                                       |                              |                                                                               |                                                                  |  |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |                                            |                                       |                              |                                                                               |                                                                  |  |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                            |                                       |                              |                                                                               |                                                                  |  |
|                                          | Current                                      | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                            |                                       |                              |                                                                               |                                                                  |  |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |                                            |                                       |                              |                                                                               |                                                                  |  |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                                            |                                       |                              |                                                                               |                                                                  |  |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                            |                                       |                              |                                                                               |                                                                  |  |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |                                            |                                       |                              |                                                                               |                                                                  |  |
| Weight                                   |                                              | 0.18kg                                                                                                                                                                                                                                       |                                            |                                       |                              |                                                                               |                                                                  |  |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                  |                                            |                                       |                              |                                                                               |                                                                  |  |
|                                          | I/O power supply part, I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                               |                                            |                                       |                              |                                                                               |                                                                  |  |
|                                          |                                              |                                                                                                                                                                                                                                              |                                            |                                       |                              |                                                                               |                                                                  |  |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                                            |                                       |                              |                                                                               |                                                                  |  |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                            |                                       |                              |                                                                               |                                                                  |  |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                            |                                       |                              |                                                                               |                                                                  |  |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                                            |                                       |                              |                                                                               |                                                                  |  |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                                            |                                       |                              |                                                                               |                                                                  |  |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                                            |                                       |                              |                                                                               |                                                                  |  |



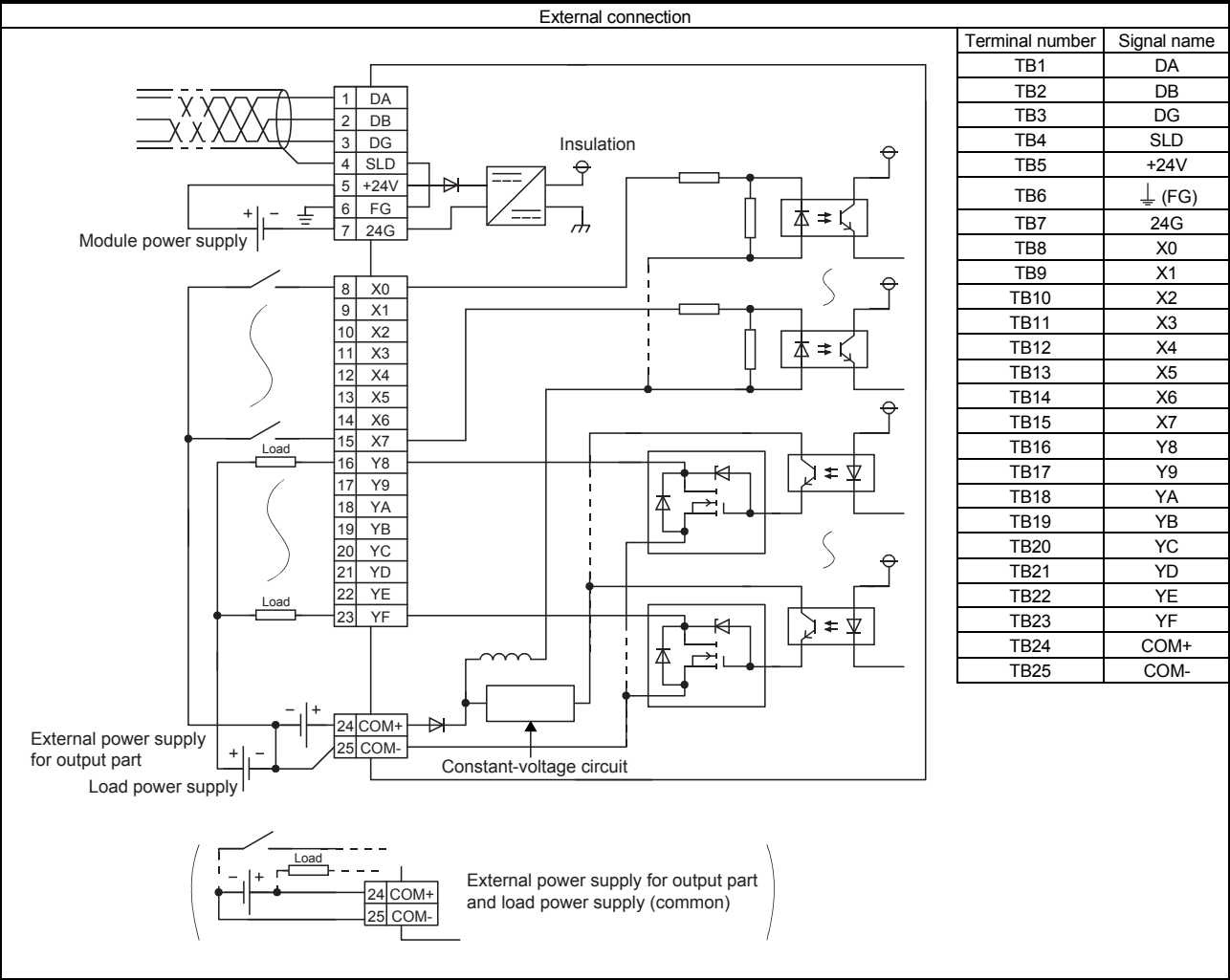
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 6.1.4 AJ65SBTB1-16DT1 combined module

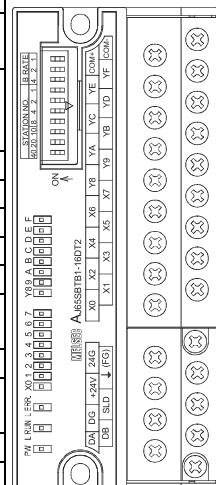
| Type                                     |                                              | DC input transistor output combined module                                                                                                                                                                                                   |                                       |         |                                                                               | Appearance                                                                           |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------|-------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Item                                     |                                              | AJ65SBTB1-16DT1                                                                                                                                                                                                                              |                                       |         |                                                                               |                                                                                      |
| Input                                    |                                              | Output                                                                                                                                                                                                                                       |                                       |         |                                                                               |  |
| Number of input points                   |                                              | 8 points                                                                                                                                                                                                                                     | Number of output points               |         | 8 points                                                                      |                                                                                      |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 | Isolation method                      |         | Photocoupler                                                                  |                                                                                      |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        | Rated load voltage                    |         | 24VDC                                                                         |                                                                                      |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                                                                                                                                  | Operating load voltage range          |         | 19.2 to 26.4VDC (ripple ratio: within 5%)                                     |                                                                                      |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    | Max. load current                     |         | 0.5A/point, 2.4A/common                                                       |                                                                                      |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         | Max. inrush current                   |         | 1.0A, 10ms or less                                                            |                                                                                      |
| ON voltage/ON current                    |                                              | 15VDC or higher/3mA or higher                                                                                                                                                                                                                | Leakage current at OFF                |         | 0.25mA or lower                                                               |                                                                                      |
| OFF voltage/OFF current                  |                                              | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                                 | Max. voltage drop at ON               |         | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                      |                                                                                      |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                                                                                                                                | Output type                           |         | Sink type                                                                     |                                                                                      |
|                                          |                                              |                                                                                                                                                                                                                                              | Protection function                   |         | Overload protection, overvoltage protection, overheat protection              |                                                                                      |
| Response time                            | OFF→ON                                       | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                         | OFF→ON  | 0.5ms or less                                                                 |                                                                                      |
|                                          | ON→OFF                                       | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                     |                                       | ON→OFF  | 1.5ms or less (resistive load)                                                |                                                                                      |
|                                          |                                              |                                                                                                                                                                                                                                              | External power supply for output part | Voltage | 19.2 to 26.4VDC (ripple ratio: within 5%)                                     |                                                                                      |
|                                          |                                              |                                                                                                                                                                                                                                              |                                       | Current | 17.8mA or lower (at 24VDC and all points ON), excluding external load current |                                                                                      |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                                  | Surge suppressor                      |         | Zener diode                                                                   |                                                                                      |
| Wiring method for common                 |                                              | 16 points/common (1-wire, terminal block type)                                                                                                                                                                                               |                                       |         |                                                                               |                                                                                      |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |                                       |         |                                                                               |                                                                                      |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                       |         |                                                                               |                                                                                      |
|                                          | Current                                      | 55mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                       |         |                                                                               |                                                                                      |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |                                       |         |                                                                               |                                                                                      |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                                       |         |                                                                               |                                                                                      |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                       |         |                                                                               |                                                                                      |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |                                       |         |                                                                               |                                                                                      |
| Weight                                   |                                              | 0.18kg                                                                                                                                                                                                                                       |                                       |         |                                                                               |                                                                                      |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                  |                                       |         |                                                                               |                                                                                      |
|                                          | I/O power supply part, I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                               |                                       |         |                                                                               |                                                                                      |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                                       |         |                                                                               |                                                                                      |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                       |         |                                                                               |                                                                                      |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                       |         |                                                                               |                                                                                      |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                                       |         |                                                                               |                                                                                      |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                                       |         |                                                                               |                                                                                      |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                                       |         |                                                                               |                                                                                      |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

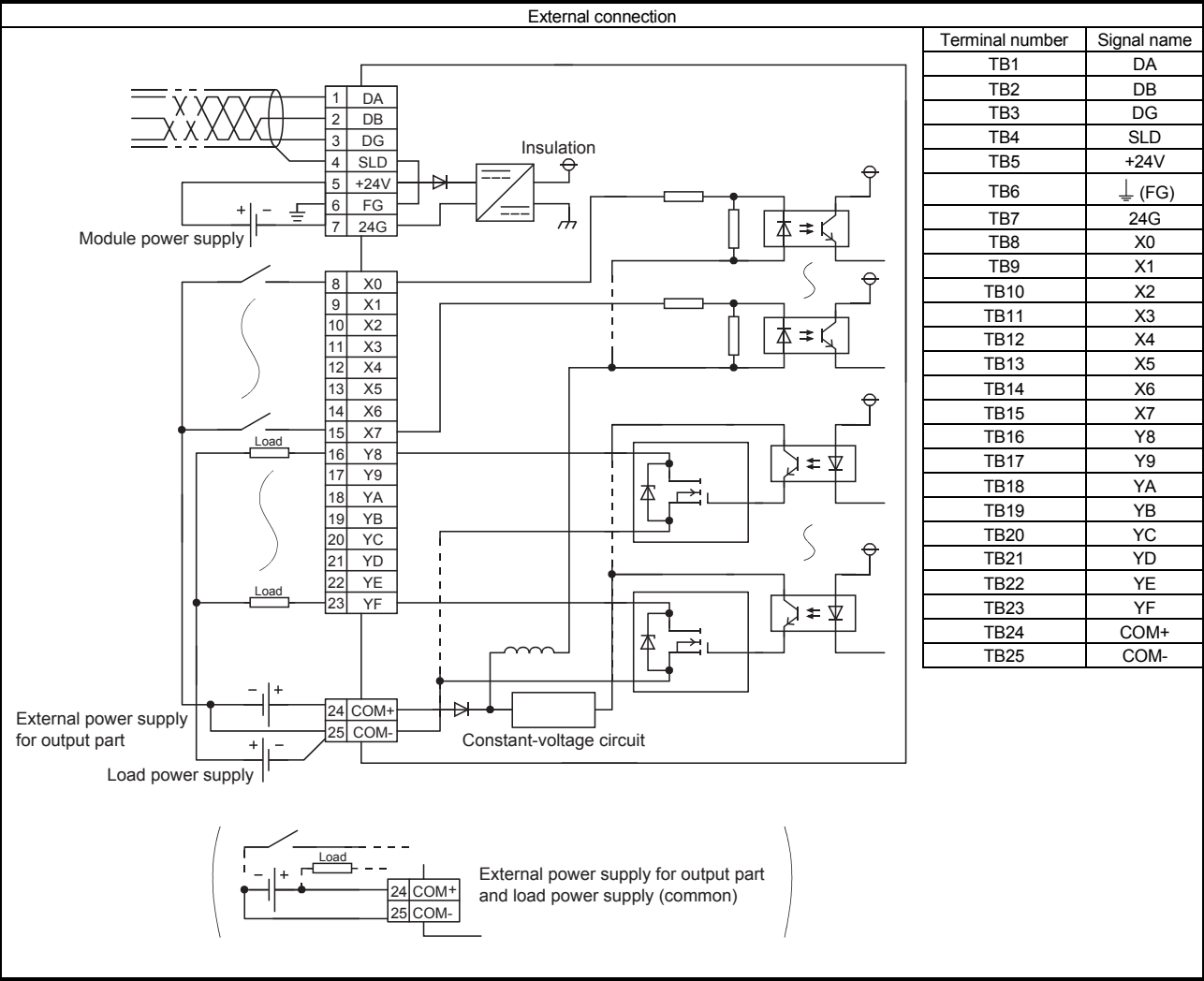


## 6.1.5 AJ65SBTB1-16DT2 combined module

| Item                                     |                                              | Type                                                                                                                                                                                        | DC input transistor output combined module                                                                                                                                                                                                   |                              |                                                                                     |                                                             | Appearance |
|------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------|------------|
|                                          |                                              | AJ65SBTB1-16DT2                                                                                                                                                                             |                                                                                                                                                                                                                                              |                              |                                                                                     |                                                             |            |
| Input                                    |                                              |                                                                                                                                                                                             | Output                                                                                                                                                                                                                                       |                              |                                                                                     |                                                             |            |
| Number of input points                   |                                              |                                                                                                                                                                                             | 8 points                                                                                                                                                                                                                                     | Number of output points      |                                                                                     | 8 points                                                    |            |
| Isolation method                         |                                              |                                                                                                                                                                                             | Photocoupler                                                                                                                                                                                                                                 | Isolation method             |                                                                                     | Photocoupler                                                |            |
| Rated input voltage                      |                                              |                                                                                                                                                                                             | 24VDC                                                                                                                                                                                                                                        | Rated load voltage           |                                                                                     | 24VDC                                                       |            |
| Rated input current                      |                                              |                                                                                                                                                                                             | Approx. 7mA                                                                                                                                                                                                                                  | Operating load voltage range |                                                                                     | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                |            |
| Operating voltage range                  |                                              |                                                                                                                                                                                             | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                                                                                                                                                                                 | Max. load current            |                                                                                     | 0.5A/point, 2.4A/common                                     |            |
| Max. number of simultaneous input points |                                              |                                                                                                                                                                                             | 100%                                                                                                                                                                                                                                         | Max. inrush current          |                                                                                     | 1.0A, 10ms or less                                          |            |
| ON voltage/ON current                    |                                              |                                                                                                                                                                                             | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                              | Leakage current at OFF       |                                                                                     | 0.1mA or lower                                              |            |
| OFF voltage/OFF current                  |                                              |                                                                                                                                                                                             | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                 | Max. voltage drop at ON      |                                                                                     | 0.3VDC or lower (TYP.) 0.5A,<br>0.6VDC or lower (MAX.) 0.5A |            |
| Input resistance                         |                                              |                                                                                                                                                                                             | Approx. 3.3kΩ                                                                                                                                                                                                                                | Output type                  |                                                                                     | Sink type                                                   |            |
|                                          |                                              |                                                                                                                                                                                             |                                                                                                                                                                                                                                              | Protection function          |                                                                                     | None                                                        |            |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                    | Response time                                                                                                                                                                                                                                | OFF→ON                       | 0.5ms or less                                                                       |                                                             |            |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                    |                                                                                                                                                                                                                                              | ON→OFF                       | 1.5ms or less (resistive load)                                                      |                                                             |            |
|                                          |                                              |                                                                                                                                                                                             | External power supply for output part                                                                                                                                                                                                        | Voltage                      | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                        |                                                             |            |
|                                          |                                              |                                                                                                                                                                                             |                                                                                                                                                                                                                                              | Current                      | 17.8mA or lower<br>(at 24VDC and all points ON),<br>excluding external load current |                                                             |            |
| Input type                               |                                              |                                                                                                                                                                                             | Positive common (sink type)                                                                                                                                                                                                                  | Surge suppressor             |                                                                                     | Zener diode                                                 |            |
| Wiring method for common                 |                                              |                                                                                                                                                                                             | 16 points/common (1-wire, terminal block type)                                                                                                                                                                                               |                              |                                                                                     |                                                             |            |
| Number of occupied stations              |                                              |                                                                                                                                                                                             | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |                              |                                                                                     |                                                             |            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                   |                                                                                                                                                                                                                                              |                              |                                                                                     |                                                             |            |
|                                          | Current                                      | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                  |                                                                                                                                                                                                                                              |                              |                                                                                     |                                                             |            |
| Noise immunity                           |                                              |                                                                                                                                                                                             | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                    |                              |                                                                                     |                                                             |            |
| Withstand voltage                        |                                              |                                                                                                                                                                                             | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                              |                                                                                     |                                                             |            |
| Insulation resistance                    |                                              |                                                                                                                                                                                             | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                              |                                                                                     |                                                             |            |
| Protection degree                        |                                              |                                                                                                                                                                                             | IP2X                                                                                                                                                                                                                                         |                              |                                                                                     |                                                             |            |
| Weight                                   |                                              |                                                                                                                                                                                             | 0.18kg                                                                                                                                                                                                                                       |                              |                                                                                     |                                                             |            |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less |                                                                                                                                                                                                                                              |                              |                                                                                     |                                                             |            |
|                                          | I/O power supply part, I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less              |                                                                                                                                                                                                                                              |                              |                                                                                     |                                                             |            |
|                                          |                                              |                                                                                                                                                                                             |                                                                                                                                                                                                                                              |                              |                                                                                     |                                                             |            |
| Module mounting screw                    |                                              |                                                                                                                                                                                             | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                              |                                                                                     |                                                             |            |
| Applicable DIN rail                      |                                              |                                                                                                                                                                                             | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                              |                                                                                     |                                                             |            |
| Applicable solderless terminal           |                                              |                                                                                                                                                                                             | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                              |                                                                                     |                                                             |            |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                      |                                                                                                                                                                                                                                              |                              |                                                                                     |                                                             |            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                |                                                                                                                                                                                                                                              |                              |                                                                                     |                                                             |            |
| Accessory                                |                                              |                                                                                                                                                                                             | User's manual                                                                                                                                                                                                                                |                              |                                                                                     |                                                             |            |



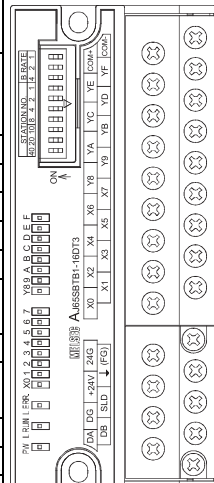
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



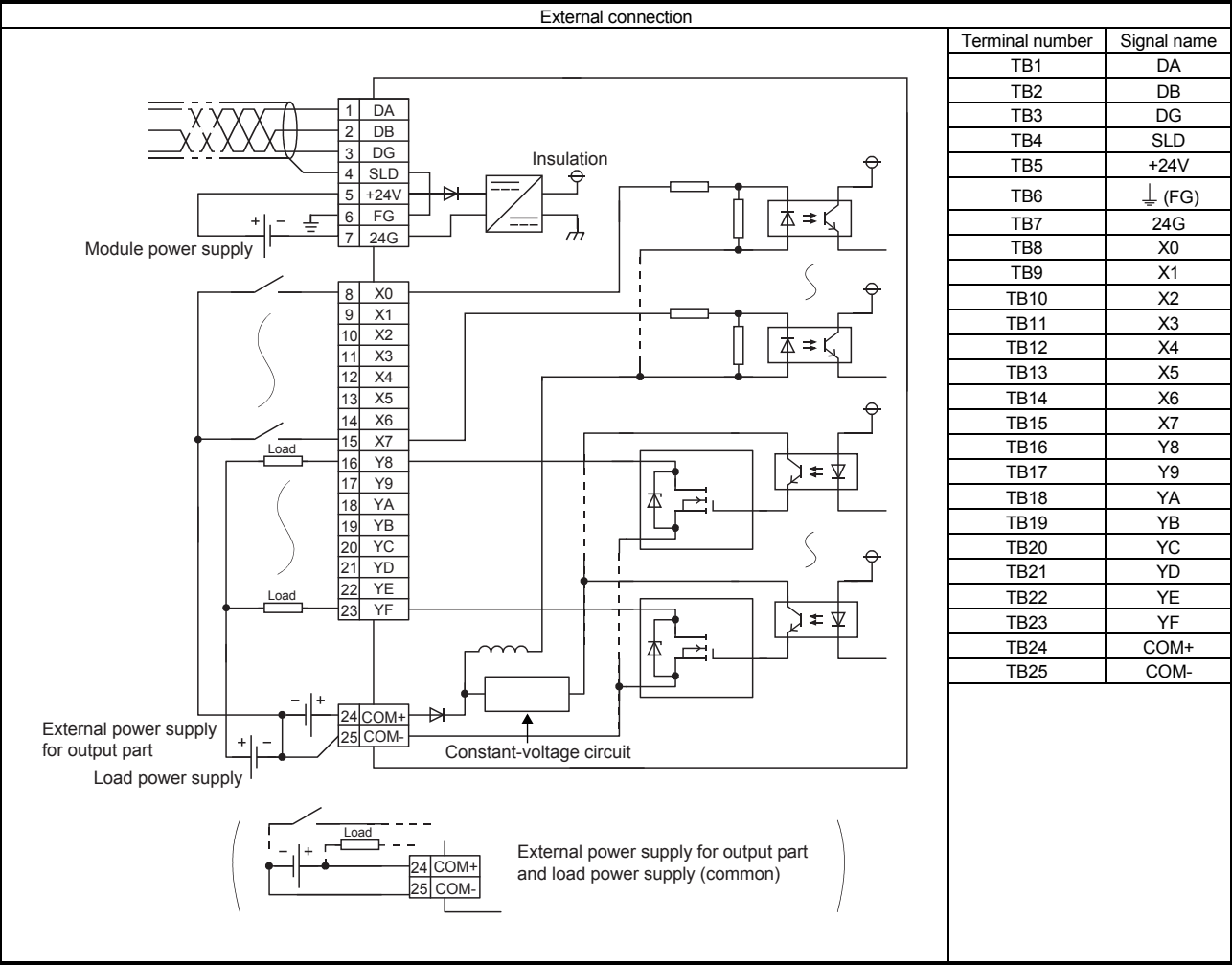


## 6.1.6 AJ65SBTB1-16DT3 combined module

| Type                                     |                                              | DC input transistor output combined module                                                                                                                                                                                                   |                                       |         |                                                                                     | Appearance |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------|-------------------------------------------------------------------------------------|------------|
| Item                                     |                                              | AJ65SBTB1-16DT3                                                                                                                                                                                                                              |                                       |         |                                                                                     |            |
| Input                                    |                                              |                                                                                                                                                                                                                                              | Output                                |         |                                                                                     |            |
| Number of input points                   |                                              | 8 points                                                                                                                                                                                                                                     | Number of output points               |         | 8 points                                                                            |            |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 | Isolation method                      |         | Photocoupler                                                                        |            |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        | Rated load voltage                    |         | 24VDC                                                                               |            |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                                                                                                                                  | Operating load voltage range          |         | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                        |            |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                                                                                                                                                                                 | Max. load current                     |         | 0.5A/point, 2.4A/common                                                             |            |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         | Max. inrush current                   |         | 1.0A, 10ms or less                                                                  |            |
| ON voltage/ON current                    |                                              | 15VDC or higher/3mA or higher                                                                                                                                                                                                                | Leakage current at OFF                |         | 0.1mA or lower                                                                      |            |
| OFF voltage/OFF current                  |                                              | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                                 | Max. voltage drop at ON               |         | 0.3VDC or lower (TYP.) 0.5A,<br>0.6VDC or lower (MAX.) 0.5A                         |            |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                                                                                                                                | Output type                           |         | Sink type                                                                           |            |
|                                          |                                              |                                                                                                                                                                                                                                              | Protection function                   |         | None                                                                                |            |
| Response time                            | OFF→ON                                       | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                         | OFF→ON  | 0.5ms or less                                                                       |            |
|                                          | ON→OFF                                       | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                     |                                       | ON→OFF  | 1.5ms or less (resistive load)                                                      |            |
|                                          |                                              |                                                                                                                                                                                                                                              | External power supply for output part | Voltage | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                        |            |
|                                          |                                              |                                                                                                                                                                                                                                              |                                       | Current | 17.8mA or lower<br>(at 24VDC and all points ON),<br>excluding external load current |            |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                                  | Surge suppressor                      |         | Zener diode                                                                         |            |
| Wiring method for common                 |                                              | 16 points/common (1-wire, terminal block type)                                                                                                                                                                                               |                                       |         |                                                                                     |            |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |                                       |         |                                                                                     |            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                       |         |                                                                                     |            |
|                                          | Current                                      | 55mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                       |         |                                                                                     |            |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                    |                                       |         |                                                                                     |            |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                                       |         |                                                                                     |            |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                       |         |                                                                                     |            |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |                                       |         |                                                                                     |            |
| Weight                                   |                                              | 0.18kg                                                                                                                                                                                                                                       |                                       |         |                                                                                     |            |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                  |                                       |         |                                                                                     |            |
|                                          | I/O power supply part, I/O part              | 18-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                               |                                       |         |                                                                                     |            |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                                       |         |                                                                                     |            |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                       |         |                                                                                     |            |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                       |         |                                                                                     |            |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                                       |         |                                                                                     |            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                                       |         |                                                                                     |            |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                                       |         |                                                                                     |            |

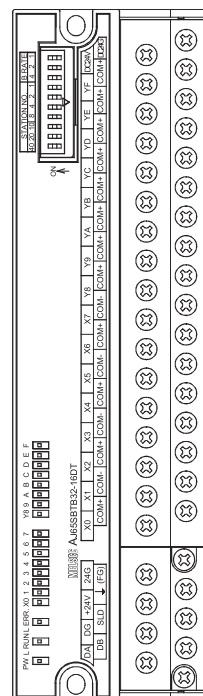


\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

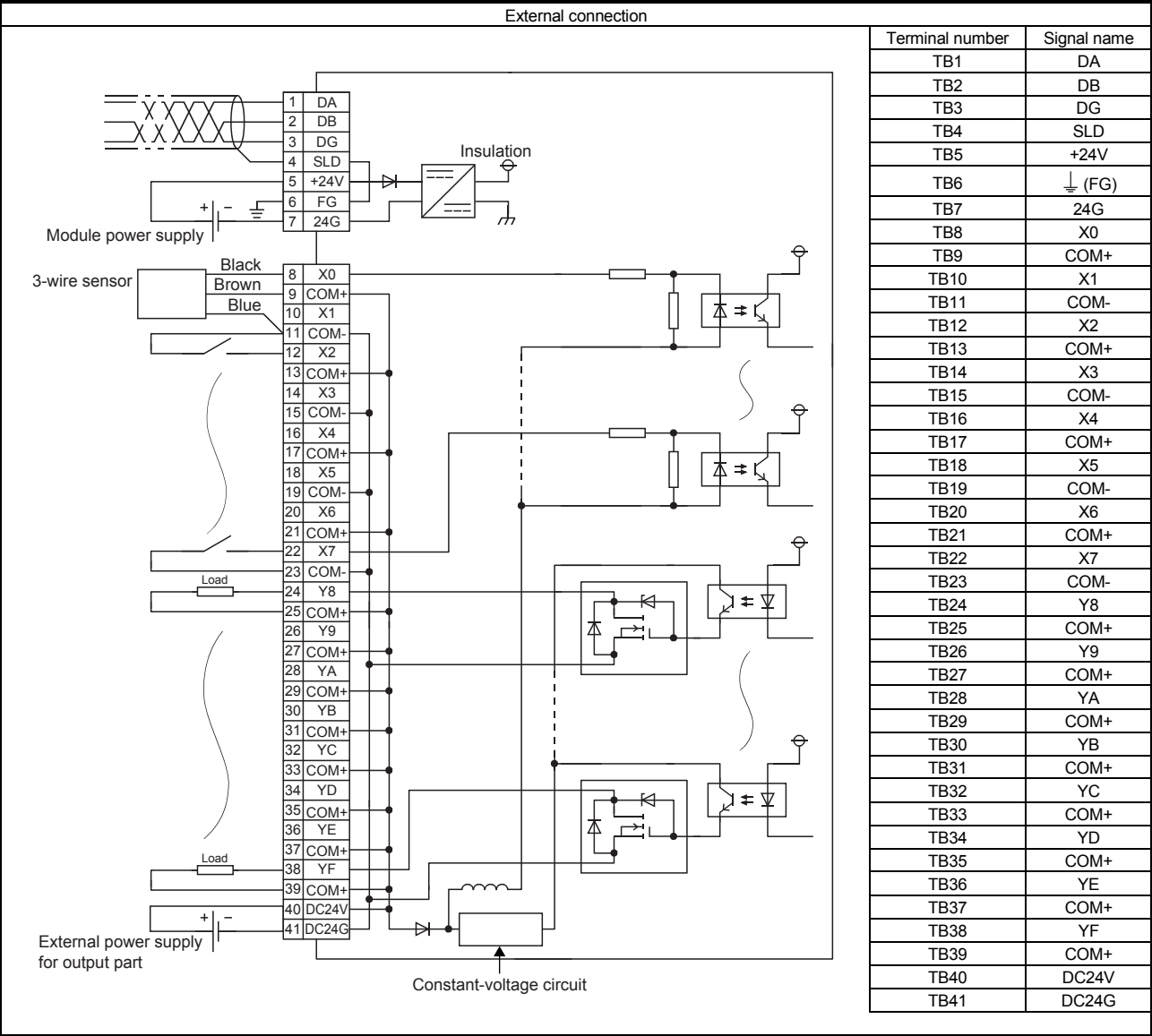


## 6.1.7 AJ65SBTB32-16DT combined module

| Type |  | DC input transistor output combined module |  |        |  | Appearance |
|------|--|--------------------------------------------|--|--------|--|------------|
| Item |  | AJ65SBTB32-16DT                            |  |        |  |            |
|      |  | Input                                      |  | Output |  |            |

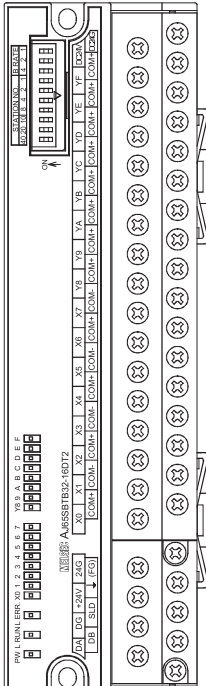


\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

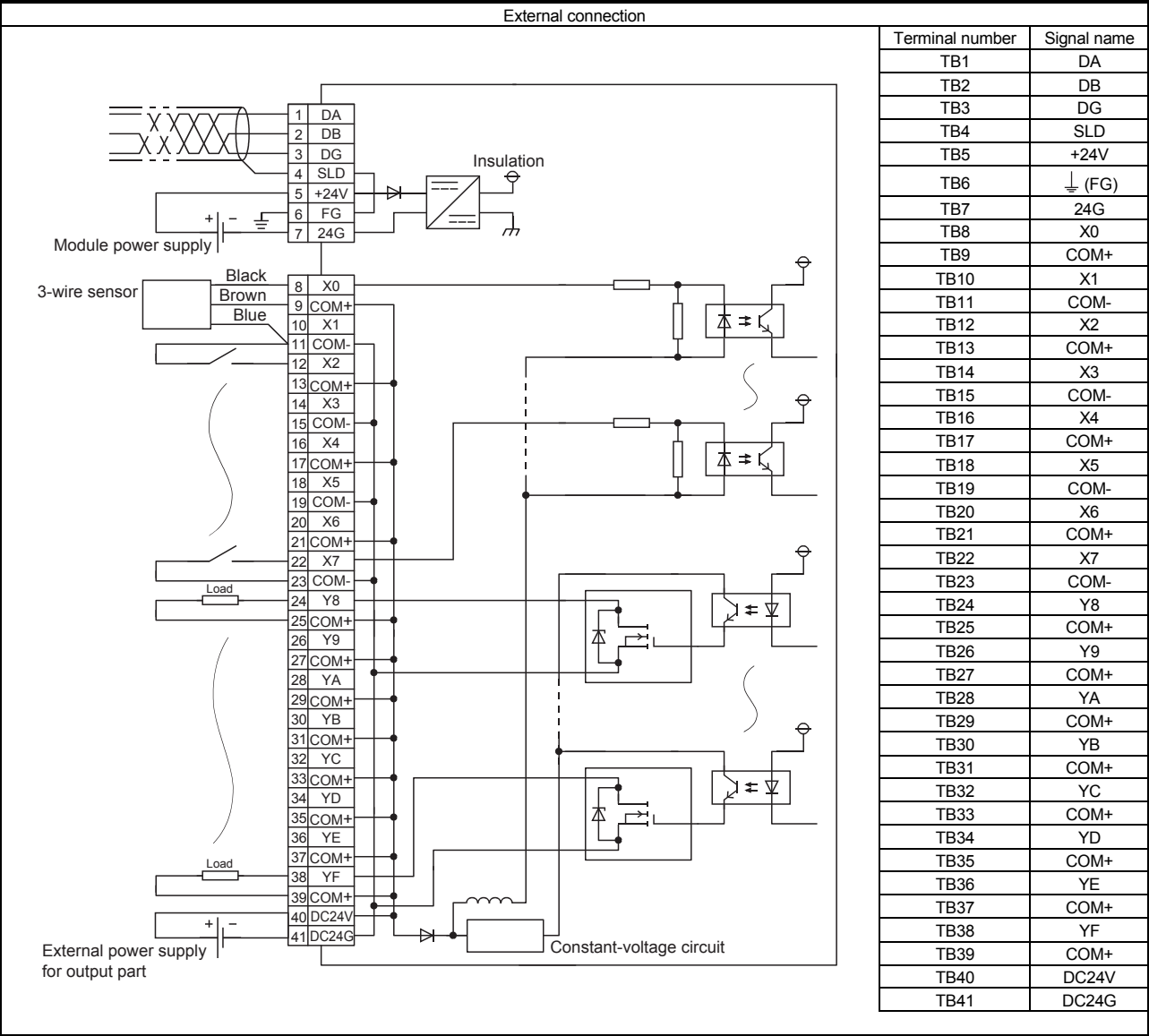


## 6.1.8 AJ65SBTB32-16DT2 combined module

| Type                                     |                                              | DC input transistor output combined module                                                                                                                                                                                                   |  |                                       |         | Appearance                                                                          |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------|---------|-------------------------------------------------------------------------------------|
| Item                                     |                                              | AJ65SBTB32-16DT2                                                                                                                                                                                                                             |  |                                       |         |                                                                                     |
| Input                                    |                                              | Output                                                                                                                                                                                                                                       |  |                                       |         |                                                                                     |
| Number of input points                   |                                              | 8 points                                                                                                                                                                                                                                     |  | Number of output points               |         | 8 points                                                                            |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 |  | Isolation method                      |         | Photocoupler                                                                        |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        |  | Rated load voltage                    |         | 24VDC                                                                               |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                  |  | Operating load voltage range          |         | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                        |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                                                                                                                                                                                 |  | Max. load current                     |         | 0.5A/point, 2.4A/common                                                             |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         |  | Max. inrush current                   |         | 1.0A, 10ms or less                                                                  |
| ON voltage/ON current                    |                                              | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                              |  | Leakage current at OFF                |         | 0.1mA or lower                                                                      |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                 |  | Max. voltage drop at ON               |         | 0.3VDC or lower (TYP.) 0.5A,<br>0.6VDC or lower (MAX.) 0.5A                         |
| Input resistance                         |                                              | Approx. 3.3kΩ                                                                                                                                                                                                                                |  | Output type                           |         | Sink type                                                                           |
|                                          |                                              |                                                                                                                                                                                                                                              |  | Protection function                   |         | None                                                                                |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |  | Response time                         | OFF→ON  | 0.5ms or less                                                                       |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |  |                                       | ON→OFF  | 1.5ms or less (resistive load)                                                      |
|                                          |                                              |                                                                                                                                                                                                                                              |  | External power supply for output part | Voltage | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                        |
|                                          |                                              |                                                                                                                                                                                                                                              |  |                                       | Current | 17.8mA or lower<br>(at 24VDC and all points ON),<br>excluding external load current |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                                  |  | Surge suppressor                      |         | Zener diode                                                                         |
| Supply current for connected device      |                                              | 1.0A or lower/common                                                                                                                                                                                                                         |  |                                       |         |                                                                                     |
| Wiring method for common                 |                                              | 16 points/common (input: 3-wire terminal block type, output: 2-wire terminal block type)                                                                                                                                                     |  |                                       |         |                                                                                     |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |  |                                       |         |                                                                                     |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |  |                                       |         |                                                                                     |
|                                          | Current                                      | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |  |                                       |         |                                                                                     |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |  |                                       |         |                                                                                     |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |  |                                       |         |                                                                                     |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |  |                                       |         |                                                                                     |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |  |                                       |         |                                                                                     |
| Weight                                   |                                              | 0.25kg                                                                                                                                                                                                                                       |  |                                       |         |                                                                                     |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                  |  |                                       |         |                                                                                     |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                               |  |                                       |         |                                                                                     |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |  |                                       |         |                                                                                     |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |  |                                       |         |                                                                                     |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |  |                                       |         |                                                                                     |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |  |                                       |         |                                                                                     |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |  |                                       |         |                                                                                     |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |  |                                       |         |                                                                                     |



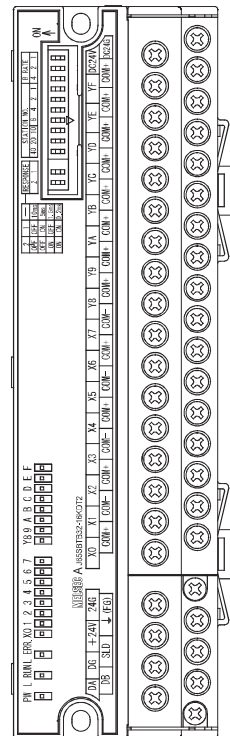
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



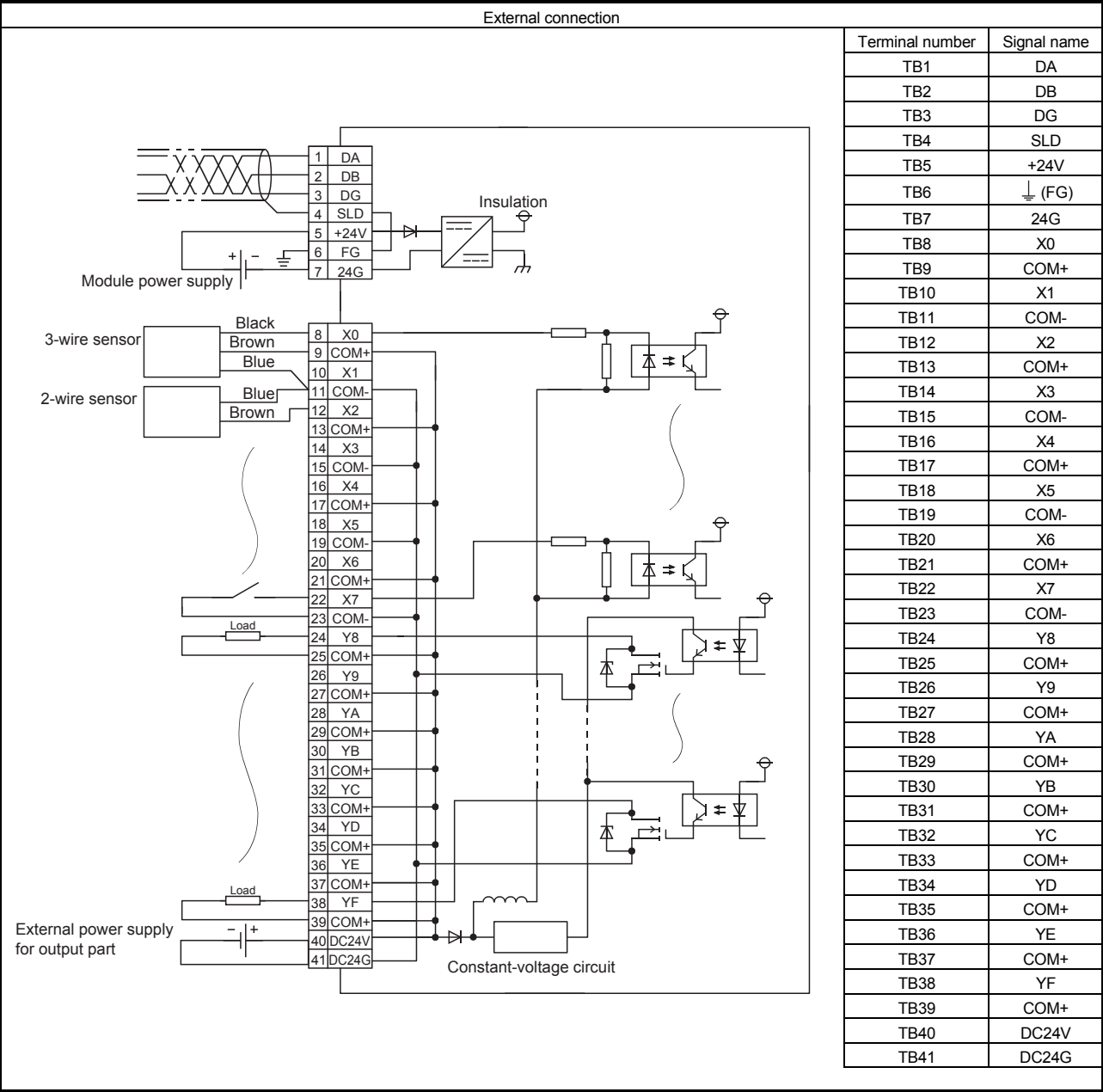
## 6.1.9 AJ65SBTB32-16KDT2 combined module

| Item                                     |                                              | Type                                                                                                                                                                                        | DC input transistor output combined module                                                                                                                                                                                                   |             |              |                                       |                              |                                                                                   |             |                                                             |  |  | Appearance |  |
|------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|---------------------------------------|------------------------------|-----------------------------------------------------------------------------------|-------------|-------------------------------------------------------------|--|--|------------|--|
|                                          |                                              | AJ65SBTB32-16KDT2                                                                                                                                                                           |                                                                                                                                                                                                                                              |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Input                                    |                                              |                                                                                                                                                                                             | Output                                                                                                                                                                                                                                       |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Number of input points                   |                                              |                                                                                                                                                                                             | 8 points                                                                                                                                                                                                                                     |             |              |                                       | Number of output points      |                                                                                   |             | 8 points                                                    |  |  |            |  |
| Isolation method                         |                                              |                                                                                                                                                                                             | Photocoupler                                                                                                                                                                                                                                 |             |              |                                       | Isolation method             |                                                                                   |             | Photocoupler                                                |  |  |            |  |
| Rated input voltage                      |                                              |                                                                                                                                                                                             | 24VDC                                                                                                                                                                                                                                        |             |              |                                       | Rated load voltage           |                                                                                   |             | 24VDC                                                       |  |  |            |  |
| Rated input current                      |                                              |                                                                                                                                                                                             | Approx. 7mA                                                                                                                                                                                                                                  |             |              |                                       | Operating load voltage range |                                                                                   |             | 20.4 to 28.8VDC<br>(ripple ratio: within 5%)                |  |  |            |  |
| Operating voltage range                  |                                              |                                                                                                                                                                                             | 20.4 to 28.8VDC<br>(ripple ratio: within 5%)                                                                                                                                                                                                 |             |              |                                       | Max. load current            |                                                                                   |             | 0.5A/point, 2.4A/common                                     |  |  |            |  |
| Max. number of simultaneous input points |                                              |                                                                                                                                                                                             | 100%                                                                                                                                                                                                                                         |             |              |                                       | Max. inrush current          |                                                                                   |             | 1.0A, 10ms or less                                          |  |  |            |  |
| ON voltage/ON current                    |                                              |                                                                                                                                                                                             | 14VDC or higher/4mA or higher                                                                                                                                                                                                                |             |              |                                       | Leakage current at OFF       |                                                                                   |             | 0.1mA or lower                                              |  |  |            |  |
| OFF voltage/OFF current                  |                                              |                                                                                                                                                                                             | 5.5VDC or lower/1.7mA or lower                                                                                                                                                                                                               |             |              |                                       | Max. voltage drop at ON      |                                                                                   |             | 0.3VDC or lower (TYP.) 0.5A,<br>0.6VDC or lower (MAX.) 0.5A |  |  |            |  |
| Input resistance                         |                                              |                                                                                                                                                                                             | Approx. 3.0kΩ                                                                                                                                                                                                                                |             |              |                                       | Output type                  |                                                                                   | Sink type   |                                                             |  |  |            |  |
|                                          |                                              |                                                                                                                                                                                             |                                                                                                                                                                                                                                              |             |              |                                       | Protection function          |                                                                                   | None        |                                                             |  |  |            |  |
| Response time                            | Input response speed                         | 0.2ms                                                                                                                                                                                       | 1.5ms                                                                                                                                                                                                                                        | 5ms         | 10ms         | Response time                         | OFF→ON                       | 0.5ms or less                                                                     |             |                                                             |  |  |            |  |
|                                          | OFF→ON                                       | 0.2ms or less                                                                                                                                                                               | 1.5ms or less                                                                                                                                                                                                                                | 5ms or less | 10ms or less |                                       | ON→OFF                       | 1.5ms or less (resistive load)                                                    |             |                                                             |  |  |            |  |
|                                          | ON→OFF                                       | 0.2ms or less                                                                                                                                                                               | 1.5ms or less                                                                                                                                                                                                                                | 5ms or less | 10ms or less |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
|                                          |                                              |                                                                                                                                                                                             |                                                                                                                                                                                                                                              |             |              | External power supply for output part | Voltage                      | 19.2 to 28.8VDC<br>(ripple ratio: within 5%)                                      |             |                                                             |  |  |            |  |
|                                          |                                              |                                                                                                                                                                                             |                                                                                                                                                                                                                                              |             |              |                                       | Current                      | 10mA or lower<br>(at 24VDC and all points ON),<br>excluding external load current |             |                                                             |  |  |            |  |
| Input type                               |                                              |                                                                                                                                                                                             | Positive common (sink type)                                                                                                                                                                                                                  |             |              |                                       | Surge suppressor             |                                                                                   | Zener diode |                                                             |  |  |            |  |
| Supply current for connected device      |                                              |                                                                                                                                                                                             | 1.0A or lower/common                                                                                                                                                                                                                         |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Wiring method for common                 |                                              |                                                                                                                                                                                             | 16 points/common (input: 3-wire terminal block type, output: 2-wire terminal block type)                                                                                                                                                     |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Number of occupied stations              |                                              |                                                                                                                                                                                             | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                   |                                                                                                                                                                                                                                              |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
|                                          | Current                                      | 55mA or lower (at 24VDC and all points ON)                                                                                                                                                  |                                                                                                                                                                                                                                              |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Noise immunity                           |                                              |                                                                                                                                                                                             | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                    |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Withstand voltage                        |                                              |                                                                                                                                                                                             | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Insulation resistance                    |                                              |                                                                                                                                                                                             | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Protection degree                        |                                              |                                                                                                                                                                                             | IP2X                                                                                                                                                                                                                                         |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Weight                                   |                                              |                                                                                                                                                                                             | 0.26kg                                                                                                                                                                                                                                       |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less |                                                                                                                                                                                                                                              |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less              |                                                                                                                                                                                                                                              |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Module mounting screw                    |                                              |                                                                                                                                                                                             | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Applicable DIN rail                      |                                              |                                                                                                                                                                                             | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Applicable solderless terminal           |                                              |                                                                                                                                                                                             | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                      |                                                                                                                                                                                                                                              |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                |                                                                                                                                                                                                                                              |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |
| Accessory                                |                                              |                                                                                                                                                                                             | User's manual                                                                                                                                                                                                                                |             |              |                                       |                              |                                                                                   |             |                                                             |  |  |            |  |

The diagram illustrates the physical layout of the AJ65SBTB32-16KDT2 module. It features a 32-point terminal block on the left, organized into two rows of 16 points each. The top row is labeled with input points (X1 to X16) and the bottom row with output points (Y1 to Y16). The module is designed for DIN rail mounting, with a mounting bracket on the right side. The diagram also shows the internal wiring connections for the module, including the power supply and signal lines.



\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

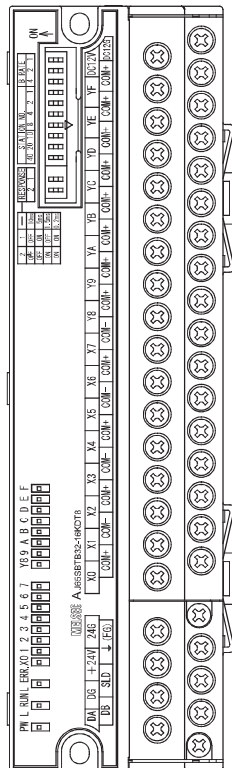




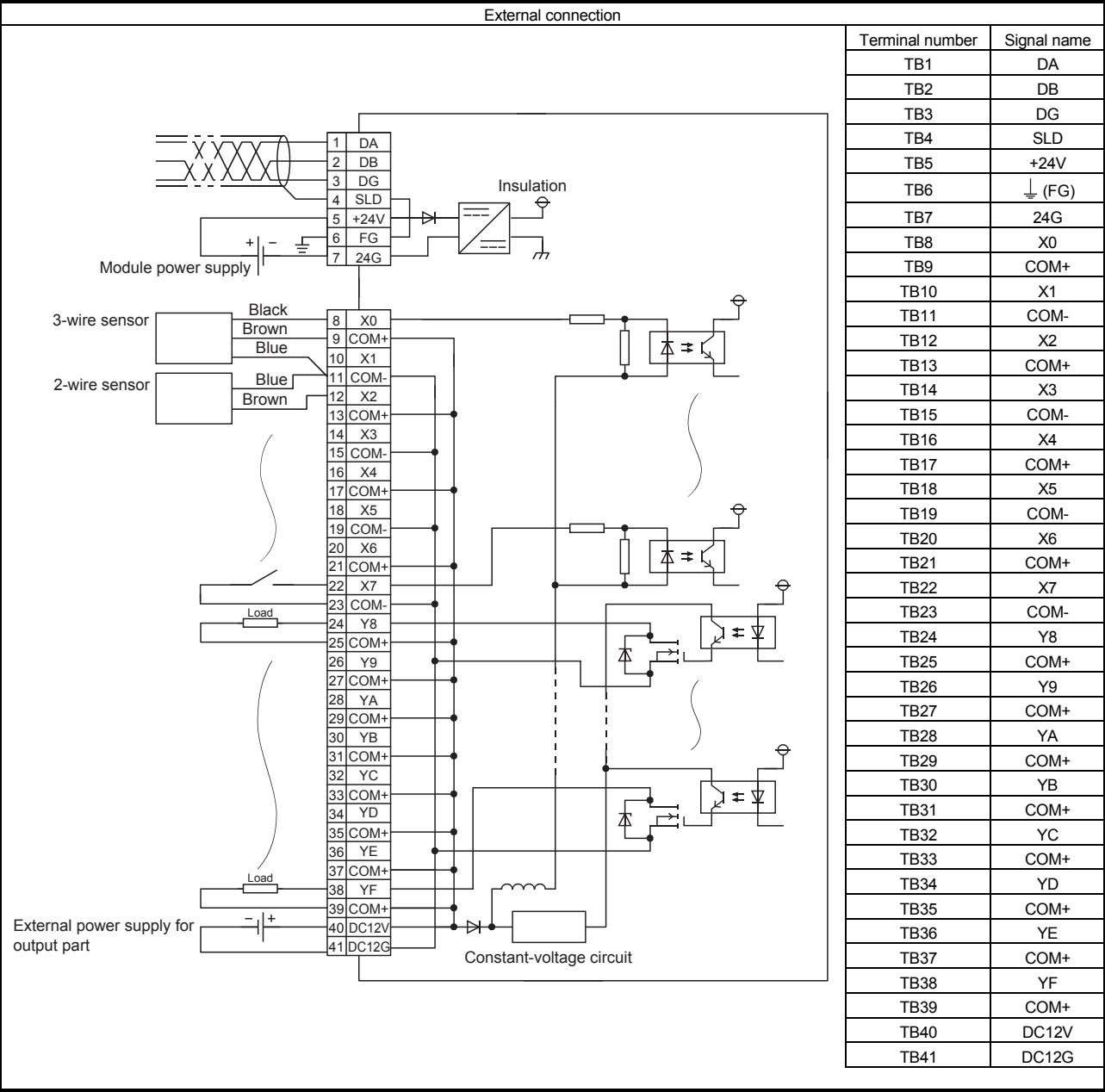
## 6.1.10 AJ65SBTB32-16KDT8 combined module

| Type                                     |                                              | DC input transistor output combined module                                                                                                                                                                                                   |               |             |              |                                       |         |                                                                             |  |  |  | Appearance |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|--------------|---------------------------------------|---------|-----------------------------------------------------------------------------|--|--|--|------------|
| Item                                     |                                              | AJ65SBTB32-16KDT8                                                                                                                                                                                                                            |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Input                                    |                                              |                                                                                                                                                                                                                                              |               |             |              | Output                                |         |                                                                             |  |  |  |            |
| Number of input points                   |                                              | 8 points                                                                                                                                                                                                                                     |               |             |              | Number of output points               |         | 8 points                                                                    |  |  |  |            |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 |               |             |              | Isolation method                      |         | Photocoupler                                                                |  |  |  |            |
| Rated input voltage                      |                                              | 12VDC                                                                                                                                                                                                                                        |               |             |              | Rated load voltage                    |         | 12VDC                                                                       |  |  |  |            |
| Rated input current                      |                                              | Approx. 11mA                                                                                                                                                                                                                                 |               |             |              | Operating load voltage range          |         | 10.2 to 14.4VDC (ripple ratio: within 5%)                                   |  |  |  |            |
| Operating voltage range                  |                                              | 10.2 to 14.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |               |             |              | Max. load current                     |         | 0.5A/point, 2.4A/common                                                     |  |  |  |            |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         |               |             |              | Max. inrush current                   |         | 1.0A, 10ms or less                                                          |  |  |  |            |
| ON voltage/ON current                    |                                              | 5.6VDC or higher/4mA or higher                                                                                                                                                                                                               |               |             |              | Leakage current at OFF                |         | 0.1mA or lower                                                              |  |  |  |            |
| OFF voltage/OFF current                  |                                              | 2.4VDC or lower/1.7mA or lower                                                                                                                                                                                                               |               |             |              | Max. voltage drop at ON               |         | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                    |  |  |  |            |
| Input resistance                         |                                              | Approx. 1.0kΩ                                                                                                                                                                                                                                |               |             |              | Output type                           |         | Sink type                                                                   |  |  |  |            |
|                                          |                                              |                                                                                                                                                                                                                                              |               |             |              | Protection function                   |         | None                                                                        |  |  |  |            |
| Response time                            | Input response speed                         | 0.2ms                                                                                                                                                                                                                                        | 1.5ms         | 5ms         | 10ms         | Response time                         | OFF→ON  | 0.5ms or less                                                               |  |  |  |            |
|                                          | OFF→ON                                       | 0.2ms or less                                                                                                                                                                                                                                | 1.5ms or less | 5ms or less | 10ms or less |                                       | ON→OFF  | 1.5ms or less (resistive load)                                              |  |  |  |            |
|                                          | ON→OFF                                       | 0.2ms or less                                                                                                                                                                                                                                | 1.5ms or less | 5ms or less | 10ms or less |                                       |         |                                                                             |  |  |  |            |
|                                          |                                              |                                                                                                                                                                                                                                              |               |             |              | External power supply for output part | Voltage | 10.2 to 14.4VDC (ripple ratio: within 5%)                                   |  |  |  |            |
|                                          |                                              |                                                                                                                                                                                                                                              |               |             |              |                                       | Current | 10mA or lower (at 12VDC and all points ON), excluding external load current |  |  |  |            |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                                  |               |             |              | Surge suppressor                      |         | Zener diode                                                                 |  |  |  |            |
| Supply current for connected device      |                                              | 1.0A or lower/common                                                                                                                                                                                                                         |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Wiring method for common                 |                                              | 16 points/common (input: 3-wire terminal block type, output: 2-wire terminal block type)                                                                                                                                                     |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |               |             |              |                                       |         |                                                                             |  |  |  |            |
|                                          | Current                                      | 55mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Weight                                   |                                              | 0.26kg                                                                                                                                                                                                                                       |               |             |              |                                       |         |                                                                             |  |  |  |            |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                     |               |             |              |                                       |         |                                                                             |  |  |  |            |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                  |               |             |              |                                       |         |                                                                             |  |  |  |            |
|                                          |                                              |                                                                                                                                                                                                                                              |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |               |             |              |                                       |         |                                                                             |  |  |  |            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |               |             |              |                                       |         |                                                                             |  |  |  |            |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |               |             |              |                                       |         |                                                                             |  |  |  |            |

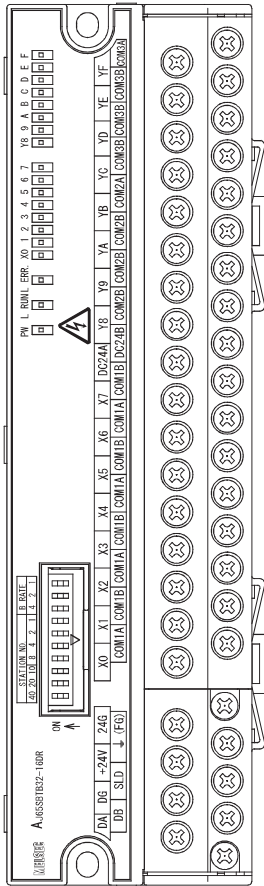
The diagram illustrates the physical layout of the AJ65SBTB32-16KDT8 module. It features a 32-point terminal block on the left, organized into two rows of 16 points each. The top row is labeled with input points (X0 to X15) and the bottom row with output points (Y0 to Y15). The module is designed for DIN rail mounting, with a mounting bracket shown on the right side. The module's dimensions and mounting details are specified in the accompanying text.

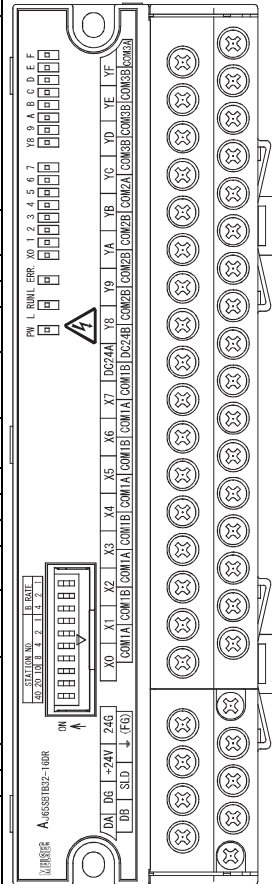


\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

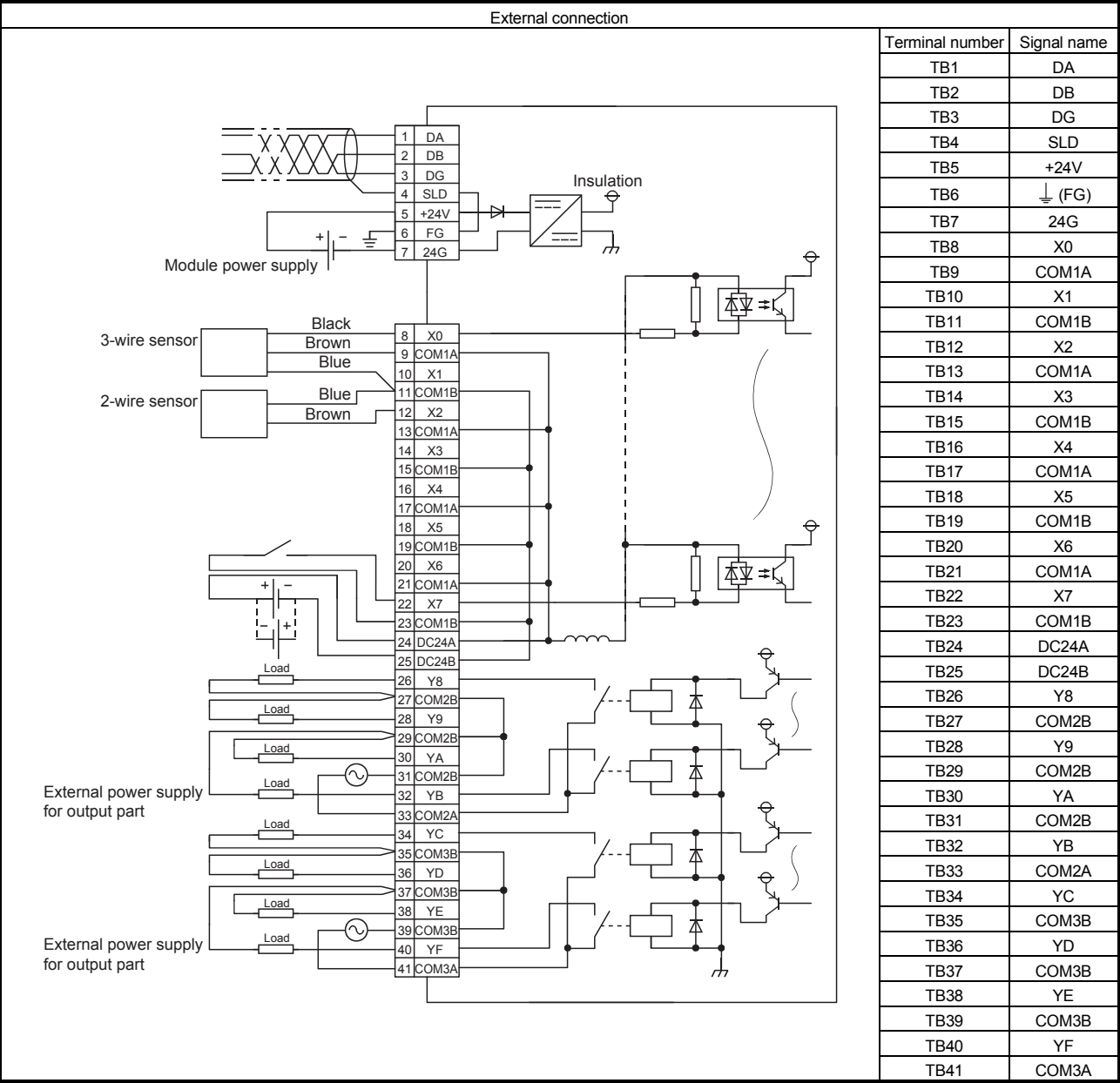


## 6.1.11 AJ65SBTB32-16DR combined module

| Item                                     |                                              | Type                                                                                                                                                                                                                                         | DC input contact output combined module |            |                                                                                                                                                                                                                                                                                |  | Appearance                                                                           |  |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------|--|
|                                          |                                              | AJ65SBTB32-16DR                                                                                                                                                                                                                              |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Input                                    |                                              |                                                                                                                                                                                                                                              | Output                                  |            |                                                                                                                                                                                                                                                                                |  |  |  |
| Number of input points                   |                                              | 8 points                                                                                                                                                                                                                                     | Number of output points                 |            | 8 points                                                                                                                                                                                                                                                                       |  |                                                                                      |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 | Isolation method                        |            | Relay                                                                                                                                                                                                                                                                          |  |                                                                                      |  |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        | Rated load voltage                      |            | 2A/point, 4A/common at 24VDC (resistive load) or 240VAC (cosφ=1)                                                                                                                                                                                                               |  |                                                                                      |  |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                  | Number of simultaneous ON points        |            | All points                                                                                                                                                                                                                                                                     |  |                                                                                      |  |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    | Min. switching load                     |            | 5VDC, 1mA                                                                                                                                                                                                                                                                      |  |                                                                                      |  |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         | Max. switching voltage                  |            | 264VAC, 125VDC                                                                                                                                                                                                                                                                 |  |                                                                                      |  |
| ON voltage/ON current                    |                                              | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                              | Life                                    | Mechanical | 20 million times or more                                                                                                                                                                                                                                                       |  |                                                                                      |  |
|                                          |                                              |                                                                                                                                                                                                                                              |                                         | Electrical | Rated switching voltage/current load:<br>100 thousand times or more<br>200VAC 1.5A, 240VAC 1A (cosφ=0.7):<br>100 thousand times or more<br>200VAC 1A, 240VAC 0.5A (cosφ=0.35):<br>100 thousand times or more<br>24VDC 1A, 100VDC 0.1A (L/R=7ms):<br>100 thousand times or more |  |                                                                                      |  |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                 |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Input resistance                         |                                              | Approx. 3.3kΩ                                                                                                                                                                                                                                | Max. switching frequency                |            | 3600 times/hour                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                           | OFF→ON     | 10ms or less                                                                                                                                                                                                                                                                   |  |                                                                                      |  |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |                                         | ON→OFF     | 12ms or less                                                                                                                                                                                                                                                                   |  |                                                                                      |  |
| Wiring method for common                 |                                              | 8 points/common (3-wire, terminal block type)                                                                                                                                                                                                | Wiring method for common                |            | 4 points/common (2-wire, terminal block type)                                                                                                                                                                                                                                  |  |                                                                                      |  |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                               | Surge suppressor                        |            | None                                                                                                                                                                                                                                                                           |  |                                                                                      |  |
| Supply current for connected device      |                                              | 1.0A or lower/common                                                                                                                                                                                                                         |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
|                                          | Current                                      | 85mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Noise immunity                           |                                              | Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1μs, noise frequency 25 to 60Hz (noise simulator condition)                                                                                                                |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Withstand voltage                        |                                              | 2830VACrms for 3 cycles between all AC external terminals and ground (2000m above sea level)<br>500VAC for 1 minute between all DC external terminals and ground                                                                             |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Insulation resistance                    |                                              | 10MΩ or higher between all AC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
|                                          |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Protection degree                        |                                              | IP1X                                                                                                                                                                                                                                         |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Weight                                   |                                              | 0.28kg                                                                                                                                                                                                                                       |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                     |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                  |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                                         |            |                                                                                                                                                                                                                                                                                |  |                                                                                      |  |

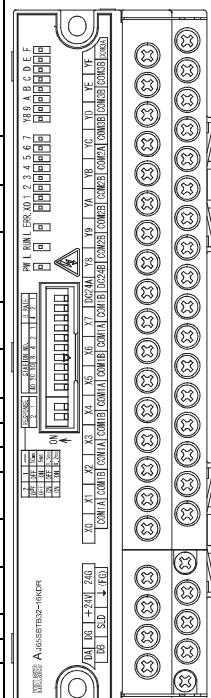


\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

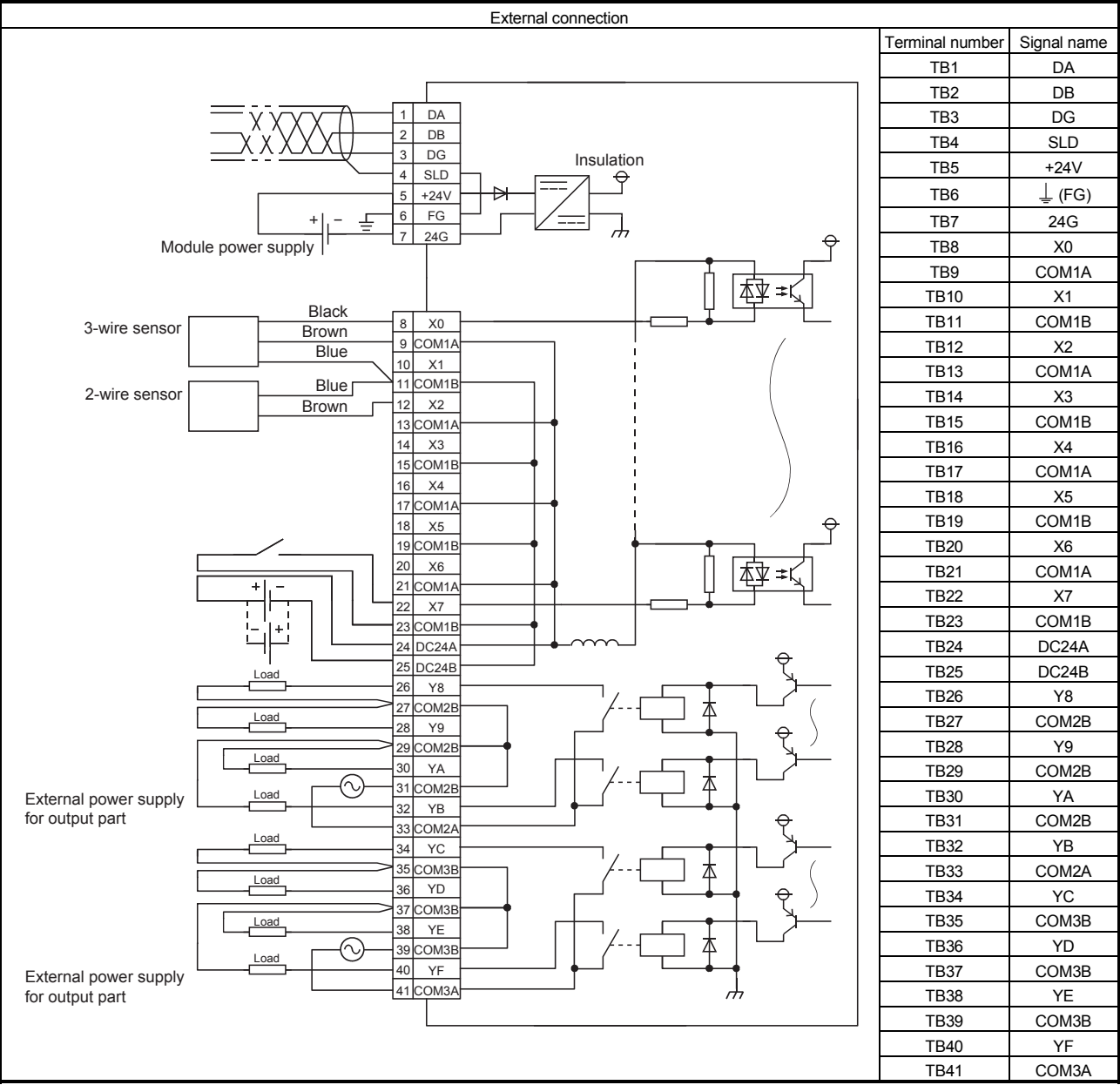


## 6.1.12 AJ65SBTB32-16KDR combined module

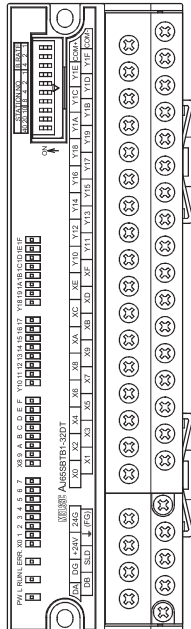
| Type                                     |                                              | DC input contact output combined module                                                                                                                                                                                                      |               |             |              |                                  |            | AJ65SBTB32-16KDR                                                                                                                                                                                                                                                               |  | Appearance |  |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|--------------|----------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------|--|
| Item                                     |                                              | Input                                                                                                                                                                                                                                        |               |             |              | Output                           |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Number of input points                   |                                              | 8 points                                                                                                                                                                                                                                     |               |             |              | Number of output points          |            | 8 points                                                                                                                                                                                                                                                                       |  |            |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 |               |             |              | Isolation method                 |            | Relay                                                                                                                                                                                                                                                                          |  |            |  |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        |               |             |              | Rated load voltage               |            | 2A/point, 4A/common at 24VDC (resistive load) or 240VAC (cosφ=1)                                                                                                                                                                                                               |  |            |  |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                  |               |             |              | Number of simultaneous ON points |            | All points                                                                                                                                                                                                                                                                     |  |            |  |
| Operating voltage range                  |                                              | 20.4 to 28.8VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |               |             |              | Min. switching load              |            | 5VDC, 1mA                                                                                                                                                                                                                                                                      |  |            |  |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         |               |             |              | Max. switching voltage           |            | 264VAC, 125VDC                                                                                                                                                                                                                                                                 |  |            |  |
| ON voltage/ON current                    |                                              | 14VDC or higher/4mA or higher                                                                                                                                                                                                                |               |             |              | Life                             | Mechanical | 20 million times or more                                                                                                                                                                                                                                                       |  |            |  |
| OFF voltage/OFF current                  |                                              | 5.5VDC or lower/1.7mA or lower                                                                                                                                                                                                               |               |             |              |                                  | Electrical | Rated switching voltage/current load:<br>100 thousand times or more<br>200VAC 1.5A, 240VAC 1A (cosφ=0.7):<br>100 thousand times or more<br>200VAC 1A, 240VAC 0.5A (cosφ=0.35):<br>100 thousand times or more<br>24VDC 1A, 100VDC 0.1A (L/R=7ms):<br>100 thousand times or more |  |            |  |
| Input resistance                         |                                              | Approx. 3.0kΩ                                                                                                                                                                                                                                |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Response time                            | Input response speed                         | 0.2ms                                                                                                                                                                                                                                        | 1.5ms         | 5ms         | 10ms         |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
|                                          | OFF→ON                                       | 0.2ms or less                                                                                                                                                                                                                                | 1.5ms or less | 5ms or less | 10ms or less |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
|                                          | ON→OFF                                       | 0.2ms or less                                                                                                                                                                                                                                | 1.5ms or less | 5ms or less | 10ms or less | Max. switching frequency         |            | 3600 times/hour                                                                                                                                                                                                                                                                |  |            |  |
| Wiring method for common                 |                                              | 8 points/common (3-wire, terminal block type)                                                                                                                                                                                                |               |             |              | Response time                    | OFF→ON     | 10ms or less                                                                                                                                                                                                                                                                   |  |            |  |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                               |               |             |              |                                  | ON→OFF     | 12ms or less                                                                                                                                                                                                                                                                   |  |            |  |
| Supply current for connected device      |                                              | 1.0A or lower/common                                                                                                                                                                                                                         |               |             |              | Wiring method for common         |            | 4 points/common (2-wire, terminal block type)                                                                                                                                                                                                                                  |  |            |  |
|                                          |                                              |                                                                                                                                                                                                                                              |               |             |              | Surge suppressor                 |            | None                                                                                                                                                                                                                                                                           |  |            |  |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                                                                                                                                 |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
|                                          | Current                                      | 100mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                  |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Noise immunity                           |                                              | Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1μs, noise frequency 25 to 60Hz (noise simulator condition)                                                                                                                |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Withstand voltage                        |                                              | 2830VACrms for 3 cycles between all AC external terminals and ground (2000m above sea level)<br>500VAC for 1 minute between all DC external terminals and ground                                                                             |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Insulation resistance                    |                                              | 10MΩ or higher between all AC external terminals and ground (500VDC insulation resistance tester)<br>10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                       |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Protection degree                        |                                              | IP1X                                                                                                                                                                                                                                         |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Weight                                   |                                              | 0.29kg                                                                                                                                                                                                                                       |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                     |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                  |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |               |             |              |                                  |            |                                                                                                                                                                                                                                                                                |  |            |  |



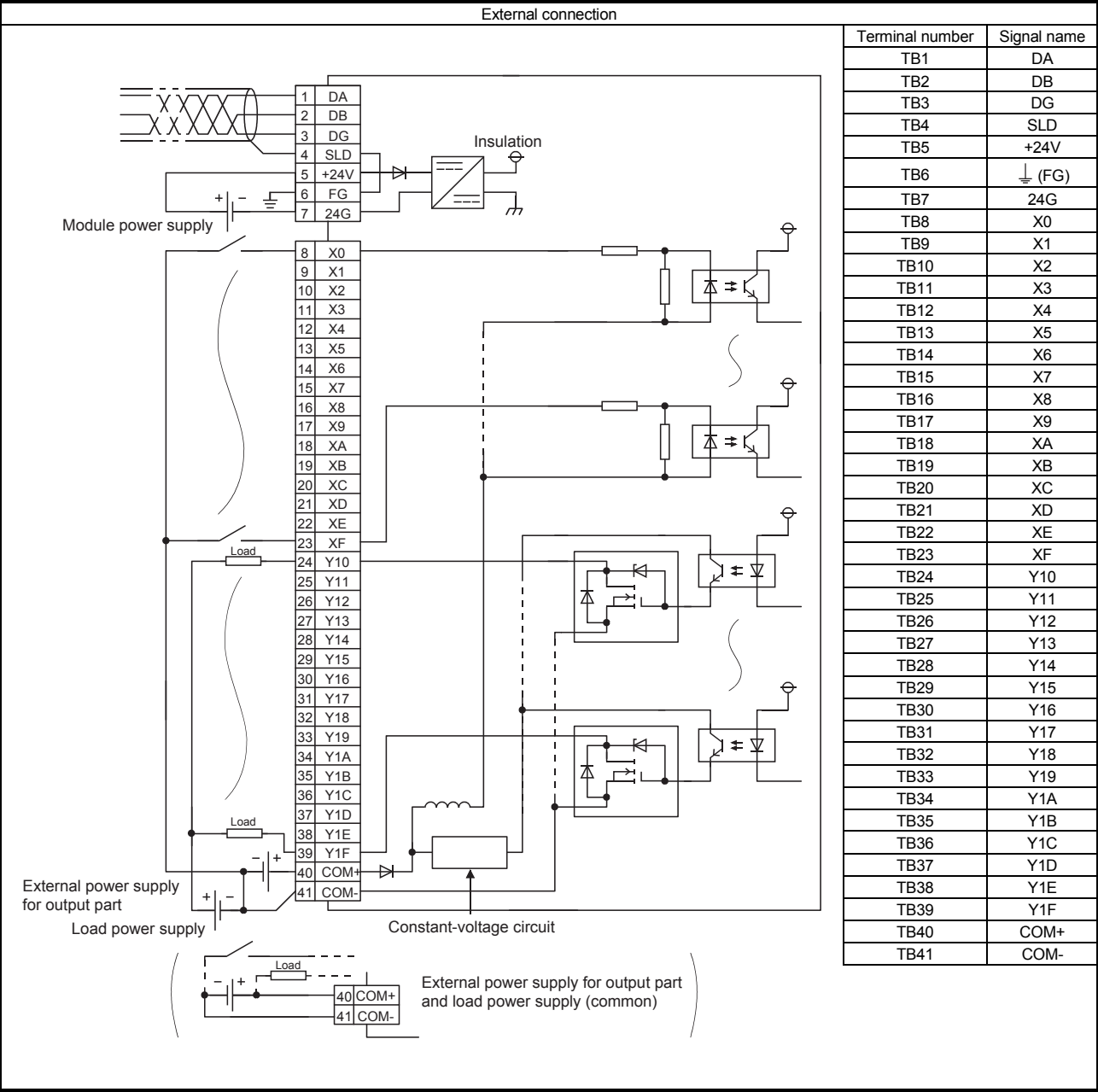
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 6.1.13 AJ65SBTB1-32DT combined module

| Item                                     |                                              | Type                                                                                                                                                                                                                                         | DC input transistor output combined module |                                                                  | Appearance                                                                           |                                |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------|--------------------------------|
|                                          |                                              | AJ65SBTB1-32DT                                                                                                                                                                                                                               |                                            |                                                                  |                                                                                      |                                |
|                                          |                                              | Input                                                                                                                                                                                                                                        | Output                                     |                                                                  |  |                                |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                                    | Number of output points                    | 16 points                                                        |                                                                                      |                                |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 | Isolation method                           | Photocoupler                                                     |                                                                                      |                                |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        | Rated load voltage                         | 24VDC                                                            |                                                                                      |                                |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                  | Operating load voltage range               | 19.2 to 26.4VDC (ripple ratio: within 5%)                        |                                                                                      |                                |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    | Max. load current                          | 0.5A/point, 3.6A/common                                          |                                                                                      |                                |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         | Max. inrush current                        | 1.0A, 10ms or less                                               |                                                                                      |                                |
| ON voltage/ON current                    |                                              | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                              | Leakage current at OFF                     | 0.25mA or lower                                                  |                                                                                      |                                |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                 | Max. voltage drop at ON                    | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A         |                                                                                      |                                |
| Input resistance                         |                                              | Approx. 3.3kΩ                                                                                                                                                                                                                                | Output type                                | Sink type                                                        |                                                                                      |                                |
|                                          |                                              |                                                                                                                                                                                                                                              | Protection function                        | Overload protection, overvoltage protection, overheat protection |                                                                                      |                                |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                              | OFF→ON                                                           |                                                                                      | 0.5ms or less                  |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                              | ON→OFF                                                           |                                                                                      | 1.5ms or less (resistive load) |
|                                          |                                              | External power supply for output part                                                                                                                                                                                                        | Voltage                                    | 19.2 to 26.4VDC (ripple ratio: within 5%)                        |                                                                                      |                                |
|                                          |                                              |                                                                                                                                                                                                                                              | Current                                    | 30mA or lower (24VDC/common), excluding external load current    |                                                                                      |                                |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                                  | Surge suppressor                           | Zener diode                                                      |                                                                                      |                                |
| Wiring method for common                 |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                               |                                            |                                                                  |                                                                                      |                                |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                 |                                            |                                                                  |                                                                                      |                                |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                            |                                                                  |                                                                                      |                                |
|                                          | Current                                      | 60mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                            |                                                                  |                                                                                      |                                |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |                                            |                                                                  |                                                                                      |                                |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                                            |                                                                  |                                                                                      |                                |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                            |                                                                  |                                                                                      |                                |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |                                            |                                                                  |                                                                                      |                                |
| Weight                                   |                                              | 0.25kg                                                                                                                                                                                                                                       |                                            |                                                                  |                                                                                      |                                |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                  |                                            |                                                                  |                                                                                      |                                |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                               |                                            |                                                                  |                                                                                      |                                |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                                            |                                                                  |                                                                                      |                                |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                            |                                                                  |                                                                                      |                                |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                            |                                                                  |                                                                                      |                                |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                                            |                                                                  |                                                                                      |                                |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                                            |                                                                  |                                                                                      |                                |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                                            |                                                                  |                                                                                      |                                |

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

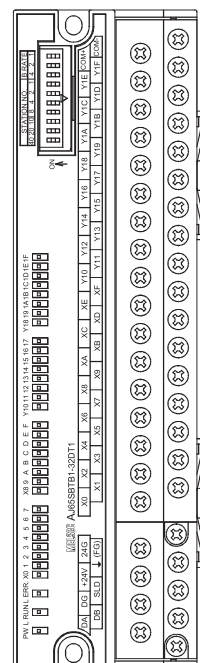




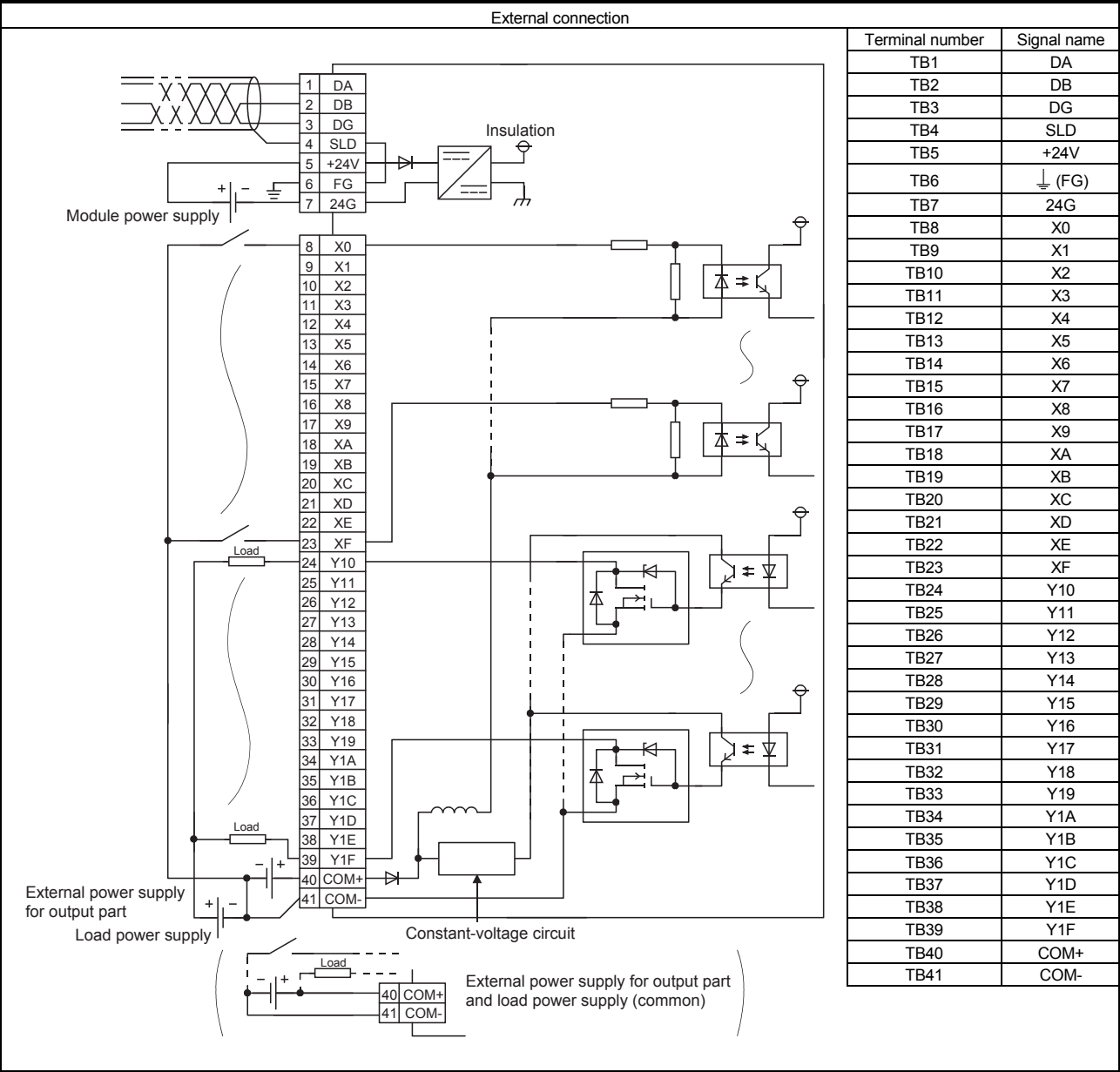
## 6.1.14 AJ65SBTB1-32DT1 combined module

| Type                                     |                                              | DC input transistor output combined module                                                                                                                                                                                                   |                                       |         |                                                                               | Appearance |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------|-------------------------------------------------------------------------------|------------|
| Item                                     |                                              | AJ65SBTB1-32DT1                                                                                                                                                                                                                              |                                       |         |                                                                               |            |
| Input                                    |                                              | Output                                                                                                                                                                                                                                       |                                       |         |                                                                               |            |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                                    | Number of output points               |         | 16 points                                                                     |            |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 | Isolation method                      |         | Photocoupler                                                                  |            |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        | Rated load voltage                    |         | 24VDC                                                                         |            |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                                                                                                                                  | Operating load voltage range          |         | 19.2 to 26.4VDC (ripple ratio: within 5%)                                     |            |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    | Max. load current                     |         | 0.5A/point, 3.6A/common                                                       |            |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         | Max. inrush current                   |         | 1.0A, 10ms or less                                                            |            |
| ON voltage/ON current                    |                                              | 15VDC or higher/3mA or higher                                                                                                                                                                                                                | Leakage current at OFF                |         | 0.25mA or lower                                                               |            |
| OFF voltage/OFF current                  |                                              | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                                 | Max. voltage drop at ON               |         | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                      |            |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                                                                                                                                | Output type                           |         | Sink type                                                                     |            |
|                                          |                                              |                                                                                                                                                                                                                                              | Protection function                   |         | Overload protection, overvoltage protection, overheat protection              |            |
| Response time                            | OFF→ON                                       | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                         | OFF→ON  | 0.5ms or less                                                                 |            |
|                                          | ON→OFF                                       | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                     |                                       | ON→OFF  | 1.5ms or less (resistive load)                                                |            |
|                                          |                                              |                                                                                                                                                                                                                                              | External power supply for output part | Voltage | 19.2 to 26.4VDC (ripple ratio: within 5%)                                     |            |
|                                          |                                              |                                                                                                                                                                                                                                              |                                       | Current | 24.2mA or lower (at 24VDC and all points ON), excluding external load current |            |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                                  | Surge suppressor                      |         | Zener diode                                                                   |            |
| Wiring method for common                 |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                               |                                       |         |                                                                               |            |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                 |                                       |         |                                                                               |            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                       |         |                                                                               |            |
|                                          | Current                                      | 60mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                       |         |                                                                               |            |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |                                       |         |                                                                               |            |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                                       |         |                                                                               |            |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                       |         |                                                                               |            |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |                                       |         |                                                                               |            |
| Weight                                   |                                              | 0.25kg                                                                                                                                                                                                                                       |                                       |         |                                                                               |            |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                  |                                       |         |                                                                               |            |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                               |                                       |         |                                                                               |            |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                                       |         |                                                                               |            |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                       |         |                                                                               |            |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                       |         |                                                                               |            |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                                       |         |                                                                               |            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                                       |         |                                                                               |            |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                                       |         |                                                                               |            |

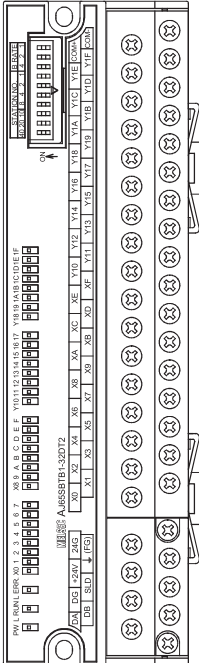
The image shows the physical appearance of the AJ65SBTB1-32DT1 module. It is a rectangular unit designed for DIN rail mounting. On the left side, there is a terminal block with 32 terminals, labeled from X1 to X32. The terminals are arranged in two rows of 16. The top row is labeled X1 to X16, and the bottom row is labeled X17 to X32. The unit is mounted on a DIN rail, which is visible at the bottom. The module has a black plastic housing and a metal base plate. The label on the front of the module reads "AJ65SBTB1-32DT1".

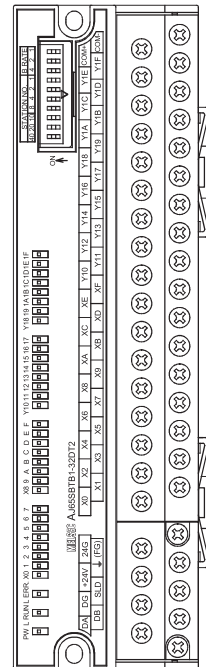


\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

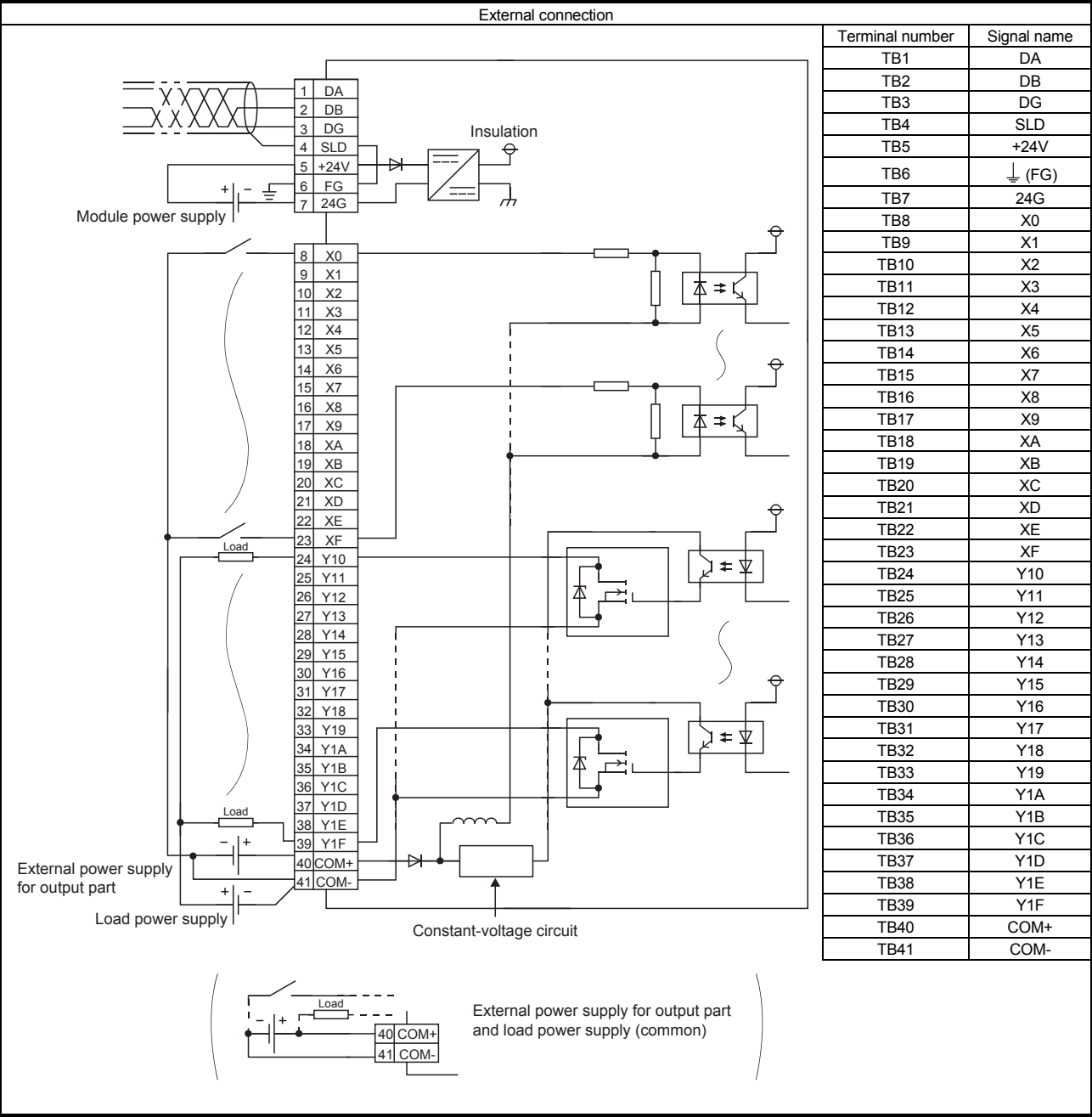


## 6.1.15 AJ65SBTB1-32DT2 combined module

| Item                                     |                                              | Type                                                                                                                                                                                                                                         | DC input transistor output combined module |                                                                                     | Appearance                                                                           |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|                                          |                                              | AJ65SBTB1-32DT2                                                                                                                                                                                                                              |                                            |                                                                                     |                                                                                      |
|                                          |                                              | Input                                                                                                                                                                                                                                        | Output                                     |                                                                                     |  |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                                    | Number of output points                    | 16 points                                                                           |                                                                                      |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 | Isolation method                           | Photocoupler                                                                        |                                                                                      |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        | Rated load voltage                         | 24VDC                                                                               |                                                                                      |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                                  | Operating load voltage range               | 19.2 to 26.4VDC (ripple ratio: within 5%)                                           |                                                                                      |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    | Max. load current                          | 0.5A/point, 3.6A/common                                                             |                                                                                      |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         | Max. inrush current                        | 1.0A, 10ms or less                                                                  |                                                                                      |
| ON voltage/ON current                    |                                              | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                              | Leakage current at OFF                     | 0.1mA or lower                                                                      |                                                                                      |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                 | Max. voltage drop at ON                    | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                            |                                                                                      |
| Input resistance                         |                                              | Approx. 3.3kΩ                                                                                                                                                                                                                                | Output type                                | Sink type                                                                           |                                                                                      |
|                                          |                                              |                                                                                                                                                                                                                                              | Protection function                        | None                                                                                |                                                                                      |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                              | OFF→ON 0.5ms or less                                                                |                                                                                      |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     | ON→OFF                                     | 1.5ms or less (resistive load)                                                      |                                                                                      |
|                                          |                                              |                                                                                                                                                                                                                                              | External power supply for output part      | Voltage 19.2 to 26.4VDC (ripple ratio: within 5%)                                   |                                                                                      |
|                                          |                                              |                                                                                                                                                                                                                                              |                                            | Current 30mA or lower (at 24VDC and all points ON), excluding external load current |                                                                                      |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                                  | Surge suppressor                           | Zener diode                                                                         |                                                                                      |
| Wiring method for common                 |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                               |                                            |                                                                                     |                                                                                      |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                 |                                            |                                                                                     |                                                                                      |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                            |                                                                                     |                                                                                      |
|                                          | Current                                      | 60mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                            |                                                                                     |                                                                                      |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                       |                                            |                                                                                     |                                                                                      |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                                            |                                                                                     |                                                                                      |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                            |                                                                                     |                                                                                      |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |                                            |                                                                                     |                                                                                      |
| Weight                                   |                                              | 0.25kg                                                                                                                                                                                                                                       |                                            |                                                                                     |                                                                                      |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range:0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                   |                                            |                                                                                     |                                                                                      |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range:0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                |                                            |                                                                                     |                                                                                      |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                                            |                                                                                     |                                                                                      |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                            |                                                                                     |                                                                                      |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                            |                                                                                     |                                                                                      |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                                            |                                                                                     |                                                                                      |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                                            |                                                                                     |                                                                                      |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                                            |                                                                                     |                                                                                      |



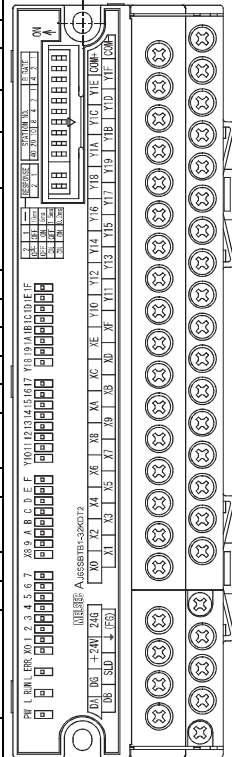
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



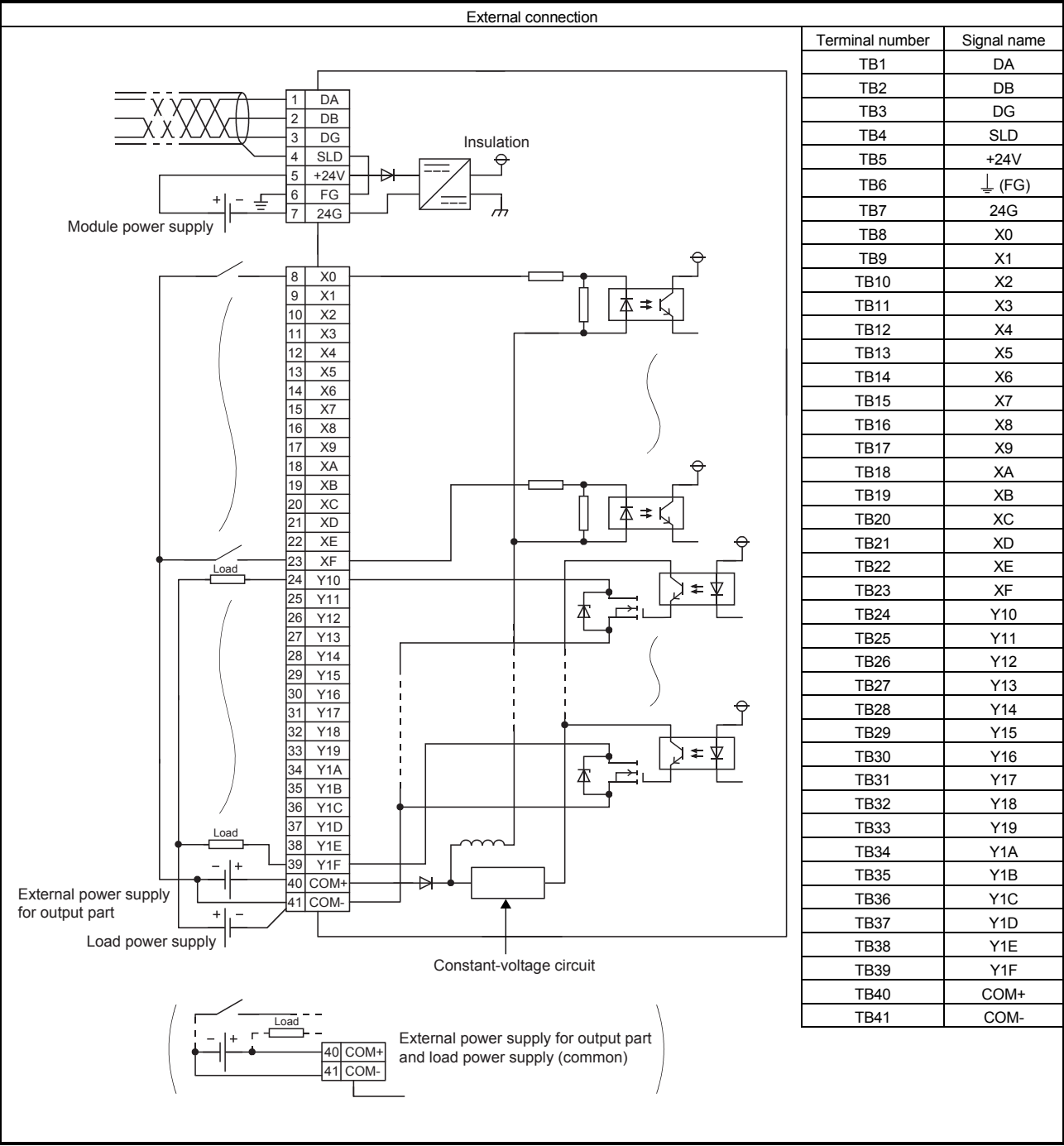
## 6.1.16 AJ65SBTB1-32KDT2 combined module

| Type                                     |                                              | DC input transistor output combined module                                                                                                                                                                                             |               |             |              |                                       |                              |                                                                             |                                                          |  |  | Appearance |  |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|--------------|---------------------------------------|------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------|--|--|------------|--|
|                                          |                                              | AJ65SBTB1-32KDT2                                                                                                                                                                                                                       |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Item                                     |                                              | Input                                                                                                                                                                                                                                  |               |             |              |                                       | Output                       |                                                                             |                                                          |  |  |            |  |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                              |               |             |              |                                       | Number of output points      |                                                                             | 16 points                                                |  |  |            |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                           |               |             |              |                                       | Isolation method             |                                                                             | Photocoupler                                             |  |  |            |  |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                  |               |             |              |                                       | Rated load voltage           |                                                                             | 24VDC                                                    |  |  |            |  |
| Rated input current                      |                                              | Approx. 7mA                                                                                                                                                                                                                            |               |             |              |                                       | Operating load voltage range |                                                                             | 20.4 to 28.8VDC (ripple ratio: within 5%)                |  |  |            |  |
| Operating voltage range                  |                                              | 20.4 to 28.8VDC (ripple ratio: within 5%)                                                                                                                                                                                              |               |             |              |                                       | Max. load current            |                                                                             | 0.5A/point, 3.6A/common                                  |  |  |            |  |
| Max. number of simultaneous input points |                                              | 100% (at 26.4VDC), 75% (at 28.8VDC)                                                                                                                                                                                                    |               |             |              |                                       | Max. inrush current          |                                                                             | 1.0A, 10ms or less                                       |  |  |            |  |
| ON voltage/ON current                    |                                              | 14VDC or higher/4mA or higher                                                                                                                                                                                                          |               |             |              |                                       | Leakage current at OFF       |                                                                             | 0.1mA or lower                                           |  |  |            |  |
| OFF voltage/OFF current                  |                                              | 5.5VDC or lower/1.7mA or lower                                                                                                                                                                                                         |               |             |              |                                       | Max. voltage drop at ON      |                                                                             | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A |  |  |            |  |
| Input resistance                         |                                              | Approx. 3.0kΩ                                                                                                                                                                                                                          |               |             |              |                                       | Output type                  |                                                                             | Sink type                                                |  |  |            |  |
|                                          |                                              |                                                                                                                                                                                                                                        |               |             |              |                                       | Protection function          |                                                                             | None                                                     |  |  |            |  |
| Response time                            | Input response speed                         | 0.2ms                                                                                                                                                                                                                                  | 1.5ms         | 5ms         | 10ms         | Response time                         | OFF→ON                       | 0.5ms or less                                                               |                                                          |  |  |            |  |
|                                          |                                              |                                                                                                                                                                                                                                        |               |             |              |                                       | ON→OFF                       | 1.5ms or less (resistive load)                                              |                                                          |  |  |            |  |
|                                          | OFF→ON                                       | 0.2ms or less                                                                                                                                                                                                                          | 1.5ms or less | 5ms or less | 10ms or less | External power supply for output part | Voltage                      | 19.2 to 28.8VDC (ripple ratio: within 5%)                                   |                                                          |  |  |            |  |
|                                          | ON→OFF                                       | 0.2ms or less                                                                                                                                                                                                                          | 1.5ms or less | 5ms or less | 10ms or less |                                       | Current                      | 15mA or lower (at 24VDC and all points ON), excluding external load current |                                                          |  |  |            |  |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                            |               |             |              |                                       | Surge suppressor             |                                                                             | Zener diode                                              |  |  |            |  |
| Wiring method for common                 |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                         |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                           |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                              |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
|                                          | Current                                      | 65mA or lower (at 24VDC and all points ON)                                                                                                                                                                                             |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                 |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                       |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                      |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                   |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Weight                                   |                                              | 0.26kg                                                                                                                                                                                                                                 |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m) Applicable solderless terminal: 2 or less                                                     |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal] M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m) Applicable solderless terminal: 2 or less                                                                  |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m) Mountable with a DIN rail in 6 orientations                                                                                                       |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                      |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                 |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                           |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                          |               |             |              |                                       |                              |                                                                             |                                                          |  |  |            |  |

The diagram illustrates the physical layout of the AJ65SBTB1-32KDT2 module. It features a 32-point terminal block on the left side, with terminals labeled from X0 to X31. The terminals are organized into two rows: the top row contains X0 through X16, and the bottom row contains X17 through X31. The module is designed for DIN rail mounting, with a mounting bracket on the right side. The diagram also shows the internal wiring and the location of the module's components, including the input and output sections.



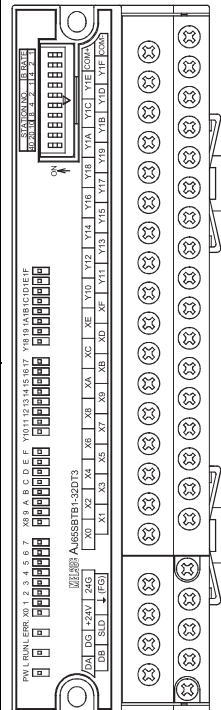
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



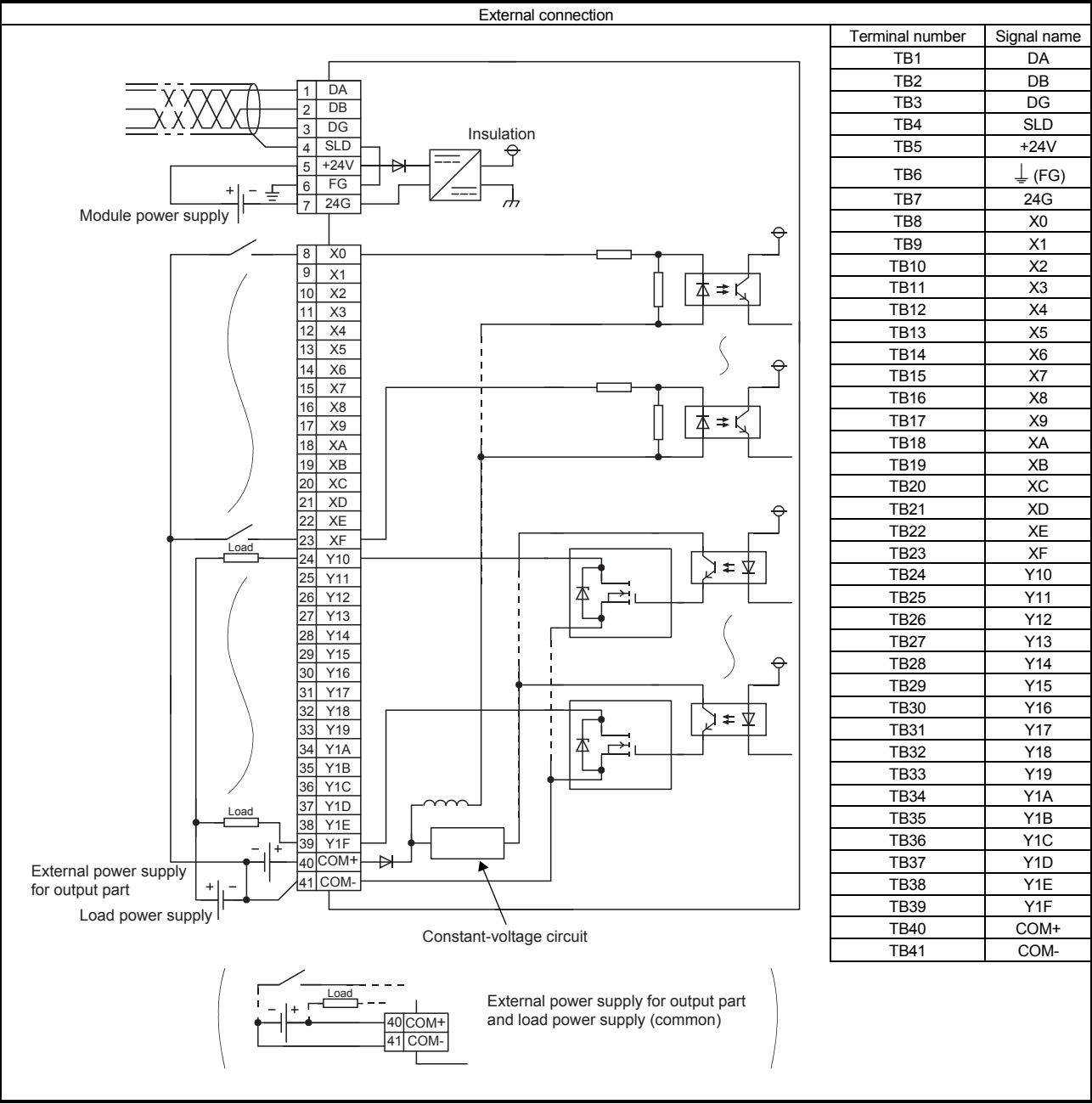
## 6.1.17 AJ65SBTB1-32DT3 combined module

| Type                                     |                                              | DC input transistor output combined module                                                                                                                                                                                                   |                              | Appearance                                                                          |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------------------------|
| Item                                     |                                              | AJ65SBTB1-32DT3                                                                                                                                                                                                                              |                              |                                                                                     |
| Input                                    |                                              | Output                                                                                                                                                                                                                                       |                              |                                                                                     |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                                    | Number of output points      | 16 points                                                                           |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                                 | Isolation method             | Photocoupler                                                                        |
| Rated input voltage                      |                                              | 24VDC                                                                                                                                                                                                                                        | Rated load voltage           | 24VDC                                                                               |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                                                                                                                                  | Operating load voltage range | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                        |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                                                                                                                                                                                 | Max. load current            | 0.5A/point, 3.6A/common                                                             |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                         | Max. inrush current          | 1.0A, 10ms or less                                                                  |
| ON voltage/ON current                    |                                              | 15VDC or higher/3mA or higher                                                                                                                                                                                                                | Leakage current at OFF       | 0.1mA or lower                                                                      |
| OFF voltage/OFF current                  |                                              | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                                 | Max. voltage drop at ON      | 0.3VDC or lower (TYP.) 0.5A,<br>0.6VDC or lower (MAX.) 0.5A                         |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                                                                                                                                | Output type                  | Sink type                                                                           |
|                                          |                                              |                                                                                                                                                                                                                                              | Protection function          | None                                                                                |
| Response time                            | OFF→ON                                       | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                | OFF→ON 0.5ms or less                                                                |
|                                          | ON→OFF                                       | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                     |                              | ON→OFF 1.5ms or less (resistive load)                                               |
|                                          |                                              | External power supply for output part                                                                                                                                                                                                        | Voltage                      | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                        |
|                                          |                                              |                                                                                                                                                                                                                                              | Current                      | 24.2mA or lower<br>(at 24VDC and all points ON),<br>excluding external load current |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                                  | Surge suppressor             | Zener diode                                                                         |
| Wiring method for common                 |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                               |                              |                                                                                     |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                                 |                              |                                                                                     |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                              |                                                                                     |
|                                          | Current                                      | 60mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                              |                                                                                     |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                    |                              |                                                                                     |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                              |                                                                                     |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                              |                                                                                     |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                         |                              |                                                                                     |
| Weight                                   |                                              | 0.25kg                                                                                                                                                                                                                                       |                              |                                                                                     |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                  |                              |                                                                                     |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                               |                              |                                                                                     |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                          |                              |                                                                                     |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                              |                                                                                     |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                              |                                                                                     |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                       |                              |                                                                                     |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                                 |                              |                                                                                     |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                                |                              |                                                                                     |

The diagram illustrates the physical layout of the AJ65SBTB1-32DT3 module. It features a 32-point terminal block on the left side, organized into two rows of 16 points each. The top row is labeled with input points X1 through X16, and the bottom row is labeled with output points Y1 through Y16. A separate 7-point terminal block is located at the top left, used for communication, power supply, and ground (FG) connections. The module is designed for DIN rail mounting, with a mounting screw and washer indicated at the bottom. The overall dimensions and mounting details are shown in a side-view perspective.



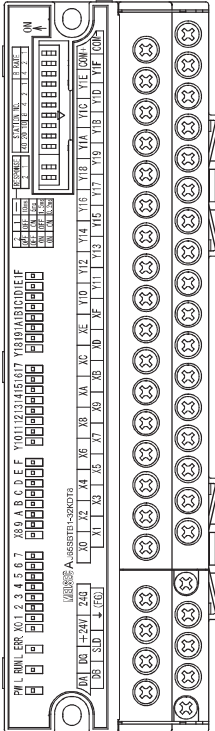
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



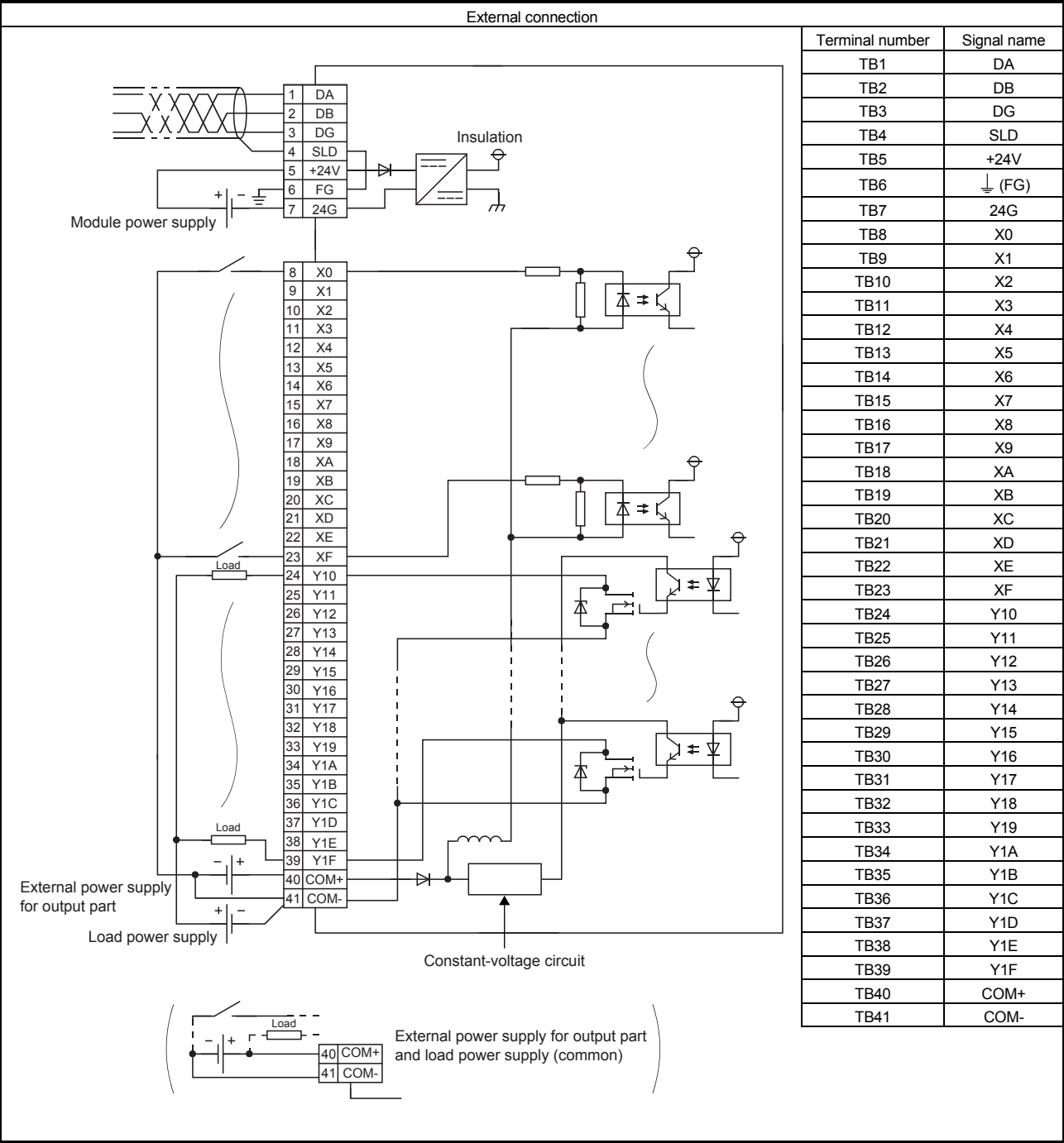


## 6.1.18 AJ65SBTB1-32KDT8 combined module

| Type                                     |                                              | DC input transistor output combined module                                                                                                                                                                                             |               |             |              |                                       |         | AJ65SBTB1-32KDT8                                                            |  | Appearance                                               |  |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|--------------|---------------------------------------|---------|-----------------------------------------------------------------------------|--|----------------------------------------------------------|--|
| Item                                     |                                              |                                                                                                                                                                                                                                        |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Input                                    |                                              | Output                                                                                                                                                                                                                                 |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Number of input points                   |                                              | 16 points                                                                                                                                                                                                                              |               |             |              |                                       |         | Number of output points                                                     |  | 16 points                                                |  |
| Isolation method                         |                                              | Photocoupler                                                                                                                                                                                                                           |               |             |              |                                       |         | Isolation method                                                            |  | Photocoupler                                             |  |
| Rated input voltage                      |                                              | 12VDC                                                                                                                                                                                                                                  |               |             |              |                                       |         | Rated load voltage                                                          |  | 12VDC                                                    |  |
| Rated input current                      |                                              | Approx. 11mA                                                                                                                                                                                                                           |               |             |              |                                       |         | Operating load voltage range                                                |  | 10.2 to 14.4VDC (ripple ratio: within 5%)                |  |
| Operating voltage range                  |                                              | 10.2 to 14.4VDC (ripple ratio: within 5%)                                                                                                                                                                                              |               |             |              |                                       |         | Max. load current                                                           |  | 0.5A/point, 3.6A/common                                  |  |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                                                                                                                   |               |             |              |                                       |         | Max. inrush current                                                         |  | 1.0A, 10ms or less                                       |  |
| ON voltage/ON current                    |                                              | 5.6VDC or higher/4mA or higher                                                                                                                                                                                                         |               |             |              |                                       |         | Leakage current at OFF                                                      |  | 0.1mA or lower                                           |  |
| OFF voltage/OFF current                  |                                              | 2.4VDC or lower/1.7mA or lower                                                                                                                                                                                                         |               |             |              |                                       |         | Max. voltage drop at ON                                                     |  | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A |  |
| Input resistance                         |                                              | Approx. 1.0kΩ                                                                                                                                                                                                                          |               |             |              |                                       |         | Output type                                                                 |  | Sink type                                                |  |
|                                          |                                              |                                                                                                                                                                                                                                        |               |             |              |                                       |         | Protection function                                                         |  | None                                                     |  |
| Response time                            | Input response speed                         | 0.2ms                                                                                                                                                                                                                                  | 1.5ms         | 5ms         | 10ms         | Response time                         | OFF→ON  | 0.5ms or less                                                               |  |                                                          |  |
|                                          | OFF→ON                                       | 0.2ms or less                                                                                                                                                                                                                          | 1.5ms or less | 5ms or less | 10ms or less |                                       |         |                                                                             |  |                                                          |  |
|                                          | ON→OFF                                       | 0.2ms or less                                                                                                                                                                                                                          | 1.5ms or less | 5ms or less | 10ms or less |                                       |         |                                                                             |  |                                                          |  |
|                                          |                                              |                                                                                                                                                                                                                                        |               |             |              | External power supply for output part | Voltage | 10.2 to 14.4VDC (ripple ratio: within 5%)                                   |  |                                                          |  |
|                                          |                                              |                                                                                                                                                                                                                                        |               |             |              |                                       | Current | 15mA or lower (at 12VDC and all points ON), excluding external load current |  |                                                          |  |
| Input type                               |                                              | Positive common (sink type)                                                                                                                                                                                                            |               |             |              | Surge suppressor                      |         | Zener diode                                                                 |  |                                                          |  |
| Wiring method for common                 |                                              | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                         |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                                                                                                                           |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                              |               |             |              |                                       |         |                                                                             |  |                                                          |  |
|                                          | Current                                      | 65mA or lower (at 24VDC and all points ON)                                                                                                                                                                                             |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                 |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                       |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                      |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Protection degree                        |                                              | IP2X                                                                                                                                                                                                                                   |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Weight                                   |                                              | 0.26kg                                                                                                                                                                                                                                 |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| External connection system               | Communication part, module power supply part | 7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less                                                     |               |             |              |                                       |         |                                                                             |  |                                                          |  |
|                                          | I/O power supply part, I/O part              | 34-point direct-mount terminal block [I/O power supply, I/O signal] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less                                                                  |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations                                                                                                       |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                      |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Applicable solderless terminal           |                                              | • RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Wire                                     | Material                                     | Copper                                                                                                                                                                                                                                 |               |             |              |                                       |         |                                                                             |  |                                                          |  |
|                                          | Temperature rating                           | 75°C or more                                                                                                                                                                                                                           |               |             |              |                                       |         |                                                                             |  |                                                          |  |
| Accessory                                |                                              | User's manual                                                                                                                                                                                                                          |               |             |              |                                       |         |                                                                             |  |                                                          |  |



\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

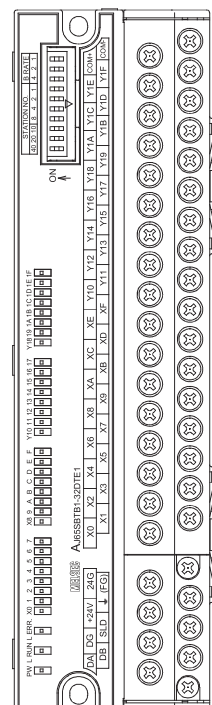


## 6.1.19 AJ65SBTB1-32DTE1 combined module

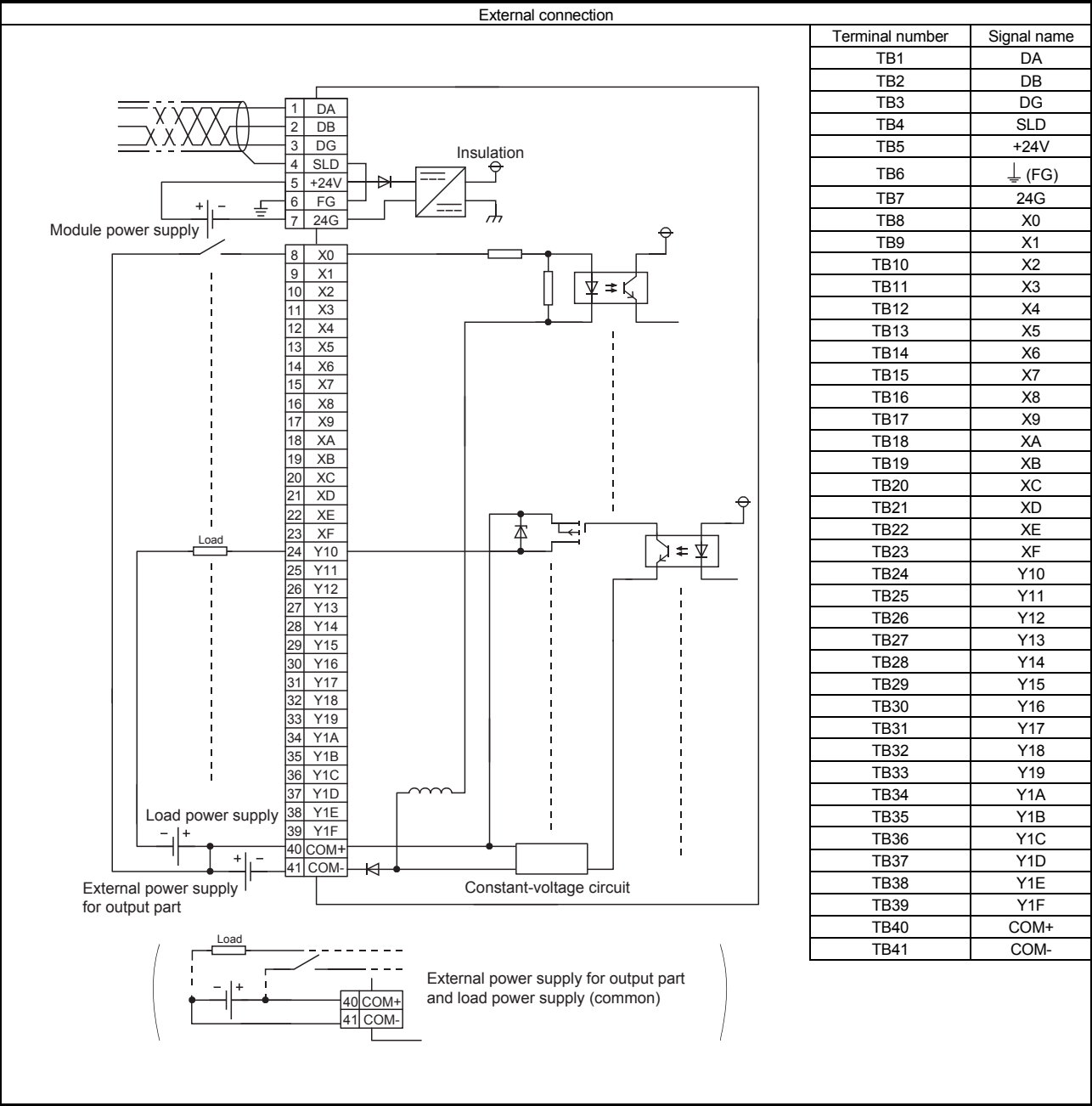
| Type                                     |                                                 | DC input transistor output combined module                                                                                                                                                                                                   |                                       |         |                                                                          | Appearance |
|------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------|--------------------------------------------------------------------------|------------|
| Item                                     |                                                 | AJ65SBTB1-32DTE1                                                                                                                                                                                                                             |                                       |         |                                                                          |            |
| Input                                    |                                                 | Output                                                                                                                                                                                                                                       |                                       |         |                                                                          |            |
| Number of input points                   |                                                 | 16 points                                                                                                                                                                                                                                    | Number of output points               |         | 16 points                                                                |            |
| Isolation method                         |                                                 | Photocoupler                                                                                                                                                                                                                                 | Isolation method                      |         | Photocoupler                                                             |            |
| Rated input voltage                      |                                                 | 24VDC                                                                                                                                                                                                                                        | Rated load voltage                    |         | 24VDC                                                                    |            |
| Rated input current                      |                                                 | Approx. 7mA                                                                                                                                                                                                                                  | Operating load voltage range          |         | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                             |            |
| Operating voltage range                  |                                                 | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                                                                                                                                                                                 | Max. load current                     |         | 0.5A/point, 3.6A/common                                                  |            |
| Max. number of simultaneous input points |                                                 | 100%                                                                                                                                                                                                                                         | Max. inrush current                   |         | 1.0A, 10ms or less                                                       |            |
| ON voltage/ON current                    |                                                 | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                              | Leakage current at OFF                |         | 0.1mA or lower                                                           |            |
| OFF voltage/OFF current                  |                                                 | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                                 | Max. voltage drop at ON               |         | 0.5VDC or lower (TYP.) 0.5A,<br>0.8VDC or lower (MAX.) 0.5A              |            |
| Input resistance                         |                                                 | Approx. 3.3kΩ                                                                                                                                                                                                                                | Output type                           |         | Source type                                                              |            |
| Response time                            | OFF→ON                                          | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     | Response time                         | OFF→ON  | 0.5ms or less                                                            |            |
|                                          | ON→OFF                                          | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                     |                                       | ON→OFF  | 1.5ms or less (resistive load)                                           |            |
|                                          |                                                 |                                                                                                                                                                                                                                              | External power supply for output part | Voltage | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                             |            |
|                                          |                                                 |                                                                                                                                                                                                                                              |                                       | Current | 10mA or lower<br>(TYP. 24VDC/common),<br>excluding external load current |            |
| Input type                               |                                                 | Negative common (source type)                                                                                                                                                                                                                | Surge suppressor                      |         | Zener diode                                                              |            |
| Wiring method for common                 |                                                 | 32 points/common (1-wire, terminal block type)                                                                                                                                                                                               |                                       |         |                                                                          |            |
| Number of occupied stations              |                                                 | 32-point assignment/station (32 points used)                                                                                                                                                                                                 |                                       |         |                                                                          |            |
| Module power supply                      | Voltage                                         | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                    |                                       |         |                                                                          |            |
|                                          | Current                                         | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                   |                                       |         |                                                                          |            |
| Noise immunity                           |                                                 | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                    |                                       |         |                                                                          |            |
| Withstand voltage                        |                                                 | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                             |                                       |         |                                                                          |            |
| Insulation resistance                    |                                                 | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                            |                                       |         |                                                                          |            |
| Protection degree                        |                                                 | IP2X                                                                                                                                                                                                                                         |                                       |         |                                                                          |            |
| Weight                                   |                                                 | 0.26kg                                                                                                                                                                                                                                       |                                       |         |                                                                          |            |
| External connection system               | Communication part,<br>module power supply part | 7-point two-piece terminal block<br>[Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                  |                                       |         |                                                                          |            |
|                                          | I/O power supply part,<br>I/O part              | 34-point direct-mount terminal block<br>[I/O power supply, I/O signal]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                               |                                       |         |                                                                          |            |
| Module mounting screw                    |                                                 | M4 screw with plain washer finished round<br>(tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations                                                                                                       |                                       |         |                                                                          |            |
| Applicable DIN rail                      |                                                 | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                            |                                       |         |                                                                          |            |
| Applicable solderless terminal           |                                                 | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                       |         |                                                                          |            |
| Wire                                     | Material                                        | Copper                                                                                                                                                                                                                                       |                                       |         |                                                                          |            |
|                                          | Temperature rating                              | 75°C or more                                                                                                                                                                                                                                 |                                       |         |                                                                          |            |
| Accessory                                |                                                 | User's manual                                                                                                                                                                                                                                |                                       |         |                                                                          |            |

Diagram illustrating the physical appearance and terminal layout of the AJ65SBTB1-32DTE1 module. The module is shown with its DIN rail and terminal block. Key dimensions and labels are provided:

- Overall dimensions: 100mm (height) x 100mm (width) x 100mm (depth).
- Terminal block dimensions: 100mm (height) x 100mm (width) x 100mm (depth).
- Terminal assignments: 32 points for common wiring, 16 input points, and 16 output points.
- Labels: TRANSMISSION, POWER SUPPLY, I/O, COMMON.

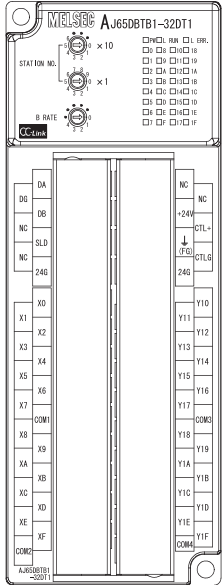


\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



## 6.1.20 AJ65DBTB1-32DT1 combined module

| Item                                     |                    | Type                                                                                                                                                                                                                                                    | DC input transistor output combined module |         |                                                                             |  | Appearance |
|------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------|-----------------------------------------------------------------------------|--|------------|
|                                          |                    | AJ65DBTB1-32DT1                                                                                                                                                                                                                                         |                                            |         |                                                                             |  |            |
| Input                                    |                    |                                                                                                                                                                                                                                                         | Output                                     |         |                                                                             |  |            |
| Number of input points                   |                    | 16 points                                                                                                                                                                                                                                               | Number of output points                    |         | 16 points                                                                   |  |            |
| Isolation method                         |                    | Photocoupler                                                                                                                                                                                                                                            | Isolation method                           |         | Photocoupler                                                                |  |            |
| Rated input voltage                      |                    | 24VDC                                                                                                                                                                                                                                                   | Rated load voltage                         |         | 12/24VDC                                                                    |  |            |
| Rated input current                      |                    | Approx. 5mA                                                                                                                                                                                                                                             | Operating load voltage range               |         | 10.2 to 31.2VDC (ripple ratio: within 5%)                                   |  |            |
| Operating voltage range                  |                    | 20.4 to 31.2VDC (ripple ratio: within 5%)                                                                                                                                                                                                               | Max. load current                          |         | 0.5A/point, 4A/common (2A/terminal)                                         |  |            |
| Max. number of simultaneous input points |                    | 100% (at 26.4VDC)                                                                                                                                                                                                                                       | Max. inrush current                        |         | 1.2A, 10ms or less                                                          |  |            |
| ON voltage/ON current                    |                    | 15VDC or higher/3mA or higher                                                                                                                                                                                                                           | Leakage current at OFF                     |         | 0.1mA or lower                                                              |  |            |
| OFF voltage/OFF current                  |                    | 5VDC or lower/1.5mA or lower                                                                                                                                                                                                                            | Max. voltage drop at ON                    |         | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                    |  |            |
| Input resistance                         |                    | Approx. 4.7kΩ                                                                                                                                                                                                                                           | Output type                                |         | Sink type                                                                   |  |            |
|                                          |                    |                                                                                                                                                                                                                                                         | Protection function                        |         | None                                                                        |  |            |
| Response time                            | OFF→ON             | 10ms or less (at 24VDC)                                                                                                                                                                                                                                 | Response time                              | OFF→ON  | 0.5ms or less                                                               |  |            |
|                                          | ON→OFF             | 10ms or less (at 24VDC)                                                                                                                                                                                                                                 |                                            | ON→OFF  | 1.5ms or less (resistive load)                                              |  |            |
|                                          |                    |                                                                                                                                                                                                                                                         | External power supply for output part      | Voltage | 10.2 to 31.2VDC (ripple ratio: within 5%)                                   |  |            |
|                                          |                    |                                                                                                                                                                                                                                                         |                                            | Current | 30mA or lower (at 24VDC and all points ON), excluding external load current |  |            |
| Input type                               |                    | Positive common (sink type)                                                                                                                                                                                                                             | Surge suppressor                           |         | Zener diode                                                                 |  |            |
| Wiring method for common                 |                    | 16 points/common (2 points) (1-wire, terminal block type)                                                                                                                                                                                               |                                            |         |                                                                             |  |            |
| Number of occupied stations              |                    | 32-point assignment/station (32 points used)                                                                                                                                                                                                            |                                            |         |                                                                             |  |            |
| Module power supply                      | Voltage            | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                               |                                            |         |                                                                             |  |            |
|                                          | Current            | 55mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                              |                                            |         |                                                                             |  |            |
| Noise immunity                           |                    | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                  |                                            |         |                                                                             |  |            |
| Withstand voltage                        |                    | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                        |                                            |         |                                                                             |  |            |
| Insulation resistance                    |                    | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                       |                                            |         |                                                                             |  |            |
| Protection degree                        |                    | IP2X                                                                                                                                                                                                                                                    |                                            |         |                                                                             |  |            |
| Weight                                   |                    | 0.65kg                                                                                                                                                                                                                                                  |                                            |         |                                                                             |  |            |
| External connection system               |                    | 50-point terminal block<br>[Transmission circuit, module power supply, FG, I/O power supply, I/O signal]<br>M3.5×7 screw (tightening torque range: 0.68 to 0.92N·m)<br>Applicable solderless terminal: 2 or less                                        |                                            |         |                                                                             |  |            |
| Module mounting screw                    |                    | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)                                                                                                                                                                    |                                            |         |                                                                             |  |            |
| Applicable solderless terminal           |                    | • R1.25-3.5 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• RAV2-3.5 (compliant with JIS C 2805)<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |                                            |         |                                                                             |  |            |
| Wire                                     | Material           | Copper                                                                                                                                                                                                                                                  |                                            |         |                                                                             |  |            |
|                                          | Temperature rating | 75°C or more                                                                                                                                                                                                                                            |                                            |         |                                                                             |  |            |
| Accessory                                |                    | User's manual                                                                                                                                                                                                                                           |                                            |         |                                                                             |  |            |
| Part sold separately                     |                    | A6DIN1C, A2CCOM-TB                                                                                                                                                                                                                                      |                                            |         |                                                                             |  |            |



**MELSEC AJ65DBTB1-32DT1**

STAT FOR NO.  x10  x1

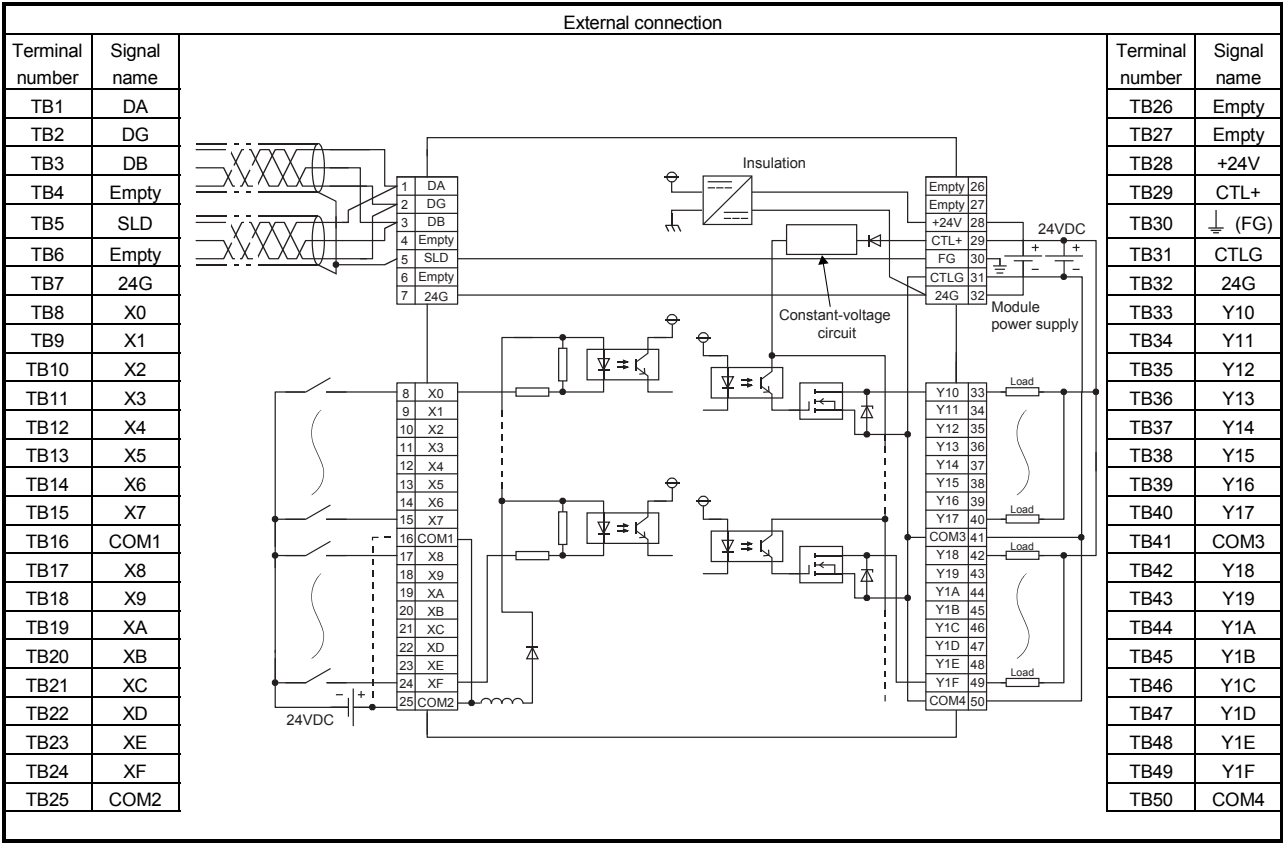
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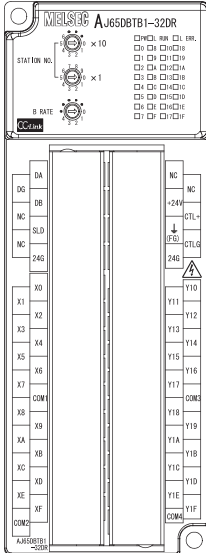
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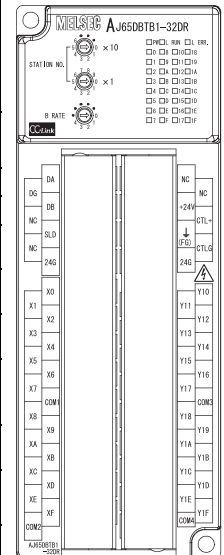
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\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

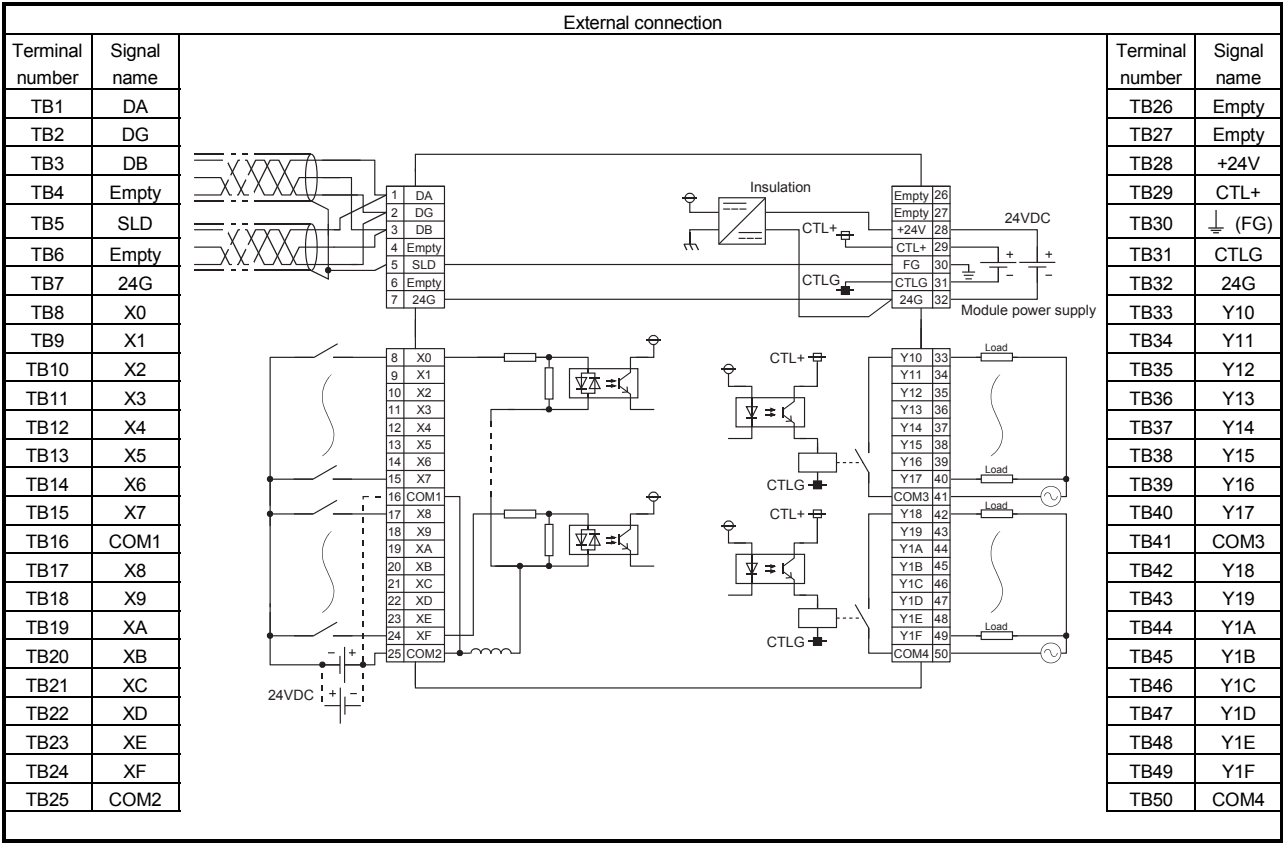


## 6.1.21 AJ65DBTB1-32DR combined module

| Type                                     |                    | DC input contact output combined module                                                                                                                                                                                                                 |  |                                                                 |            | Appearance                                                                           |                                                                                                                                                                                                                                                                                |  |  |
|------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------------------|------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|                                          |                    | AJ65DBTB1-32DR                                                                                                                                                                                                                                          |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Item                                     |                    | Input                                                                                                                                                                                                                                                   |  | Output                                                          |            |  |                                                                                                                                                                                                                                                                                |  |  |
| Number of input points                   |                    | 16 points                                                                                                                                                                                                                                               |  | Number of output points                                         |            |                                                                                      | 16 points                                                                                                                                                                                                                                                                      |  |  |
| Isolation method                         |                    | Photocoupler                                                                                                                                                                                                                                            |  | Isolation method                                                |            |                                                                                      | Photocoupler                                                                                                                                                                                                                                                                   |  |  |
| Rated input voltage                      |                    | 24VDC                                                                                                                                                                                                                                                   |  | Rated load voltage                                              |            |                                                                                      | 2A/point, 4A/common (2A/terminal) at 24VDC (resistive load) or 240VAC (cosφ=1)                                                                                                                                                                                                 |  |  |
| Rated input current                      |                    | Approx. 5mA                                                                                                                                                                                                                                             |  | Min. switching load                                             |            |                                                                                      | 5VDC, 1mA                                                                                                                                                                                                                                                                      |  |  |
| Operating voltage range                  |                    | 20.4 to 31.2VDC (ripple ratio: within 5%)                                                                                                                                                                                                               |  | Max. switching voltage                                          |            |                                                                                      | 264VAC, 125VDC                                                                                                                                                                                                                                                                 |  |  |
| Max. number of simultaneous input points |                    | 100% (at 26.4VDC)                                                                                                                                                                                                                                       |  | Life                                                            | Mechanical |                                                                                      | 20 million times or more                                                                                                                                                                                                                                                       |  |  |
| ON voltage/ON current                    |                    | 15VDC or higher/3mA or higher                                                                                                                                                                                                                           |  |                                                                 | Electrical |                                                                                      | Rated switching voltage/current load:<br>100 thousand times or more<br>200VAC 1.5A, 240VAC 1A (cosφ=0.7):<br>100 thousand times or more<br>200VAC 1A, 240VAC 0.5A (cosφ=0.35):<br>100 thousand times or more<br>24VDC 1A, 100VDC 0.1A (L/R=7ms):<br>100 thousand times or more |  |  |
| OFF voltage/OFF current                  |                    | 5VDC or lower/1.5mA or lower                                                                                                                                                                                                                            |  | Max. switching frequency                                        |            |                                                                                      | 3600 times/hour                                                                                                                                                                                                                                                                |  |  |
| Input resistance                         |                    | Approx. 4.7kΩ                                                                                                                                                                                                                                           |  | Response time                                                   | OFF→ON     |                                                                                      | 10ms or less                                                                                                                                                                                                                                                                   |  |  |
| Response time                            | OFF→ON             | 10ms or less (at 24VDC)                                                                                                                                                                                                                                 |  |                                                                 | ON→OFF     |                                                                                      | 12ms or less                                                                                                                                                                                                                                                                   |  |  |
|                                          | ON→OFF             | 10ms or less (at 24VDC)                                                                                                                                                                                                                                 |  | External power supply for output part (CTL+ and CTLG terminals) | Voltage    |                                                                                      | 24VDC ±10% (ripple ratio: 4Vp-p or lower)                                                                                                                                                                                                                                      |  |  |
|                                          |                    |                                                                                                                                                                                                                                                         |  |                                                                 | Current    |                                                                                      | 90mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                     |  |  |
| Wiring method for common                 |                    | 16 points/common (2 points) (1-wire, terminal block type)                                                                                                                                                                                               |  | Wiring method for common                                        |            |                                                                                      | 8 points/common (1-wire, terminal block type)                                                                                                                                                                                                                                  |  |  |
| Input type                               |                    | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                          |  | Surge suppressor                                                |            |                                                                                      | None                                                                                                                                                                                                                                                                           |  |  |
| Number of occupied stations              |                    | 32-point assignment/station (32 points used)                                                                                                                                                                                                            |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Module power supply                      | Voltage            | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                               |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
|                                          | Current            | 60mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                              |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Noise immunity                           |                    | Noise voltage: 1500Vp-p (AC type), 500Vp-p (DC type), noise width 1μs, noise frequency 25 to 60Hz (noise simulator condition)                                                                                                                           |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Withstand voltage                        |                    | 1500VAC for 1 minute between all AC external terminals and ground<br>500VAC for 1 minute between all DC external terminals and ground                                                                                                                   |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Insulation resistance                    |                    | 10MΩ or higher between all AC external terminals and ground (500VDC insulation resistance tester)<br>10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                  |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Protection degree                        |                    | IP1X                                                                                                                                                                                                                                                    |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Weight                                   |                    | 0.65kg                                                                                                                                                                                                                                                  |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| External connection system               |                    | 50-point terminal block [Transmission circuit, module power supply, FG, I/O power supply, I/O signal]<br>M3.5×7 screw (tightening torque range: 0.68 to 0.92N·m)<br>Applicable solderless terminal: 2 or less                                           |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Module mounting screw                    |                    | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)                                                                                                                                                                    |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Applicable solderless terminal           |                    | • R1.25-3.5 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• RAV2-3.5 (compliant with JIS C 2805)<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire] |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Wire                                     | Material           | Copper                                                                                                                                                                                                                                                  |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
|                                          | Temperature rating | 75°C or more                                                                                                                                                                                                                                            |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Accessory                                |                    | User's manual                                                                                                                                                                                                                                           |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |
| Part sold separately                     |                    | A6DIN1C, A2CCOM-TB                                                                                                                                                                                                                                      |  |                                                                 |            |                                                                                      |                                                                                                                                                                                                                                                                                |  |  |



\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.





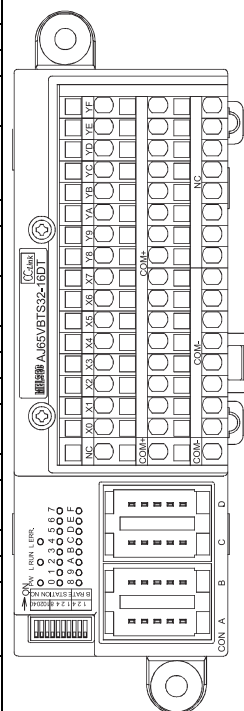
## 6.2 Spring Clamp Terminal Block Type Combined Module

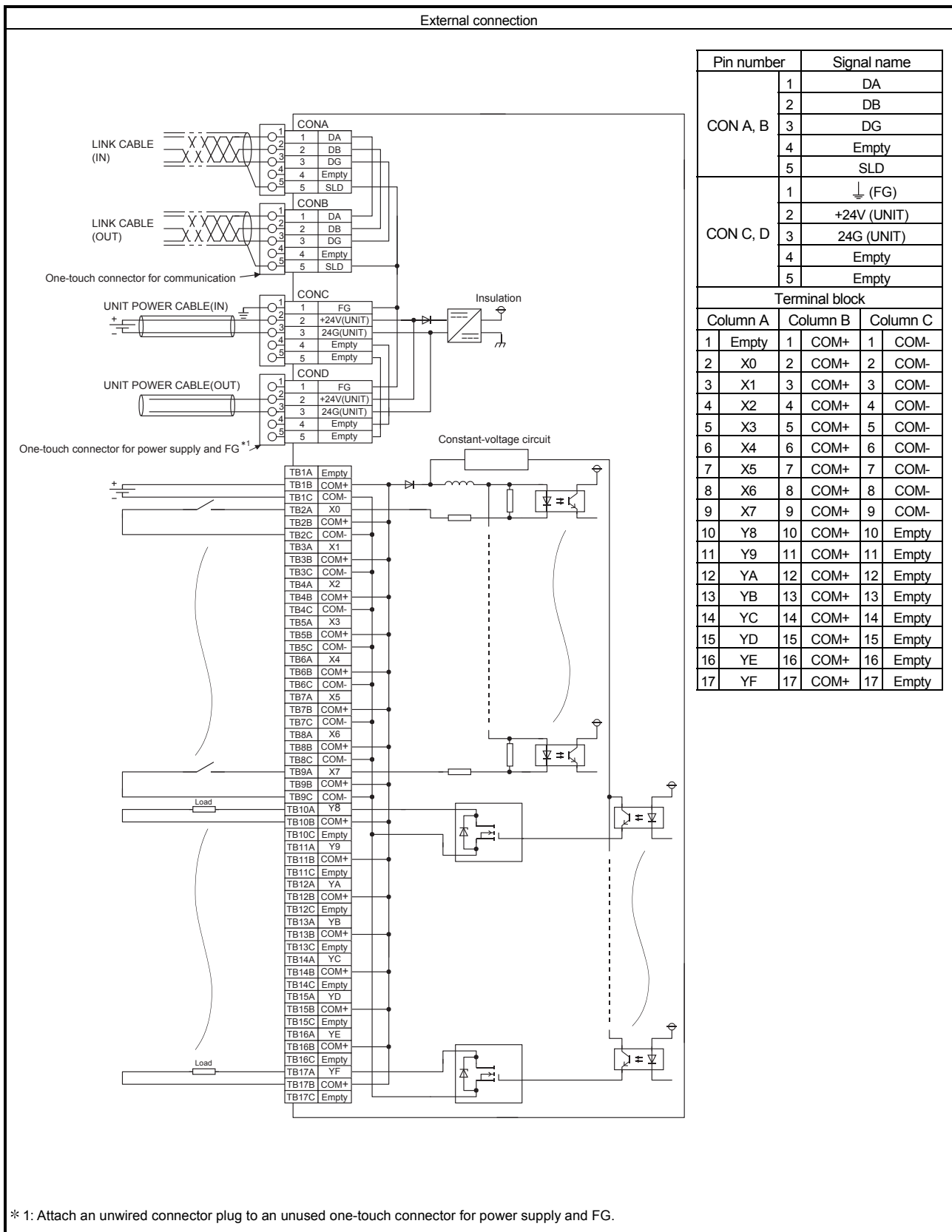
## 6.2.1 AJ65VBTS32-16DT combined module

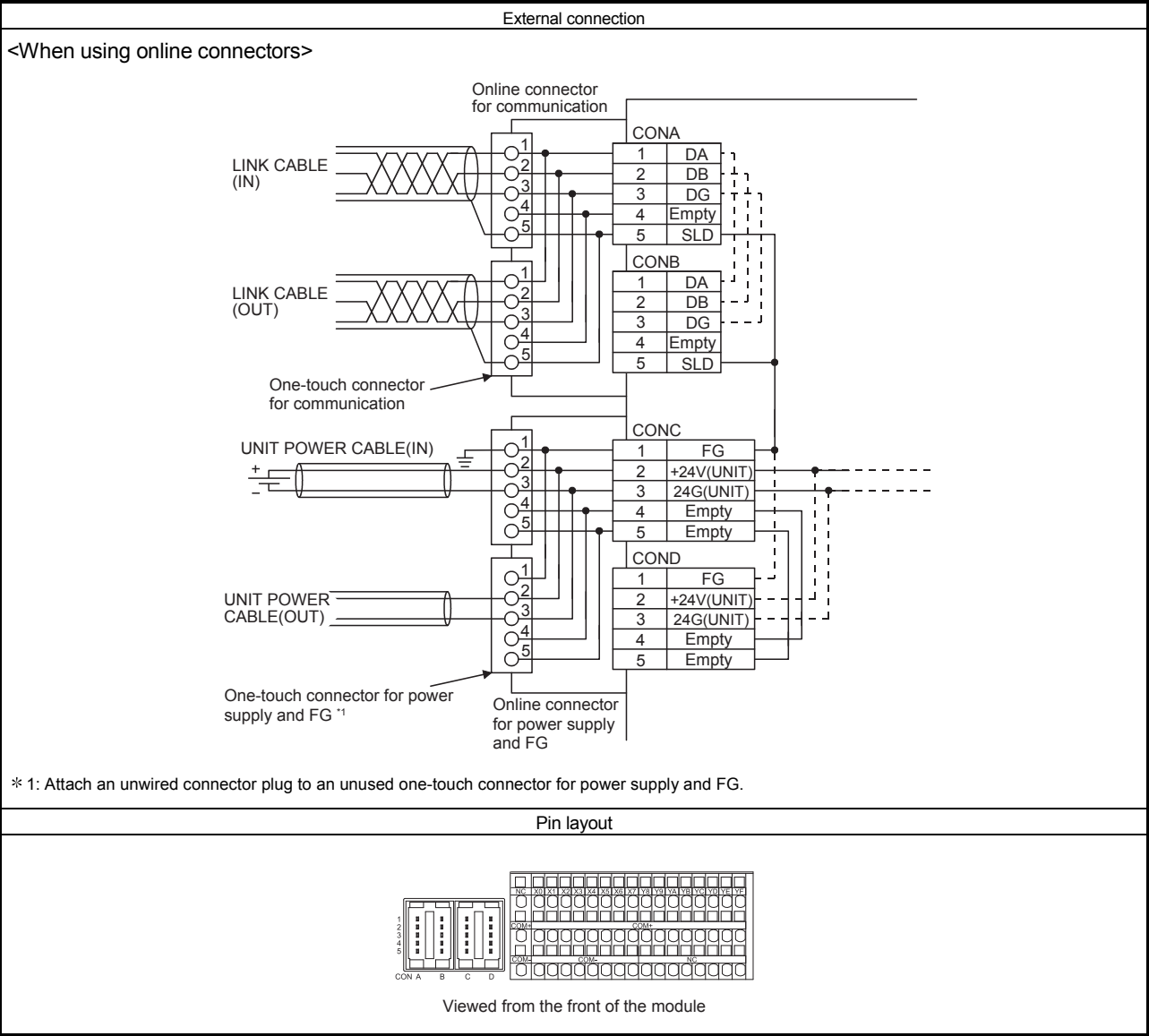
| Type                                     |                                     | DC input transistor output combined module                                                                                                                                                                                      |                                       |  |                                                                                                                                                | Appearance |
|------------------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Item                                     |                                     | AJ65VBTS32-16DT                                                                                                                                                                                                                 |                                       |  |                                                                                                                                                |            |
| Input                                    |                                     | Output                                                                                                                                                                                                                          |                                       |  |                                                                                                                                                |            |
| Number of input points                   |                                     | 8 points                                                                                                                                                                                                                        | Number of output points               |  | 8 points                                                                                                                                       |            |
| Isolation method                         |                                     | Photocoupler                                                                                                                                                                                                                    | Isolation method                      |  | Photocoupler                                                                                                                                   |            |
| Rated input voltage                      |                                     | 24VDC                                                                                                                                                                                                                           | Rated load voltage                    |  | 24VDC                                                                                                                                          |            |
| Rated input current                      |                                     | Approx. 5mA                                                                                                                                                                                                                     | Operating load voltage range          |  | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                      |            |
| Operating voltage range                  |                                     | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       | Max. load current                     |  | 0.5A/point, 4A/common                                                                                                                          |            |
| Max. number of simultaneous input points |                                     | 100%                                                                                                                                                                                                                            | Max. inrush current                   |  | 1.0A, 10ms or less                                                                                                                             |            |
| ON voltage/ON current                    |                                     | 14VDC or higher/3.5mA or higher                                                                                                                                                                                                 | Leakage current at OFF                |  | 0.1mA or lower                                                                                                                                 |            |
| OFF voltage/OFF current                  |                                     | 6VDC or lower/1.7mA or lower                                                                                                                                                                                                    | Max. voltage drop at ON               |  | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A                                                                                       |            |
| Input resistance                         |                                     | Approx. 4.7kΩ                                                                                                                                                                                                                   | Output type                           |  | Sink type                                                                                                                                      |            |
| Response time                            | OFF→ON                              | 1.5ms or less (at 24VDC)                                                                                                                                                                                                        | Protection function                   |  | None                                                                                                                                           |            |
|                                          | ON→OFF                              | 1.5ms or less (at 24VDC)                                                                                                                                                                                                        | Response time                         |  | OFF→ON<br>1ms or less<br>ON→OFF<br>1ms or less (resistive load)                                                                                |            |
|                                          |                                     |                                                                                                                                                                                                                                 | External power supply for output part |  | Voltage<br>19.2 to 26.4VDC (ripple ratio: within 5%)<br>Current<br>15mA or lower (at 24VDC and all points ON), excluding external load current |            |
| Input type                               |                                     | Positive common (sink type)                                                                                                                                                                                                     | Surge suppressor                      |  | Zener diode                                                                                                                                    |            |
| Supply current for connected device      |                                     | 1.0A or lower/common                                                                                                                                                                                                            |                                       |  |                                                                                                                                                |            |
| Wiring method for common                 |                                     | 16 points/common (input: 3-wire spring clamp terminal block type, output: 2-wire spring clamp terminal block type)                                                                                                              |                                       |  |                                                                                                                                                |            |
| Number of occupied stations              |                                     | 32-point assignment/station (16 points used)                                                                                                                                                                                    |                                       |  |                                                                                                                                                |            |
| Module power supply                      | Voltage                             | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |                                       |  |                                                                                                                                                |            |
|                                          | Current                             | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                                      |                                       |  |                                                                                                                                                |            |
| Noise immunity                           |                                     | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                          |                                       |  |                                                                                                                                                |            |
| Withstand voltage                        |                                     | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                |                                       |  |                                                                                                                                                |            |
| Insulation resistance                    |                                     | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                               |                                       |  |                                                                                                                                                |            |
| Protection degree                        |                                     | IP1XB                                                                                                                                                                                                                           |                                       |  |                                                                                                                                                |            |
| Weight                                   |                                     | 0.24kg                                                                                                                                                                                                                          |                                       |  |                                                                                                                                                |            |
| External connection system               | Communication part                  | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional> Online connector for communication: A6CON-LJ5P                                                       |                                       |  |                                                                                                                                                |            |
|                                          | Power supply part                   | One-touch connector for power supply and FG [Module power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional> Online connector for power supply: A6CON-PWJ5P                             |                                       |  |                                                                                                                                                |            |
|                                          | I/O part                            | 2-piece spring clamp terminal block [I/O power supply, I/O signals]                                                                                                                                                             |                                       |  |                                                                                                                                                |            |
| Applicable DIN rail                      |                                     | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                               |                                       |  |                                                                                                                                                |            |
| Applicable wire size                     | Connector for communication         | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                         |                                       |  |                                                                                                                                                |            |
|                                          | Connector for power supply and FG   | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                      |                                       |  |                                                                                                                                                |            |
|                                          | Spring clamp terminal block for I/O | Stranded wire 0.08 to 1.5mm <sup>2</sup> (28 to 16 AWG) * 1<br>Wire strip length: 8 to 11mm                                                                                                                                     |                                       |  |                                                                                                                                                |            |
|                                          | Applicable solderless terminal      | TE0.5 [Applicable wire size: 0.5mm <sup>2</sup> ]<br>TE0.75 [Applicable wire size: 0.75mm <sup>2</sup> ]<br>TE1 [Applicable wire size: 0.9 to 1.0mm <sup>2</sup> ]<br>TE1.5 [Applicable wire size: 1.25 to 1.5mm <sup>2</sup> ] |                                       |  |                                                                                                                                                |            |
| Accessory                                |                                     | User's manual, Holding fixtures for screw installation                                                                                                                                                                          |                                       |  |                                                                                                                                                |            |

The diagram illustrates the physical layout of the AJ65VBTS32-16DT module. It features a DIN rail on the left for power and ground connections, labeled with 'COM+', 'COM-', and 'NC'. A 32-pin IDC connector is located on the top right, with pins numbered 1 through 32. Below it, a 5-pin IDC connector is shown, labeled 'COM+', 'COM-', and 'NC'. The module is mounted on a DIN rail, and the overall dimensions are indicated by letters A, B, C, and D.

\* 1: Insert one wire per terminal.



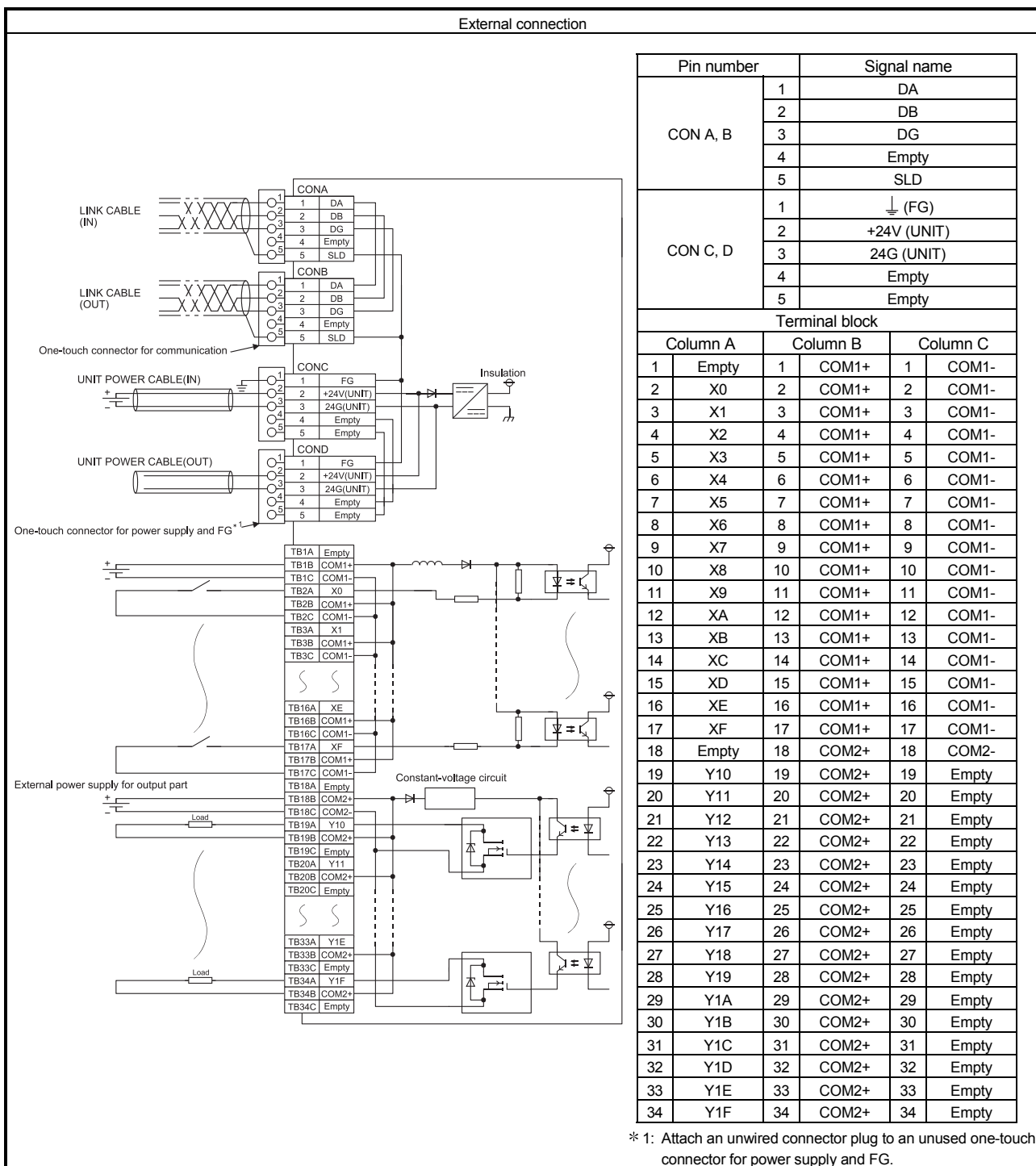


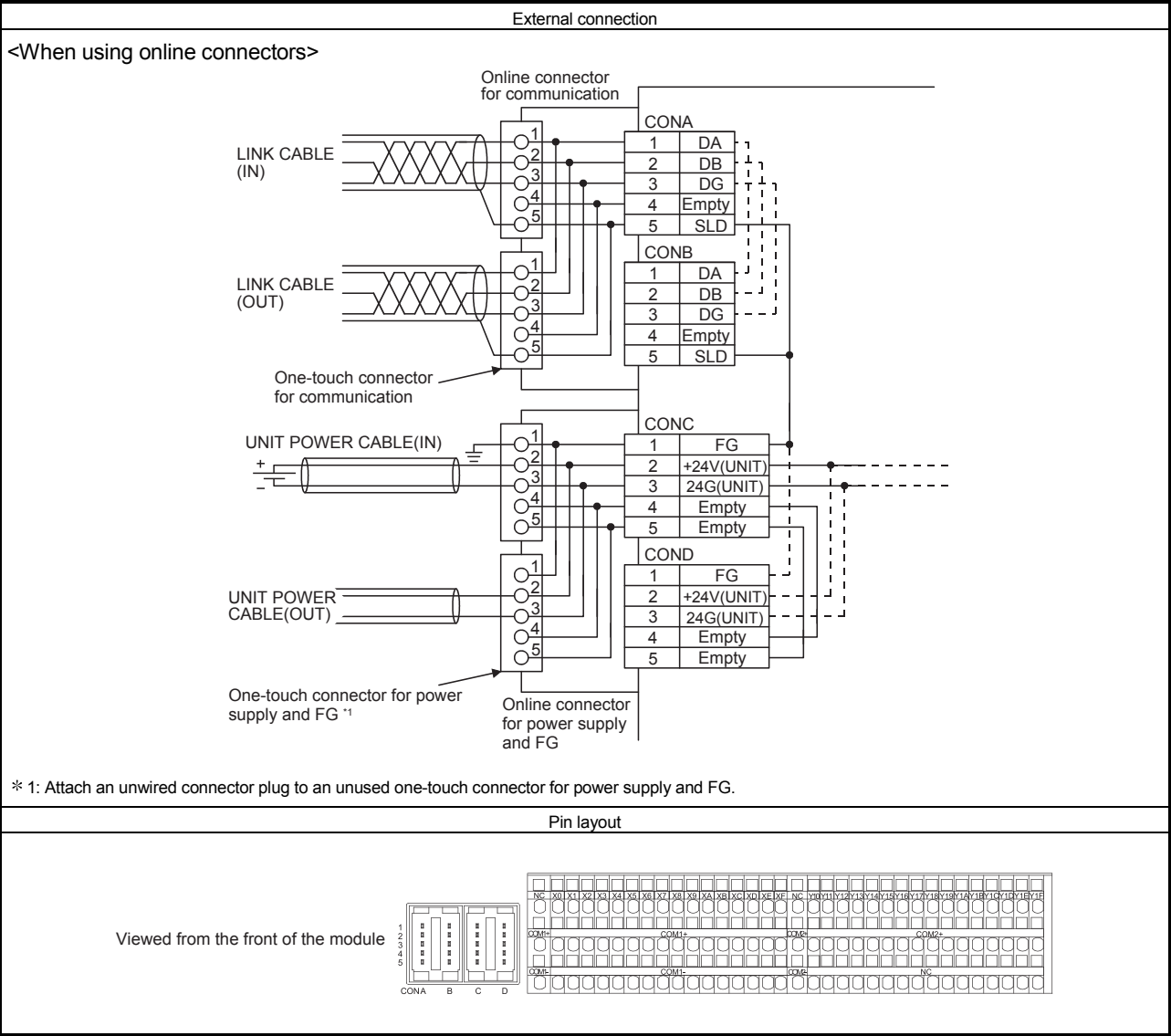


## 6.2.2 AJ65VBTS32-32DT combined module

| Type                                     |                                                                                                        | DC input transistor output combined module                                                                                                                                                                                      |                                                             | Appearance                                                                  |
|------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------------------|
| Item                                     |                                                                                                        | AJ65VBTS32-32DT                                                                                                                                                                                                                 |                                                             |                                                                             |
| Input                                    |                                                                                                        | Output                                                                                                                                                                                                                          |                                                             |                                                                             |
| Number of input points                   | 16 points                                                                                              | Number of output points                                                                                                                                                                                                         | 16 points                                                   |                                                                             |
| Isolation method                         | Photocoupler                                                                                           | Isolation method                                                                                                                                                                                                                | Photocoupler                                                |                                                                             |
| Rated input voltage                      | 24VDC                                                                                                  | Rated load voltage                                                                                                                                                                                                              | 12/24VDC                                                    |                                                                             |
| Rated input current                      | Approx. 5mA                                                                                            | Operating load voltage range                                                                                                                                                                                                    | 10.2 to 26.4VDC (ripple ratio: within 5%)                   |                                                                             |
| Operating voltage range                  | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                              | Max. load current                                                                                                                                                                                                               | 0.5A/point, 4A/common                                       |                                                                             |
| Max. number of simultaneous input points | 100% or 75% (Refer to Section1.3.)                                                                     | Max. inrush current                                                                                                                                                                                                             | 1.0A, 10ms or less                                          |                                                                             |
| ON voltage/ON current                    | 14VDC or higher/3.5mA or higher                                                                        | Leakage current at OFF                                                                                                                                                                                                          | 0.1mA or lower                                              |                                                                             |
| OFF voltage/OFF current                  | 6VDC or lower/1.7mA or lower                                                                           | Max. voltage drop at ON                                                                                                                                                                                                         | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A    |                                                                             |
| Input resistance                         | Approx. 4.7kΩ                                                                                          |                                                                                                                                                                                                                                 |                                                             |                                                                             |
| Response time                            | OFF→ON                                                                                                 | Output type                                                                                                                                                                                                                     | Sink type                                                   |                                                                             |
|                                          | ON→OFF                                                                                                 | Protection function                                                                                                                                                                                                             | None                                                        |                                                                             |
|                                          |                                                                                                        | Response time                                                                                                                                                                                                                   | OFF→ON                                                      | 1ms or less                                                                 |
|                                          |                                                                                                        |                                                                                                                                                                                                                                 | ON→OFF                                                      | 1ms or less (resistive load)                                                |
|                                          |                                                                                                        | External power supply for output part                                                                                                                                                                                           | Voltage                                                     | 10.2 to 26.4VDC (ripple ratio: within 5%)                                   |
|                                          |                                                                                                        |                                                                                                                                                                                                                                 | Current                                                     | 30mA or lower (at 24VDC and all points ON), excluding external load current |
| Wiring method for common                 | 16 points/common (3-wire, spring clamp terminal block type)                                            | Wiring method for common                                                                                                                                                                                                        | 16 points/common (2-wire, spring clamp terminal block type) |                                                                             |
| Input type                               | Positive common (sink type)                                                                            | Surge suppressor                                                                                                                                                                                                                | Zener diode                                                 |                                                                             |
| Supply current for connected device      | 1.0A or lower/common                                                                                   |                                                                                                                                                                                                                                 |                                                             |                                                                             |
| Number of occupied stations              | 32-point assignment/station (32 points used)                                                           |                                                                                                                                                                                                                                 |                                                             |                                                                             |
| Module power supply                      | Voltage                                                                                                | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                       |                                                             |                                                                             |
|                                          | Current                                                                                                | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                      |                                                             |                                                                             |
| Noise immunity                           | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition) |                                                                                                                                                                                                                                 |                                                             |                                                                             |
| Withstand voltage                        | 500VAC for 1 minute between all DC external terminals and ground                                       |                                                                                                                                                                                                                                 |                                                             |                                                                             |
| Insulation resistance                    | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)      |                                                                                                                                                                                                                                 |                                                             |                                                                             |
| Protection degree                        | IP1XB                                                                                                  |                                                                                                                                                                                                                                 |                                                             |                                                                             |
| Weight                                   | 0.41kg                                                                                                 |                                                                                                                                                                                                                                 |                                                             |                                                                             |
| External connection system               | Communication part                                                                                     | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional> Online connector for communication: A6CON-LJ5P                                                       |                                                             |                                                                             |
|                                          | Power supply part                                                                                      | One-touch connector for power supply and FG [Module power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional> Online connector for power supply: A6CON-PWJ5P                             |                                                             |                                                                             |
|                                          | I/O part                                                                                               | 2-piece spring clamp terminal block [I/O power supply, I/O signals]                                                                                                                                                             |                                                             |                                                                             |
| Applicable DIN rail                      | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                      |                                                                                                                                                                                                                                 |                                                             |                                                                             |
| Applicable wire size                     | Connector for communication                                                                            | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                         |                                                             |                                                                             |
|                                          | Connector for power supply and FG                                                                      | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                      |                                                             |                                                                             |
|                                          | Spring clamp terminal block for I/O                                                                    | Stranded wire 0.08 to 1.5mm <sup>2</sup> (28 to 16 AWG) * 1<br>Wire strip length: 8 to 11mm                                                                                                                                     |                                                             |                                                                             |
|                                          | Applicable solderless terminal                                                                         | TE0.5 [Applicable wire size: 0.5mm <sup>2</sup> ]<br>TE0.75 [Applicable wire size: 0.75mm <sup>2</sup> ]<br>TE1 [Applicable wire size: 0.9 to 1.0mm <sup>2</sup> ]<br>TE1.5 [Applicable wire size: 1.25 to 1.5mm <sup>2</sup> ] |                                                             |                                                                             |
| Accessory                                | User's manual, Holding fixtures for screw installation                                                 |                                                                                                                                                                                                                                 |                                                             |                                                                             |

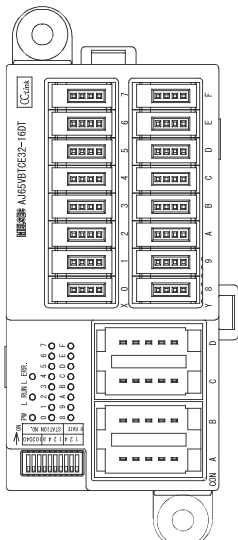
\* 1: Insert one wire per terminal.



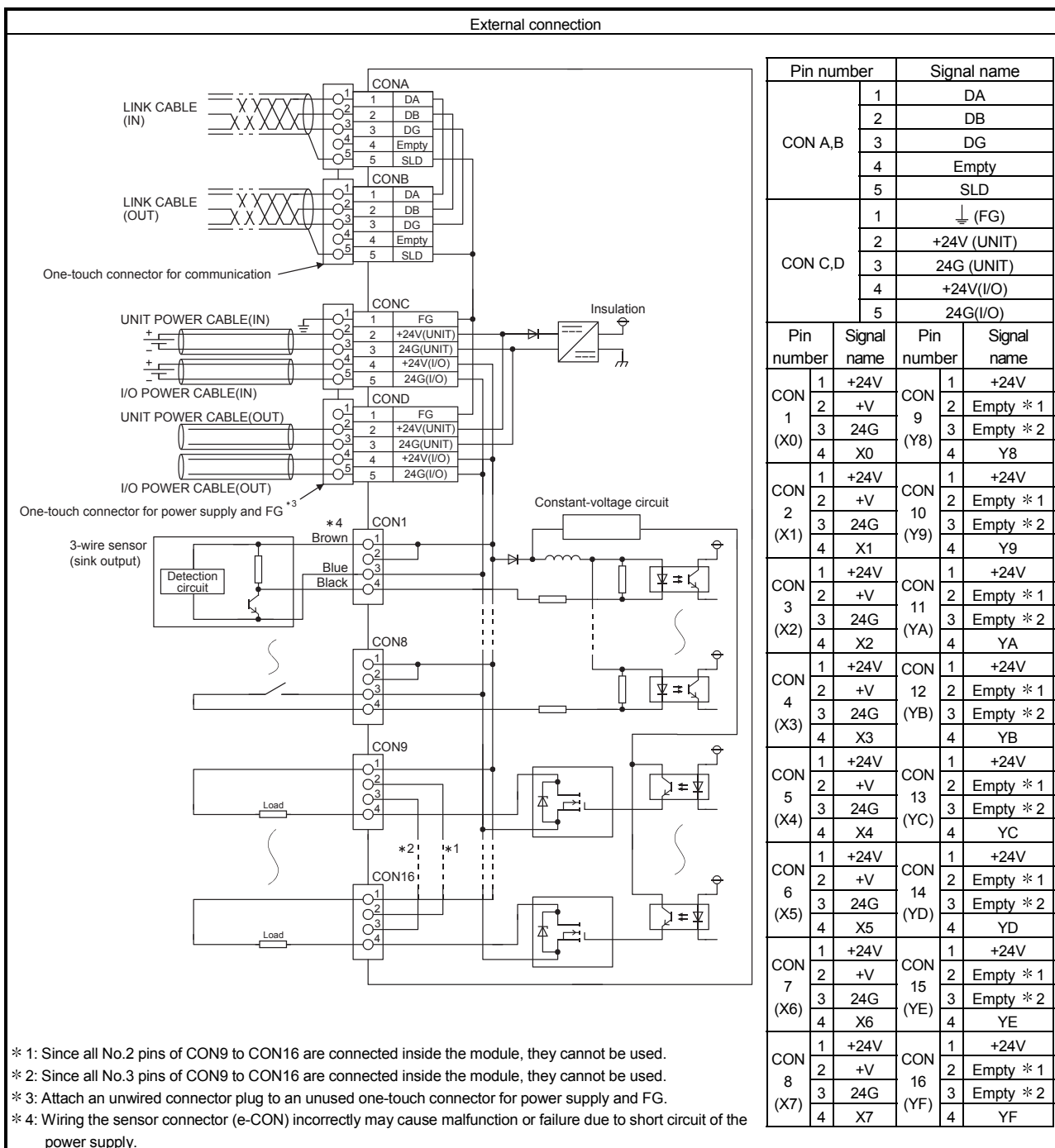


## 6.3 Sensor Connector (e-CON) Type Combined Module

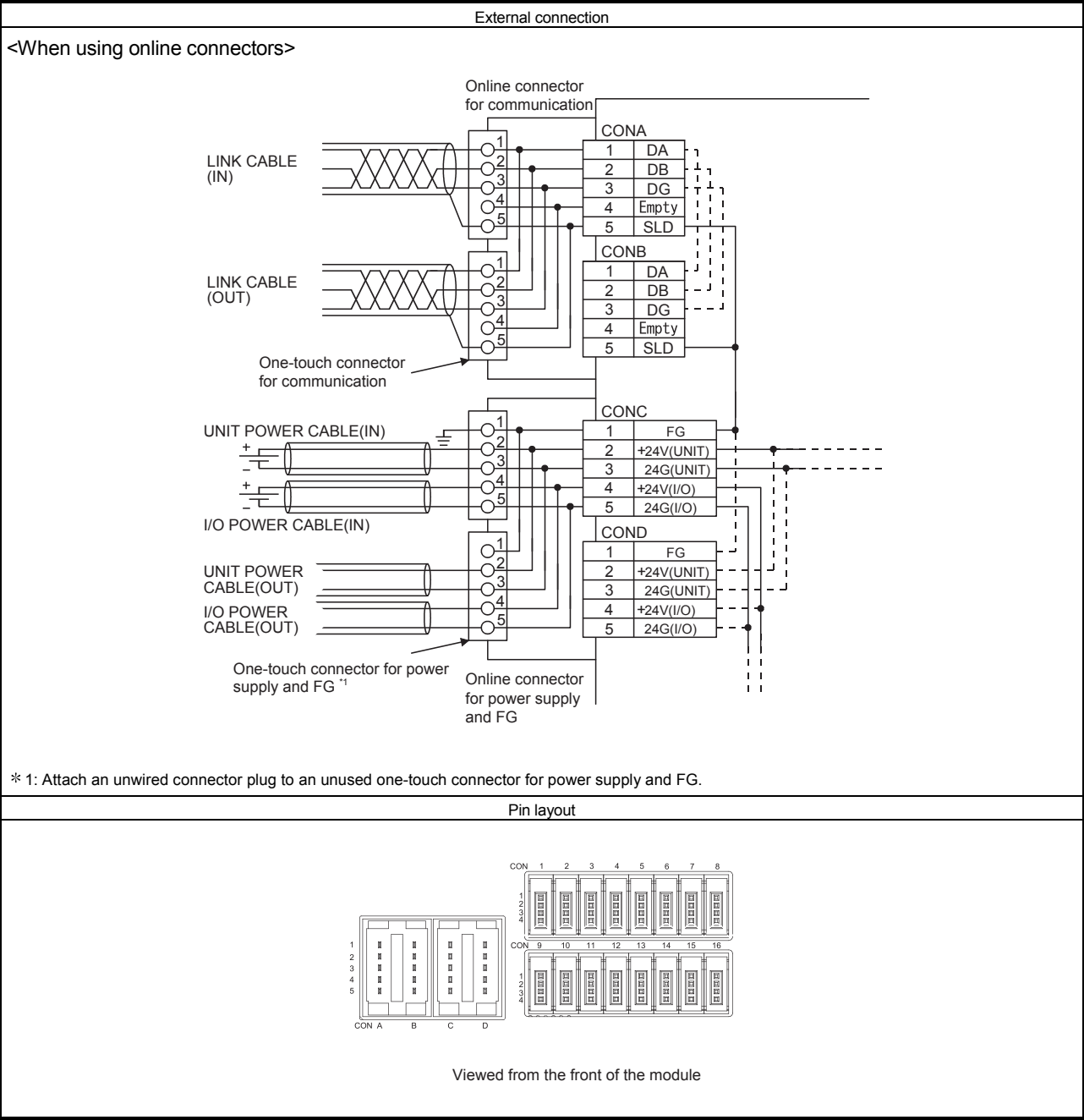
## 6.3.1 AJ65VBTCE32-16DT combined module

| Type                                     |                                                                                                              | DC input transistor output combined module                                                                                                                                                                            |                                                                  | Appearance                                                                           |                                                                            |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Item                                     |                                                                                                              | AJ65VBTCE32-16DT                                                                                                                                                                                                      |                                                                  |                                                                                      |                                                                            |
| Input                                    |                                                                                                              | Output                                                                                                                                                                                                                |                                                                  |  |                                                                            |
| Number of input points                   | 8 points                                                                                                     | Number of output points                                                                                                                                                                                               | 8 points                                                         |                                                                                      |                                                                            |
| Isolation method                         | Photocoupler                                                                                                 | Isolation method                                                                                                                                                                                                      | Photocoupler                                                     |                                                                                      |                                                                            |
| Rated input voltage                      | 24VDC                                                                                                        | Rated load voltage                                                                                                                                                                                                    | 24VDC                                                            |                                                                                      |                                                                            |
| Rated input current                      | Approx. 5mA                                                                                                  | Operating load voltage range                                                                                                                                                                                          | 19.2 to 26.4VDC (ripple ratio: within 5%)                        |                                                                                      |                                                                            |
| Operating voltage range                  | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                    | Max. load current                                                                                                                                                                                                     | 0.1A/point, 0.8A/common                                          |                                                                                      |                                                                            |
| Max. number of simultaneous input points | 100%                                                                                                         | Max. inrush current                                                                                                                                                                                                   | 0.7A, 10ms or less                                               |                                                                                      |                                                                            |
| ON voltage/ON current                    | 14VDC or higher/3.5mA or higher                                                                              | Leakage current at OFF                                                                                                                                                                                                | 0.1mA or lower                                                   |                                                                                      |                                                                            |
| OFF voltage/OFF current                  | 6VDC or lower/1.7mA or lower                                                                                 | Max. voltage drop at ON                                                                                                                                                                                               | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A         |                                                                                      |                                                                            |
| Input resistance                         | Approx. 4.7kΩ                                                                                                |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |
| Response time                            | OFF→ON                                                                                                       | Output type                                                                                                                                                                                                           | Sink type                                                        |                                                                                      |                                                                            |
|                                          | ON→OFF                                                                                                       | Protection function                                                                                                                                                                                                   | Overload protection, overvoltage protection, overheat protection |                                                                                      |                                                                            |
|                                          |                                                                                                              | Response time                                                                                                                                                                                                         | OFF→ON                                                           |                                                                                      | 1ms or less                                                                |
|                                          |                                                                                                              |                                                                                                                                                                                                                       | ON→OFF                                                           |                                                                                      | 1ms or less (resistive load)                                               |
|                                          |                                                                                                              | External power supply for output part                                                                                                                                                                                 | Voltage                                                          |                                                                                      | 19.2 to 26.4VDC (ripple ratio: within 5%)                                  |
|                                          |                                                                                                              |                                                                                                                                                                                                                       | Current                                                          |                                                                                      | 5mA or lower (at 24VDC and all points ON), excluding external load current |
| Input type                               | Positive common (sink type)                                                                                  | Surge suppressor                                                                                                                                                                                                      | Zener diode                                                      |                                                                                      |                                                                            |
| Supply current for connected device      | 1.0A or lower/common                                                                                         |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |
| Wiring method for common                 | 16 points/common (input: 3-wire sensor connector (e-CON) type, output: 2-wire sensor connector (e-CON) type) |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |
| Number of occupied stations              | 32-point assignment/station (16 points used)                                                                 |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |
| Module power supply                      | Voltage                                                                                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                             |                                                                  |                                                                                      |                                                                            |
|                                          | Current                                                                                                      | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                            |                                                                  |                                                                                      |                                                                            |
| Noise immunity                           | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)       |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |
| Withstand voltage                        | 500VAC for 1 minute between all DC external terminals and ground                                             |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |
| Insulation resistance                    | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)            |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |
| Protection degree                        | IP1XB                                                                                                        |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |
| Weight                                   | 0.11kg                                                                                                       |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |
| External connection system               | Communication part                                                                                           | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional> Online connector for communication: A6CON-LJ5P                                             |                                                                  |                                                                                      |                                                                            |
|                                          | Power supply part                                                                                            | One-touch connector for power supply and FG [Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional> Online connector for power supply: A6CON-PWJ5P |                                                                  |                                                                                      |                                                                            |
|                                          | I/O part                                                                                                     | Sensor connector (e-CON) [I/O signals] 4-pin IDC plug is sold separately. * 1                                                                                                                                         |                                                                  |                                                                                      |                                                                            |
| Applicable DIN rail                      | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                            |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |
| Applicable wire size                     | Connector for communication                                                                                  | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                               |                                                                  |                                                                                      |                                                                            |
|                                          | Connector for power supply and FG                                                                            | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                            |                                                                  |                                                                                      |                                                                            |
|                                          | Connector for I/O                                                                                            | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                              |                                                                  |                                                                                      |                                                                            |
| Accessory                                | User's manual, Holding fixtures for screw installation                                                       |                                                                                                                                                                                                                       |                                                                  |                                                                                      |                                                                            |

\* 1: Refer to Section 1.6.2 for details.

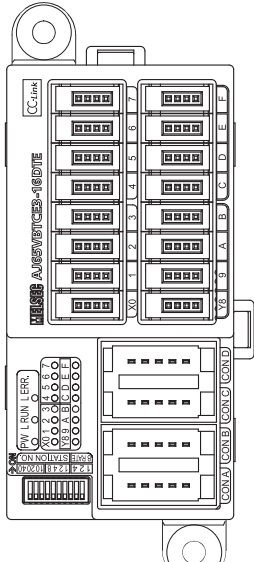




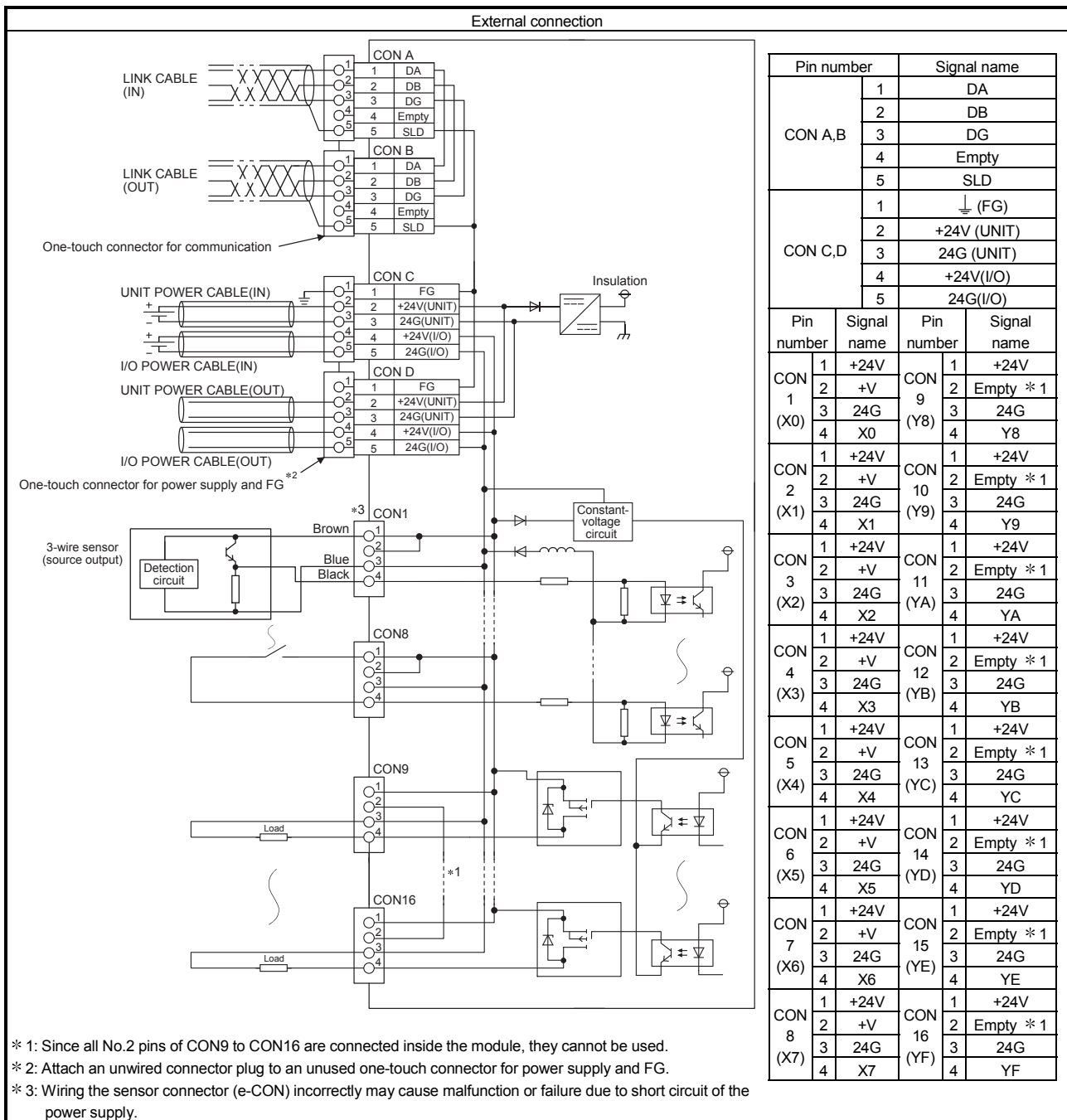


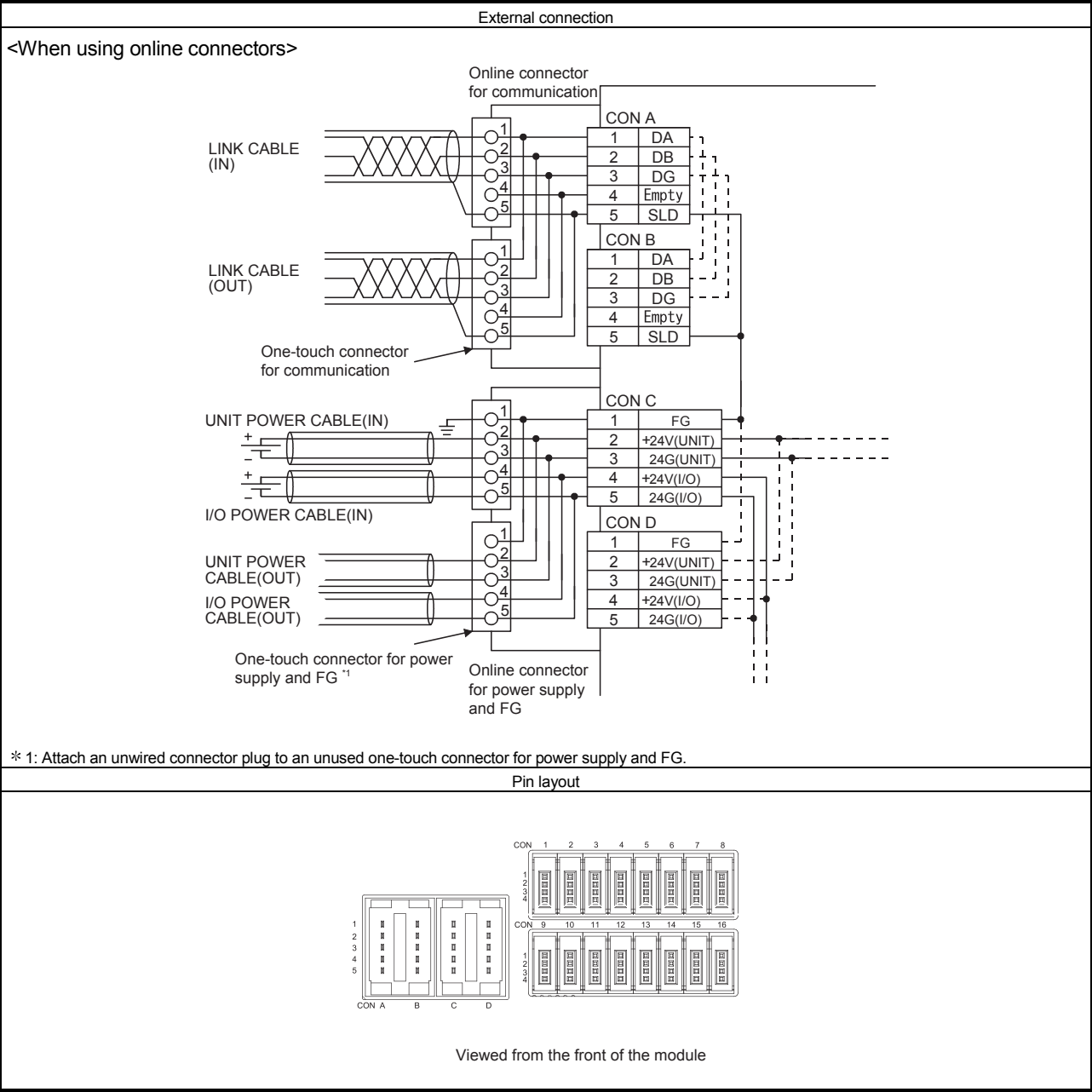
## 6.3.2 AJ65VBTCE3-16DTE combined module

| Type                                     |                                   | DC input transistor output combined module                                                                                                                                                                            |                              |                                                                                  |                                                             | Appearance |
|------------------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------------|------------|
| Item                                     |                                   | AJ65VBTCE3-16DTE                                                                                                                                                                                                      |                              |                                                                                  |                                                             |            |
| Input                                    |                                   | Output                                                                                                                                                                                                                |                              |                                                                                  |                                                             |            |
| Number of input points                   |                                   | 8 points                                                                                                                                                                                                              | Number of output points      |                                                                                  | 8 points                                                    |            |
| Isolation method                         |                                   | Photocoupler                                                                                                                                                                                                          | Isolation method             |                                                                                  | Photocoupler                                                |            |
| Rated input voltage                      |                                   | 24VDC                                                                                                                                                                                                                 | Rated load voltage           |                                                                                  | 24VDC                                                       |            |
| Rated input current                      |                                   | Approx. 5mA                                                                                                                                                                                                           | Operating load voltage range |                                                                                  | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                |            |
| Operating voltage range                  |                                   | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                                                                                                                                                          | Max. load current            |                                                                                  | 0.1A/point, 0.8A/common                                     |            |
| Max. number of simultaneous input points |                                   | 100%                                                                                                                                                                                                                  | Max. inrush current          |                                                                                  | 0.7A, 10ms or less                                          |            |
| ON voltage/ON current                    |                                   | 14VDC or higher/3.5mA or higher                                                                                                                                                                                       | Leakage current at OFF       |                                                                                  | 0.1mA or lower                                              |            |
| OFF voltage/OFF current                  |                                   | 6VDC or lower/1.7mA or lower                                                                                                                                                                                          | Max. voltage drop at ON      |                                                                                  | 0.1VDC or lower (TYP.) 0.1A,<br>0.2VDC or lower (MAX.) 0.1A |            |
| Input resistance                         |                                   | Approx. 4.7kΩ                                                                                                                                                                                                         |                              |                                                                                  |                                                             |            |
| Response time                            | OFF→ON                            | 1.5ms or less (at 24VDC)                                                                                                                                                                                              | Output type                  |                                                                                  | Source type                                                 |            |
|                                          | ON→OFF                            | 1.5ms or less (at 24VDC)                                                                                                                                                                                              | Protection function          |                                                                                  | Overload protection, overheat protection                    |            |
|                                          |                                   | Response time                                                                                                                                                                                                         | OFF→ON                       | 1ms or less                                                                      |                                                             |            |
|                                          |                                   |                                                                                                                                                                                                                       | ON→OFF                       | 1ms or less (resistive load)                                                     |                                                             |            |
|                                          |                                   | External power supply for output part                                                                                                                                                                                 | Voltage                      | 19.2 to 26.4VDC<br>(ripple ratio: within 5%)                                     |                                                             |            |
|                                          |                                   |                                                                                                                                                                                                                       | Current                      | 7mA or lower<br>(at 24VDC and all points ON),<br>excluding external load current |                                                             |            |
| Input type                               |                                   | Negative common (source type)                                                                                                                                                                                         | Surge suppressor             |                                                                                  | Zener diode                                                 |            |
| Supply current for connected device      |                                   | 1.0A or lower/common                                                                                                                                                                                                  |                              |                                                                                  |                                                             |            |
| Wiring method for common                 |                                   | 16 points/common<br>(input: 3-wire sensor connector (e-CON) type, output: 3-wire sensor connector (e-CON) type)                                                                                                       |                              |                                                                                  |                                                             |            |
| Number of occupied stations              |                                   | 32-point assignment/station (16 points used)                                                                                                                                                                          |                              |                                                                                  |                                                             |            |
| Module power supply                      | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                             |                              |                                                                                  |                                                             |            |
|                                          | Current                           | 40mA or lower (at 24VDC and all points ON)                                                                                                                                                                            |                              |                                                                                  |                                                             |            |
| Noise immunity                           |                                   | Noise voltage 500Vp-p, noise width 1μs,<br>noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                             |                              |                                                                                  |                                                             |            |
| Withstand voltage                        |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                      |                              |                                                                                  |                                                             |            |
| Insulation resistance                    |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                     |                              |                                                                                  |                                                             |            |
| Protection degree                        |                                   | IP1XB                                                                                                                                                                                                                 |                              |                                                                                  |                                                             |            |
| Weight                                   |                                   | 0.11kg                                                                                                                                                                                                                |                              |                                                                                  |                                                             |            |
| External connection system               | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional> Online connector for communication: A6CON-LJ5P                                             |                              |                                                                                  |                                                             |            |
|                                          | Power supply part                 | One-touch connector for power supply and FG [Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional> Online connector for power supply: A6CON-PWJ5P |                              |                                                                                  |                                                             |            |
|                                          | I/O part                          | Sensor connector (e-CON) [I/O signals] 4-pin IDC plug is sold separately. * 1                                                                                                                                         |                              |                                                                                  |                                                             |            |
| Applicable DIN rail                      |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                     |                              |                                                                                  |                                                             |            |
| Applicable wire size                     | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                               |                              |                                                                                  |                                                             |            |
|                                          | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                            |                              |                                                                                  |                                                             |            |
|                                          | Connector for I/O                 | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                              |                              |                                                                                  |                                                             |            |
| Accessory                                |                                   | User's manual, Holding fixtures for screw installation                                                                                                                                                                |                              |                                                                                  |                                                             |            |

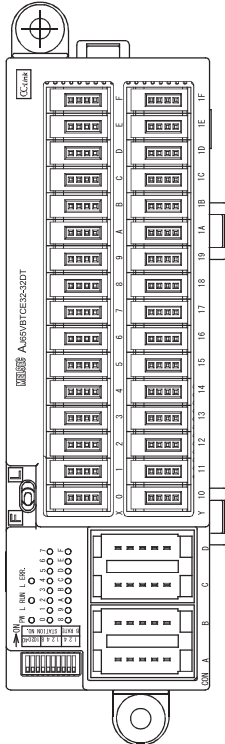


\* 1: Refer to Section 1.6.2 for details.

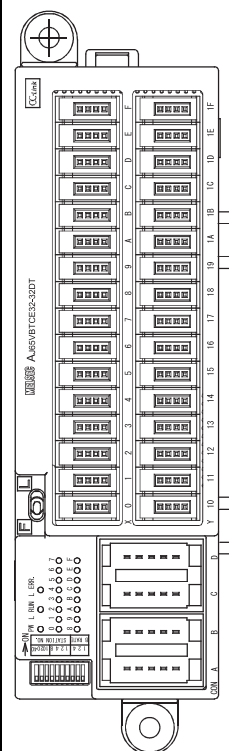




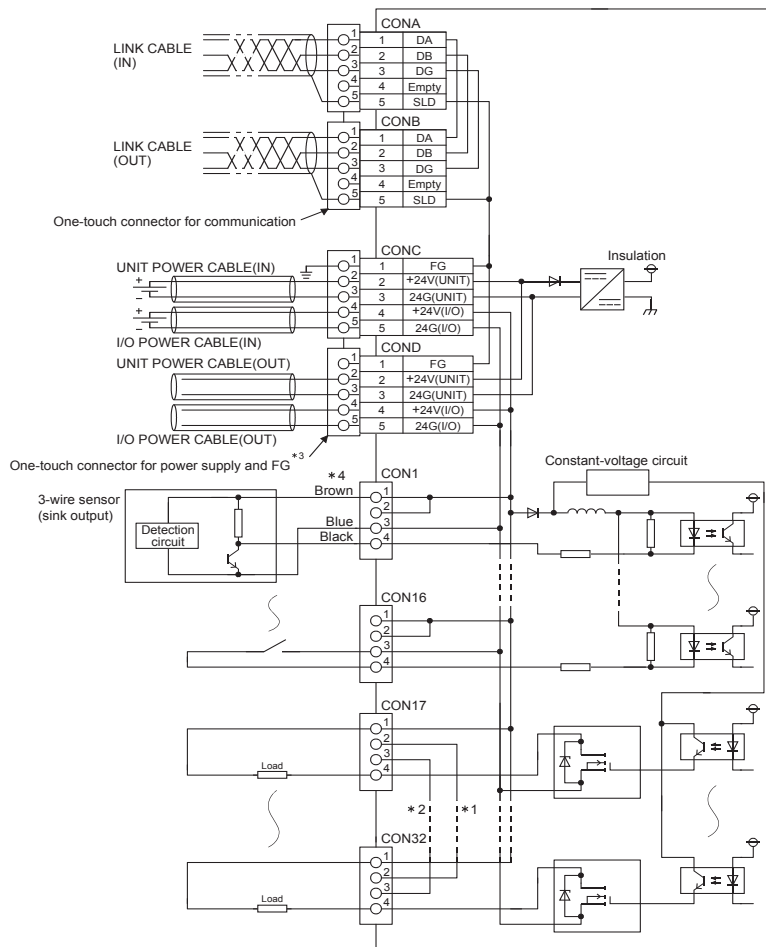
## 6.3.3 AJ65VBTCE32-32DT combined module

| Item                                     |                                                                             | Type                                                                                                                                                                                                                     | DC input transistor output combined module |                                                                  | Appearance                                                                           |                                           |
|------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------|
|                                          |                                                                             | AJ65VBTCE32-32DT                                                                                                                                                                                                         |                                            |                                                                  |                                                                                      |                                           |
|                                          |                                                                             | Input                                                                                                                                                                                                                    | Output                                     |                                                                  |  |                                           |
| Number of input points                   |                                                                             | 16 points                                                                                                                                                                                                                | Number of output points                    | 16 points                                                        |                                                                                      |                                           |
| Isolation method                         |                                                                             | Photocoupler                                                                                                                                                                                                             | Isolation method                           | Photocoupler                                                     |                                                                                      |                                           |
| Rated input voltage                      |                                                                             | 24VDC                                                                                                                                                                                                                    | Rated load voltage                         | 24VDC                                                            |                                                                                      |                                           |
| Rated input current                      |                                                                             | Approx. 5mA                                                                                                                                                                                                              | Operating load voltage range               | 19.2 to 26.4VDC (ripple ratio: within 5%)                        |                                                                                      |                                           |
| Operating voltage range                  |                                                                             | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                | Max. load current                          | 0.1A/point, 1.6A/common                                          |                                                                                      |                                           |
| Max. number of simultaneous input points |                                                                             | 100%                                                                                                                                                                                                                     | Max. inrush current                        | 0.7A, 10ms or less                                               |                                                                                      |                                           |
| ON voltage/ON current                    |                                                                             | 14VDC or higher/3.5mA or higher                                                                                                                                                                                          | Leakage current at OFF                     | 0.1mA or lower                                                   |                                                                                      |                                           |
| OFF voltage/OFF current                  |                                                                             | 6VDC or lower/1.7mA or lower                                                                                                                                                                                             | Max. voltage drop at ON                    | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A         |                                                                                      |                                           |
| Input resistance                         |                                                                             | Approx. 4.7kΩ                                                                                                                                                                                                            |                                            |                                                                  |                                                                                      |                                           |
| Response time                            | OFF→ON                                                                      | 1.5ms or less (at 24VDC)                                                                                                                                                                                                 | Output type                                | Sink type                                                        |                                                                                      |                                           |
|                                          | ON→OFF                                                                      | 1.5ms or less (at 24VDC)                                                                                                                                                                                                 | Protection function                        | Overload protection, overvoltage protection, overheat protection |                                                                                      |                                           |
|                                          |                                                                             |                                                                                                                                                                                                                          | Response time                              | OFF→ON                                                           |                                                                                      | 1ms or less                               |
|                                          |                                                                             |                                                                                                                                                                                                                          |                                            | ON→OFF                                                           |                                                                                      | 1ms or less (resistive load)              |
|                                          |                                                                             |                                                                                                                                                                                                                          | External power supply for output part      | Voltage                                                          |                                                                                      | 19.2 to 26.4VDC (ripple ratio: within 5%) |
| Current                                  | 10mA or lower (at 24VDC and all points ON), excluding external load current |                                                                                                                                                                                                                          |                                            |                                                                  |                                                                                      |                                           |
| Input type                               |                                                                             | Positive common (sink type)                                                                                                                                                                                              | Surge suppressor                           | Zener diode                                                      |                                                                                      |                                           |
| Supply current for connected device      |                                                                             | 1.0A or lower/common                                                                                                                                                                                                     |                                            |                                                                  |                                                                                      |                                           |
| Wiring method for common                 |                                                                             | 32 points/common (input: 3-wire sensor connector (e-CON) type, output: 2-wire sensor connector (e-CON) type)                                                                                                             |                                            |                                                                  |                                                                                      |                                           |
| Number of occupied stations              |                                                                             | 32-point assignment/station (32 points used)                                                                                                                                                                             |                                            |                                                                  |                                                                                      |                                           |
| Module power supply                      | Voltage                                                                     | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                |                                            |                                                                  |                                                                                      |                                           |
|                                          | Current                                                                     | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                               |                                            |                                                                  |                                                                                      |                                           |
| Noise immunity                           |                                                                             | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                   |                                            |                                                                  |                                                                                      |                                           |
| Withstand voltage                        |                                                                             | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                         |                                            |                                                                  |                                                                                      |                                           |
| Insulation resistance                    |                                                                             | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                        |                                            |                                                                  |                                                                                      |                                           |
| Protection degree                        |                                                                             | IP1XB                                                                                                                                                                                                                    |                                            |                                                                  |                                                                                      |                                           |
| Weight                                   |                                                                             | 0.16kg                                                                                                                                                                                                                   |                                            |                                                                  |                                                                                      |                                           |
| External connection system               | Communication part                                                          | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional> Online connector for communication: A6CON-LJ5P                                                |                                            |                                                                  |                                                                                      |                                           |
|                                          | Power supply part                                                           | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional> Online connector for power supply: A6CON-PWJ5P |                                            |                                                                  |                                                                                      |                                           |
|                                          | I/O part                                                                    | Sensor connector (e-CON) [I/O signals]<br>4-pin IDC plug is sold separately. * 1                                                                                                                                         |                                            |                                                                  |                                                                                      |                                           |
| Applicable DIN rail                      |                                                                             | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                        |                                            |                                                                  |                                                                                      |                                           |
| Applicable wire size                     | Connector for communication                                                 | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                  |                                            |                                                                  |                                                                                      |                                           |
|                                          | Connector for power supply and FG                                           | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                               |                                            |                                                                  |                                                                                      |                                           |
|                                          | Connector for I/O                                                           | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                                 |                                            |                                                                  |                                                                                      |                                           |
| Accessory                                |                                                                             | User's manual, Holding fixtures for screw installation                                                                                                                                                                   |                                            |                                                                  |                                                                                      |                                           |

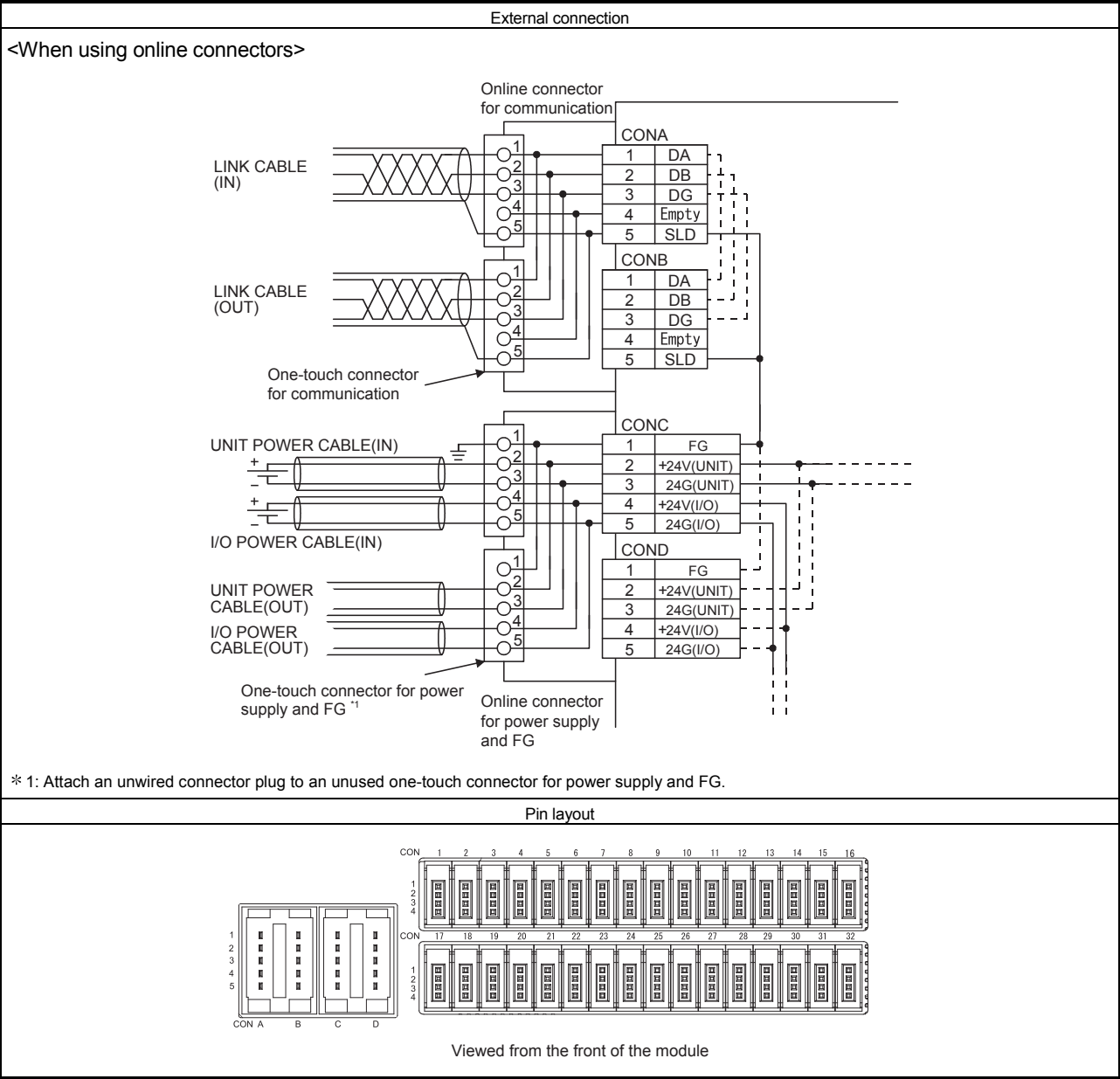
\* 1: Refer to Section 1.6.2 for details.



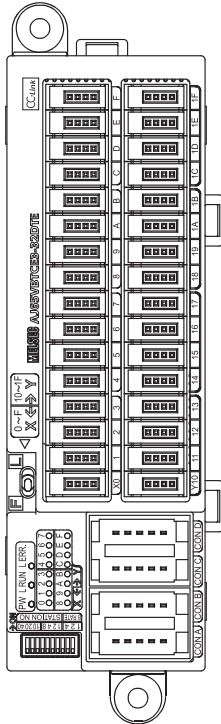
External connection



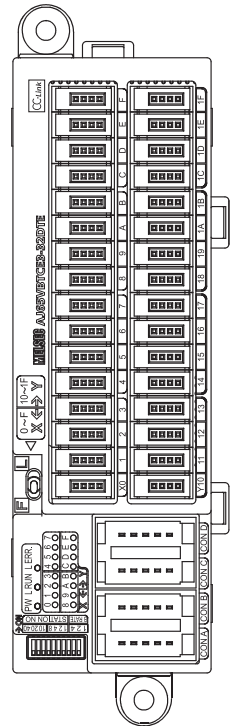
| Pin number | Signal name | Pin number  | Signal name    |
|------------|-------------|-------------|----------------|
| CON A,B    | 1 DA        | CON C,D     | 1 $\perp$ (FG) |
|            | 2 DB        |             | 2 +24V (UNIT)  |
|            | 3 DG        |             | 3 24G (UNIT)   |
|            | 4 Empty     |             | 4 +24V(I/O)    |
|            | 5 SLD       |             | 5 24G(I/O)     |
| Pin number | Signal name | Pin number  | Signal name    |
| CON1 (X0)  | 1 +24V      | CON17 (Y10) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 X0        |             | 4 Y10          |
| CON2 (X1)  | 1 +24V      | CON18 (Y11) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 X1        |             | 4 Y11          |
| CON3 (X2)  | 1 +24V      | CON19 (Y12) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 X2        |             | 4 Y12          |
| CON4 (X3)  | 1 +24V      | CON20 (Y13) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 X3        |             | 4 Y13          |
| CON5 (X4)  | 1 +24V      | CON21 (Y14) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 X4        |             | 4 Y14          |
| CON6 (X5)  | 1 +24V      | CON22 (Y15) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 X5        |             | 4 Y15          |
| CON7 (X6)  | 1 +24V      | CON23 (Y16) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 X6        |             | 4 Y16          |
| CON8 (X7)  | 1 +24V      | CON24 (Y17) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 X7        |             | 4 Y17          |
| CON9 (X8)  | 1 +24V      | CON25 (Y18) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 X8        |             | 4 Y18          |
| CON10 (X9) | 1 +24V      | CON26 (Y19) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 X9        |             | 4 Y19          |
| CON11 (XA) | 1 +24V      | CON27 (Y1A) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 XA        |             | 4 Y1A          |
| CON12 (XB) | 1 +24V      | CON28 (Y1B) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 XB        |             | 4 Y1B          |
| CON13 (XC) | 1 +24V      | CON29 (Y1C) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 XC        |             | 4 Y1C          |
| CON14 (XD) | 1 +24V      | CON30 (Y1D) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 XD        |             | 4 Y1D          |
| CON15 (XE) | 1 +24V      | CON31 (Y1E) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 XE        |             | 4 Y1E          |
| CON16 (XF) | 1 +24V      | CON32 (Y1F) | 1 +24V         |
|            | 2 +V        |             | 2 Empty *1     |
|            | 3 24G       |             | 3 Empty *2     |
|            | 4 XF        |             | 4 Y1F          |



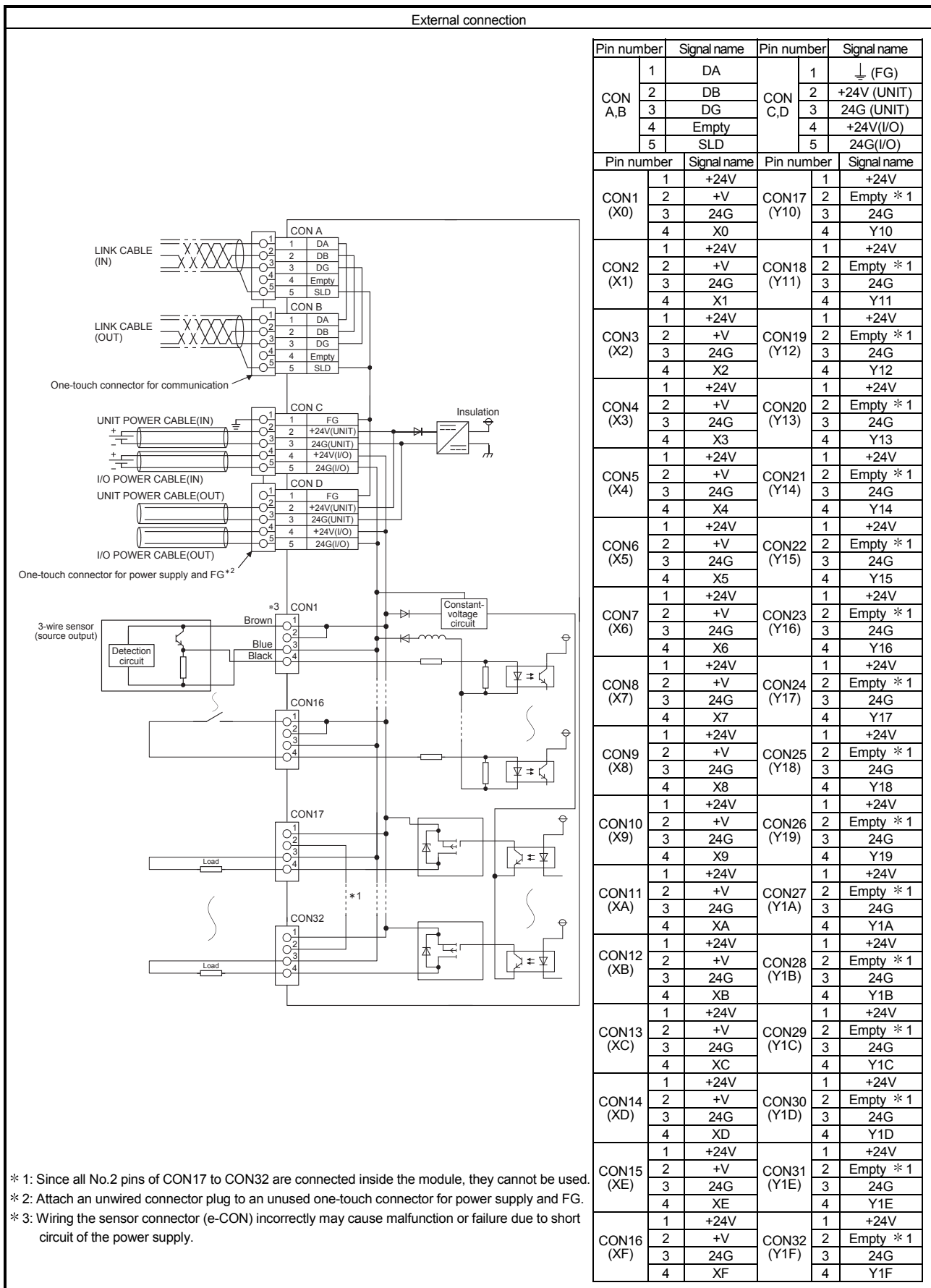
## 6.3.4 AJ65VBTCE3-32DTE combined module

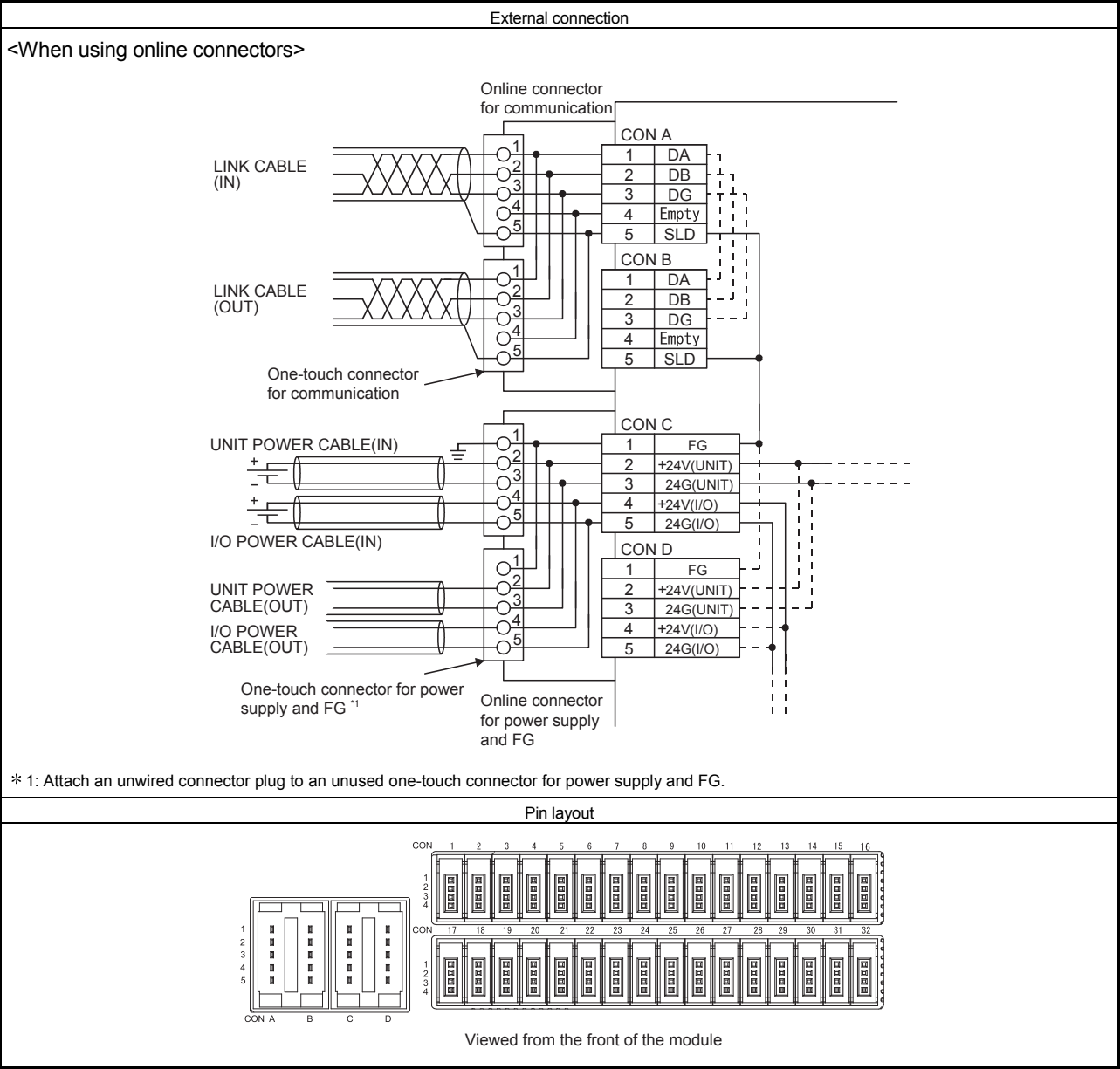
| Type                                     |                                   | DC input transistor output combined module                                                                                                                                                                               |                                       |                                                                                  |                                                                             | Appearance                                                                           |  |
|------------------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|--|
| Item                                     |                                   | AJ65VBTCE3-32DTE                                                                                                                                                                                                         |                                       |                                                                                  |                                                                             |                                                                                      |  |
|                                          |                                   | Input                                                                                                                                                                                                                    |                                       | Output                                                                           |                                                                             |  |  |
| Number of input points                   |                                   | 16 points                                                                                                                                                                                                                |                                       | Number of output points 16 points                                                |                                                                             |                                                                                      |  |
| Isolation method                         |                                   | Photocoupler                                                                                                                                                                                                             |                                       | Isolation method Photocoupler                                                    |                                                                             |                                                                                      |  |
| Rated input voltage                      |                                   | 24VDC                                                                                                                                                                                                                    |                                       | Rated load voltage 24VDC                                                         |                                                                             |                                                                                      |  |
| Rated input current                      |                                   | Approx. 5mA                                                                                                                                                                                                              |                                       | Operating load voltage range 19.2 to 26.4VDC (ripple ratio: within 5%)           |                                                                             |                                                                                      |  |
| Operating voltage range                  |                                   | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                |                                       | Max. load current 0.1A/point, 1.6A/common                                        |                                                                             |                                                                                      |  |
| Max. number of simultaneous input points |                                   | 100%                                                                                                                                                                                                                     |                                       | Max. inrush current 0.7A, 10ms or less                                           |                                                                             |                                                                                      |  |
| ON voltage/ON current                    |                                   | 14VDC or higher/3.5mA or higher                                                                                                                                                                                          |                                       | Leakage current at OFF 0.1mA or lower                                            |                                                                             |                                                                                      |  |
| OFF voltage/OFF current                  |                                   | 6VDC or lower/1.7mA or lower                                                                                                                                                                                             |                                       | Max. voltage drop at ON 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A |                                                                             |                                                                                      |  |
| Input resistance                         |                                   | Approx. 4.7kΩ                                                                                                                                                                                                            |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Response time                            | OFF→ON                            | 1.5ms or less (at 24VDC)                                                                                                                                                                                                 |                                       | Output type Source type                                                          |                                                                             |                                                                                      |  |
|                                          | ON→OFF                            | 1.5ms or less (at 24VDC)                                                                                                                                                                                                 |                                       | Protection function Overload protection, overheat protection                     |                                                                             |                                                                                      |  |
|                                          |                                   | Response time                                                                                                                                                                                                            | OFF→ON                                | 1ms or less                                                                      |                                                                             |                                                                                      |  |
|                                          |                                   |                                                                                                                                                                                                                          | ON→OFF                                | 1ms or less (resistive load)                                                     |                                                                             |                                                                                      |  |
|                                          |                                   |                                                                                                                                                                                                                          | External power supply for output part | Voltage                                                                          | 19.2 to 26.4VDC (ripple ratio: within 5%)                                   |                                                                                      |  |
|                                          |                                   |                                                                                                                                                                                                                          |                                       | Current                                                                          | 11mA or lower (at 24VDC and all points ON), excluding external load current |                                                                                      |  |
| Input type                               |                                   | Negative common (source type)                                                                                                                                                                                            |                                       | Surge suppressor Zener diode                                                     |                                                                             |                                                                                      |  |
| Supply current for connected device      |                                   | 2.0A or lower/common                                                                                                                                                                                                     |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Wiring method for common                 |                                   | 32 points/common (input: 3-wire sensor connector (e-CON) type, output: 3-wire sensor connector (e-CON) type)                                                                                                             |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Number of occupied stations              |                                   | 32-point assignment/station (32 points used)                                                                                                                                                                             |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Module power supply                      | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                |                                       |                                                                                  |                                                                             |                                                                                      |  |
|                                          | Current                           | 45mA or lower (at 24VDC and all points ON)                                                                                                                                                                               |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Noise immunity                           |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                   |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Withstand voltage                        |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                         |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Insulation resistance                    |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                        |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Protection degree                        |                                   | IP1XB                                                                                                                                                                                                                    |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Weight                                   |                                   | 0.16kg                                                                                                                                                                                                                   |                                       |                                                                                  |                                                                             |                                                                                      |  |
| External connection system               | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional> Online connector for communication: A6CON-LJ5P                                                |                                       |                                                                                  |                                                                             |                                                                                      |  |
|                                          | Power supply part                 | One-touch connector for power supply and FG<br>[Module power supply, I/O power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional> Online connector for power supply: A6CON-PWJ5P |                                       |                                                                                  |                                                                             |                                                                                      |  |
|                                          | I/O part                          | Sensor connector (e-CON) [I/O signals]<br>4-pin IDC plug is sold separately. * 1                                                                                                                                         |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Applicable DIN rail                      |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                        |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Applicable wire size                     | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                  |                                       |                                                                                  |                                                                             |                                                                                      |  |
|                                          | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                               |                                       |                                                                                  |                                                                             |                                                                                      |  |
|                                          | Connector for I/O                 | Sensor connector (e-CON).<br>Applicable connector plugs are sold separately. * 1<br>(applicable wire size: 0.08 to 0.5mm <sup>2</sup> , depending on the connector plug)                                                 |                                       |                                                                                  |                                                                             |                                                                                      |  |
| Accessory                                |                                   | User's manual, Holding fixtures for screw installation                                                                                                                                                                   |                                       |                                                                                  |                                                                             |                                                                                      |  |

\* 1: Refer to Section 1.6.2 for details.









## 6.4 One Touch Connector Type Combined Module

## 6.4.1 AJ65SBTC4-16DT combined module

| Item                                     |                                              | Type                                                                                                                                | DC input transistor output combined module                                                                                                                                               |                                                                  | Appearance                                                                  |
|------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------|
|                                          |                                              | AJ65SBTC4-16DT                                                                                                                      |                                                                                                                                                                                          |                                                                  |                                                                             |
| Input                                    |                                              |                                                                                                                                     | Output                                                                                                                                                                                   |                                                                  |                                                                             |
| Number of input points                   |                                              | 8 points                                                                                                                            | Number of output points                                                                                                                                                                  | 8 points                                                         |                                                                             |
| Isolation method                         |                                              | Photocoupler                                                                                                                        | Isolation method                                                                                                                                                                         | Photocoupler                                                     |                                                                             |
| Rated input voltage                      |                                              | 24VDC                                                                                                                               | Rated load voltage                                                                                                                                                                       | 24VDC                                                            |                                                                             |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                         | Operating load voltage range                                                                                                                                                             | 19.2 to 26.4VDC (ripple ratio: within 5%)                        |                                                                             |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                           | Max. load current                                                                                                                                                                        | 0.5A/point, 2.4A/common                                          |                                                                             |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                | Max. inrush current                                                                                                                                                                      | 1.0A 10ms or less                                                |                                                                             |
| ON voltage/ON current                    |                                              | 14VDC or higher/3.5mA or higher                                                                                                     | Leakage current at OFF                                                                                                                                                                   | 0.25mA or lower                                                  |                                                                             |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/1.7mA or lower                                                                                                        | Max. voltage drop at ON                                                                                                                                                                  | 0.3VDC or lower (TYP.) 0.5A, 0.6VDC or lower (MAX.) 0.5A         |                                                                             |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                       | Output type                                                                                                                                                                              | Sink type                                                        |                                                                             |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                            | Protection function                                                                                                                                                                      | Overload protection, overvoltage protection, overheat protection |                                                                             |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                            |                                                                                                                                                                                          |                                                                  |                                                                             |
|                                          |                                              |                                                                                                                                     | Response time                                                                                                                                                                            | OFF→ON 0.5ms or less<br>ON→OFF 1.5ms or less (resistive load)    |                                                                             |
|                                          |                                              |                                                                                                                                     | External power supply for output part                                                                                                                                                    | Voltage                                                          | 19.2 to 26.4VDC (ripple ratio: within 5%)                                   |
|                                          |                                              |                                                                                                                                     |                                                                                                                                                                                          | Current                                                          | 13mA or lower (at 24VDC and all points ON), excluding external load current |
|                                          |                                              |                                                                                                                                     | Input type                                                                                                                                                                               |                                                                  | Positive common (sink type)                                                 |
| Supply current for connected device      |                                              | 1.0A or lower/common                                                                                                                |                                                                                                                                                                                          |                                                                  |                                                                             |
| Wiring method for common                 |                                              | 16 points/common (4-wire, one-touch connector type)                                                                                 |                                                                                                                                                                                          |                                                                  |                                                                             |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                        |                                                                                                                                                                                          |                                                                  |                                                                             |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                           |                                                                                                                                                                                          |                                                                  |                                                                             |
|                                          | Current                                      | 40mA or lower (at 24VDC and all points ON)                                                                                          |                                                                                                                                                                                          |                                                                  |                                                                             |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                              |                                                                                                                                                                                          |                                                                  |                                                                             |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                    |                                                                                                                                                                                          |                                                                  |                                                                             |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                   |                                                                                                                                                                                          |                                                                  |                                                                             |
| Protection degree                        |                                              | IP2X                                                                                                                                |                                                                                                                                                                                          |                                                                  |                                                                             |
| Weight                                   |                                              | 0.15kg                                                                                                                              |                                                                                                                                                                                          |                                                                  |                                                                             |
| External connection system               | Communication part, module power supply part |                                                                                                                                     | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less |                                                                  |                                                                             |
|                                          | I/O power supply part                        |                                                                                                                                     | 2-point direct-mount terminal block [I/O power supply]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                           |                                                                  |                                                                             |
|                                          | I/O part                                     |                                                                                                                                     | Dedicated one-touch connector [I/O signals]<br>4-pin IDC plug is sold separately.                                                                                                        |                                                                  |                                                                             |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations |                                                                                                                                                                                          |                                                                  |                                                                             |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                   |                                                                                                                                                                                          |                                                                  |                                                                             |
| Applicable wire size                     | Communication part, module power supply part | Applicable solderless terminal                                                                                                      | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]                                                               |                                                                  |                                                                             |
|                                          | I/O power supply part                        |                                                                                                                                     | • V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]                                                                           |                                                                  |                                                                             |
|                                          | I/O part                                     |                                                                                                                                     | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG) stranded wire]                                                    |                                                                  |                                                                             |
|                                          | I/O part                                     |                                                                                                                                     | φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5 mm <sup>2</sup> (22 to 20 AWG) stranded wire]                                                    |                                                                  |                                                                             |
| Wire                                     | Material                                     | Copper                                                                                                                              |                                                                                                                                                                                          |                                                                  |                                                                             |
|                                          | Temperature rating                           | 75°C or more                                                                                                                        |                                                                                                                                                                                          |                                                                  |                                                                             |
| Accessory                                |                                              | User's manual                                                                                                                       |                                                                                                                                                                                          |                                                                  |                                                                             |

Diagram illustrating the terminal block connections and pin assignments for the AJ65SBTC4-16DT module. The diagram shows the module's physical layout, including the input terminals (1-8), output terminals (9-16), and power supply terminals (17-24). The module is shown mounted on a DIN rail, with the terminal block labeled "AJ65SBTC4-16DT". The diagram also includes labels for the input voltage (24VDC), output voltage (19.2 to 26.4VDC), and current ratings (0.5A/point, 2.4A/common).

\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

External connection

<Connection example of 4-, 3-, and 2-wire sensors>

The cable colors are selected according to IEC 60947-5-2 (JIS C 8201-5-2).

| Terminal number | Signal name |
|-----------------|-------------|
| TB1             | DA          |
| TB2             | DB          |
| TB3             | DG          |
| TB4             | SLD         |
| TB5             | +24V        |
| TB6             | ⏏ (FG)      |
| TB7             | 24G         |

| Pin number | Signal name |
|------------|-------------|
| CON1       | 1 X0        |
|            | 2 Y8        |
|            | 3 +24V      |
|            | 4 24G       |
| CON2       | 1 X1        |
|            | 2 Y9        |
|            | 3 +24V      |
|            | 4 24G       |
| CON3       | 1 X2        |
|            | 2 YA        |
|            | 3 +24V      |
|            | 4 24G       |
| CON4       | 1 X3        |
|            | 2 YB        |
|            | 3 +24V      |
|            | 4 24G       |
| CON5       | 1 X4        |
|            | 2 YC        |
|            | 3 +24V      |
|            | 4 24G       |
| CON6       | 1 X5        |
|            | 2 YD        |
|            | 3 +24V      |
|            | 4 24G       |
| CON7       | 1 X6        |
|            | 2 YE        |
|            | 3 +24V      |
|            | 4 24G       |
| CON8       | 1 X7        |
|            | 2 YF        |
|            | 3 +24V      |
|            | 4 24G       |

| Terminal number | Signal name |
|-----------------|-------------|
| TB8             | CTL+        |
| TB9             | COM-        |

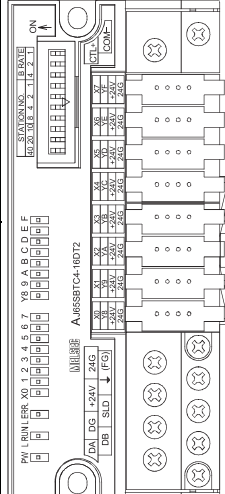
Pin layout

Viewed from the front of the module

<Connection example of other I/O devices>

## 6.4.2 AJ65SBTC4-16DT2 combined module

| Item                                     |                                              | Type                                                                                                                                | DC input transistor output combined module                                                                                                                                                                                                                                     |         |                                                                             |  | Appearance |
|------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------------------------------------------------------------------------|--|------------|
|                                          |                                              | AJ65SBTC4-16DT2                                                                                                                     |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Input                                    |                                              |                                                                                                                                     | Output                                                                                                                                                                                                                                                                         |         |                                                                             |  |            |
| Number of input points                   |                                              | 8 points                                                                                                                            | Number of output points                                                                                                                                                                                                                                                        |         | 8 points                                                                    |  |            |
| Isolation method                         |                                              | Photocoupler                                                                                                                        | Isolation method                                                                                                                                                                                                                                                               |         | Photocoupler                                                                |  |            |
| Rated input voltage                      |                                              | 24VDC                                                                                                                               | Rated load voltage                                                                                                                                                                                                                                                             |         | 24VDC                                                                       |  |            |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                         | Operating load voltage range                                                                                                                                                                                                                                                   |         | 19.2 to 26.4VDC (ripple ratio: within 5%)                                   |  |            |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                           | Max. load current                                                                                                                                                                                                                                                              |         | 0.5A/point, 2.4A/common                                                     |  |            |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                | Max. inrush current                                                                                                                                                                                                                                                            |         | 1.0A, 10ms or less                                                          |  |            |
| ON voltage/ON current                    |                                              | 14VDC or higher/<br>3.5mA or higher                                                                                                 | Leakage current at OFF                                                                                                                                                                                                                                                         |         | 0.1mA or lower                                                              |  |            |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/<br>1.7mA or lower                                                                                                    | Max. voltage drop at ON                                                                                                                                                                                                                                                        |         | 0.3VDC or lower (TYP.) 0.5A,<br>0.6VDC or lower (MAX.) 0.5A                 |  |            |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                       | Output type                                                                                                                                                                                                                                                                    |         | Sink type                                                                   |  |            |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                            | Protection function                                                                                                                                                                                                                                                            |         | None                                                                        |  |            |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                            | Response time                                                                                                                                                                                                                                                                  | OFF→ON  | 0.5ms or less                                                               |  |            |
|                                          |                                              |                                                                                                                                     |                                                                                                                                                                                                                                                                                | ON→OFF  | 1.5ms or less (resistive load)                                              |  |            |
|                                          |                                              |                                                                                                                                     | External power supply for output part                                                                                                                                                                                                                                          | Voltage | 19.2 to 26.4VDC (ripple ratio: within 5%)                                   |  |            |
|                                          |                                              |                                                                                                                                     |                                                                                                                                                                                                                                                                                | Current | 13mA or lower (at 24VDC and all points ON), excluding external load current |  |            |
| Input type                               |                                              | Positive common (sink type)                                                                                                         | Surge suppressor                                                                                                                                                                                                                                                               |         | Zener diode                                                                 |  |            |
| Supply current for connected device      |                                              | 1.0A or lower/common                                                                                                                |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Wiring method for common                 |                                              | 16 points/common (4-wire, one-touch connector type)                                                                                 |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Number of occupied stations              |                                              | 32-point assignment/station (16 points used)                                                                                        |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                           |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
|                                          | Current                                      | 40mA or lower (at 24VDC and all points ON)                                                                                          |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                              |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                    |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                   |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Protection degree                        |                                              | IP2X                                                                                                                                |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Weight                                   |                                              | 0.15kg                                                                                                                              |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| External connection system               | Communication part, module power supply part |                                                                                                                                     | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                       |         |                                                                             |  |            |
|                                          | I/O power supply part                        |                                                                                                                                     | 2-point direct-mount terminal block [I/O power supply]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                 |         |                                                                             |  |            |
|                                          | I/O part                                     |                                                                                                                                     | Dedicated one-touch connector [I/O signals]<br>4-pin IDC plug is sold separately.                                                                                                                                                                                              |         |                                                                             |  |            |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                   |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Applicable wire size                     | Communication part, module power supply part | Applicable solderless terminal                                                                                                      | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]                                   |         |                                                                             |  |            |
|                                          | I/O power supply part                        |                                                                                                                                     |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
|                                          | I/O part                                     |                                                                                                                                     | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG) stranded wire]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5 mm <sup>2</sup> (22 to 20 AWG) stranded wire] |         |                                                                             |  |            |
| Wire                                     | Material                                     | Copper                                                                                                                              |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                        |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |
| Accessory                                |                                              | User's manual                                                                                                                       |                                                                                                                                                                                                                                                                                |         |                                                                             |  |            |



\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

External connection

<Connection example of 4-, 3-, and 2-wire sensors >

4-wire sensor (sink output/sink input)

The cable colors are selected according to IEC 60947-5-2 (JIS C 8201-5-2).

3-wire sensor (sink output)

2-wire sensor (sink output)

Module power supply

Insulation

CON1

CON2

CON8

External power supply for output part

Constant-voltage circuit

< Connection example of other I/O devices >

Module power supply

Insulation

CON1

CON8

Load

External power supply for output

Constant-voltage circuit

| Terminal number | Signal name |
|-----------------|-------------|
| TB1             | DA          |
| TB2             | DB          |
| TB3             | DG          |
| TB4             | SLD         |
| TB5             | +24V        |
| TB6             | ⏏ (FG)      |
| TB7             | 24G         |

| Pin number | Signal name |
|------------|-------------|
| CON1       | 1 X0        |
|            | 2 Y8        |
|            | 3 +24V      |
|            | 4 24G       |
| CON2       | 1 X1        |
|            | 2 Y9        |
|            | 3 +24V      |
|            | 4 24G       |
| CON3       | 1 X2        |
|            | 2 YA        |
|            | 3 +24V      |
|            | 4 24G       |
| CON4       | 1 X3        |
|            | 2 YB        |
|            | 3 +24V      |
|            | 4 24G       |
| CON5       | 1 X4        |
|            | 2 YC        |
|            | 3 +24V      |
|            | 4 24G       |
| CON6       | 1 X5        |
|            | 2 YD        |
|            | 3 +24V      |
|            | 4 24G       |
| CON7       | 1 X6        |
|            | 2 YE        |
|            | 3 +24V      |
|            | 4 24G       |
| CON8       | 1 X7        |
|            | 2 YF        |
|            | 3 +24V      |
|            | 4 24G       |

| Terminal number | Signal name |
|-----------------|-------------|
| TB8             | CTL+        |
| TB9             | COM-        |

Pin layout

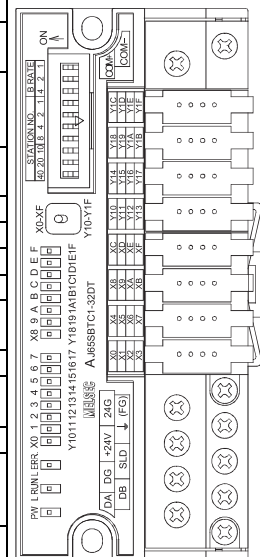
1 2 3 4

CON1 CON2 CON3 CON4 CON5 CON6 CON7 CON8

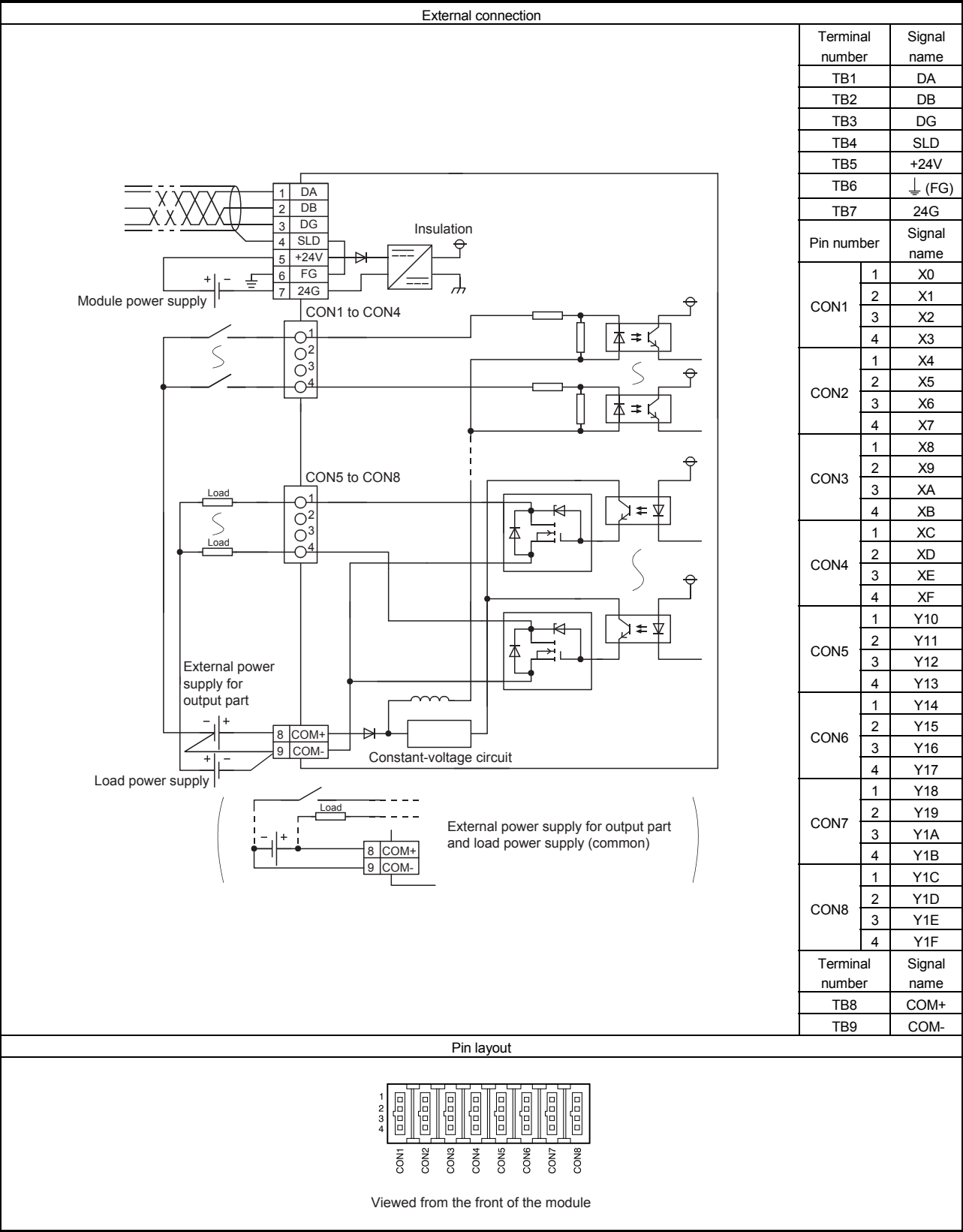
Viewed from the front of the module

## 6.4.3 AJ65SBTC1-32DT combined module

| Item                                     |                                              | Type                                                                                                                                | DC input transistor output combined module                                                                                                                                                                                                                                     |                                |                                                                             |  | Appearance               |
|------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------------------------|--|--------------------------|
|                                          |                                              | AJ65SBTC1-32DT                                                                                                                      |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Input                                    |                                              |                                                                                                                                     | Output                                                                                                                                                                                                                                                                         |                                |                                                                             |  |                          |
| Number of input points                   |                                              | 16 points                                                                                                                           | Number of output points                                                                                                                                                                                                                                                        |                                | 16 points                                                                   |  |                          |
| Isolation method                         |                                              | Photocoupler                                                                                                                        | Isolation method                                                                                                                                                                                                                                                               |                                | Photocoupler                                                                |  |                          |
| Rated input voltage                      |                                              | 24VDC                                                                                                                               | Rated load voltage                                                                                                                                                                                                                                                             |                                | 24VDC                                                                       |  |                          |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                         | Operating load voltage range                                                                                                                                                                                                                                                   |                                | 19.2 to 26.4VDC (ripple ratio: within 5%)                                   |  |                          |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                           | Max. load current                                                                                                                                                                                                                                                              |                                | 0.1A/point, 1.6A/common                                                     |  |                          |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                | Max. inrush current                                                                                                                                                                                                                                                            |                                | 1.0A, 10ms or less                                                          |  |                          |
| ON voltage/ON current                    |                                              | 14VDC or higher/3.5mA or higher                                                                                                     | Leakage current at OFF                                                                                                                                                                                                                                                         |                                | 0.25mA or lower                                                             |  |                          |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/ 1.7mA or lower                                                                                                       | Max. voltage drop at ON                                                                                                                                                                                                                                                        |                                | 0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A                    |  |                          |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                       | Output type                                                                                                                                                                                                                                                                    |                                | Sink type                                                                   |  |                          |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                            | Protection function                                                                                                                                                                                                                                                            |                                | Overload protection, overvoltage protection, overheat protection            |  |                          |
|                                          |                                              | ON→OFF                                                                                                                              |                                                                                                                                                                                                                                                                                |                                |                                                                             |  | 1.5ms or less (at 24VDC) |
|                                          |                                              |                                                                                                                                     | Response time                                                                                                                                                                                                                                                                  | OFF→ON                         | 0.5ms or less                                                               |  |                          |
|                                          |                                              |                                                                                                                                     | ON→OFF                                                                                                                                                                                                                                                                         | 1.5ms or less (resistive load) |                                                                             |  |                          |
|                                          |                                              |                                                                                                                                     | External power supply for output part                                                                                                                                                                                                                                          | Voltage                        | 19.2 to 26.4VDC (ripple ratio: within 5%)                                   |  |                          |
|                                          |                                              |                                                                                                                                     |                                                                                                                                                                                                                                                                                | Current                        | 17mA or lower (at 24VDC and all points ON), excluding external load current |  |                          |
| Input type                               |                                              | Positive common (sink type)                                                                                                         | Surge suppressor                                                                                                                                                                                                                                                               |                                | Zener diode                                                                 |  |                          |
| Wiring method for common                 |                                              | 32 points/common (1-wire, one-touch connector type)                                                                                 |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                        |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                           |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
|                                          | Current                                      | 50mA or lower (at 24VDC and all points ON)                                                                                          |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                              |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                    |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                   |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Weight                                   |                                              | 0.16kg                                                                                                                              |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| External connection system               | Communication part, module power supply part |                                                                                                                                     | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                                       |                                |                                                                             |  |                          |
|                                          |                                              |                                                                                                                                     | 2-point direct-mount terminal block [I/O power supply]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                                                                 |                                |                                                                             |  |                          |
|                                          | I/O power supply part                        |                                                                                                                                     | Dedicated one-touch connector [I/O signals] 4-pin IDC plug is sold separately.                                                                                                                                                                                                 |                                |                                                                             |  |                          |
|                                          | I/O part                                     |                                                                                                                                     |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                   |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Applicable wire size                     | Communication part, module power supply part | Applicable solderless terminal                                                                                                      | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]                                                                                                                                                     |                                |                                                                             |  |                          |
|                                          | I/O power supply part                        |                                                                                                                                     | • V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]                                                                                                                                                                 |                                |                                                                             |  |                          |
|                                          | I/O part                                     |                                                                                                                                     | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG) stranded wire]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5 mm <sup>2</sup> (22 to 20 AWG) stranded wire] |                                |                                                                             |  |                          |
| Wire                                     | Material                                     | Copper                                                                                                                              |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
|                                          | Temperature rating                           | 75°C or more                                                                                                                        |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |
| Accessory                                |                                              | User's manual                                                                                                                       |                                                                                                                                                                                                                                                                                |                                |                                                                             |  |                          |



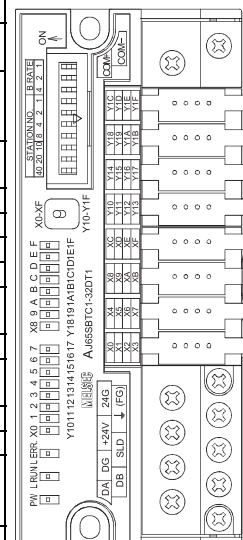
\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

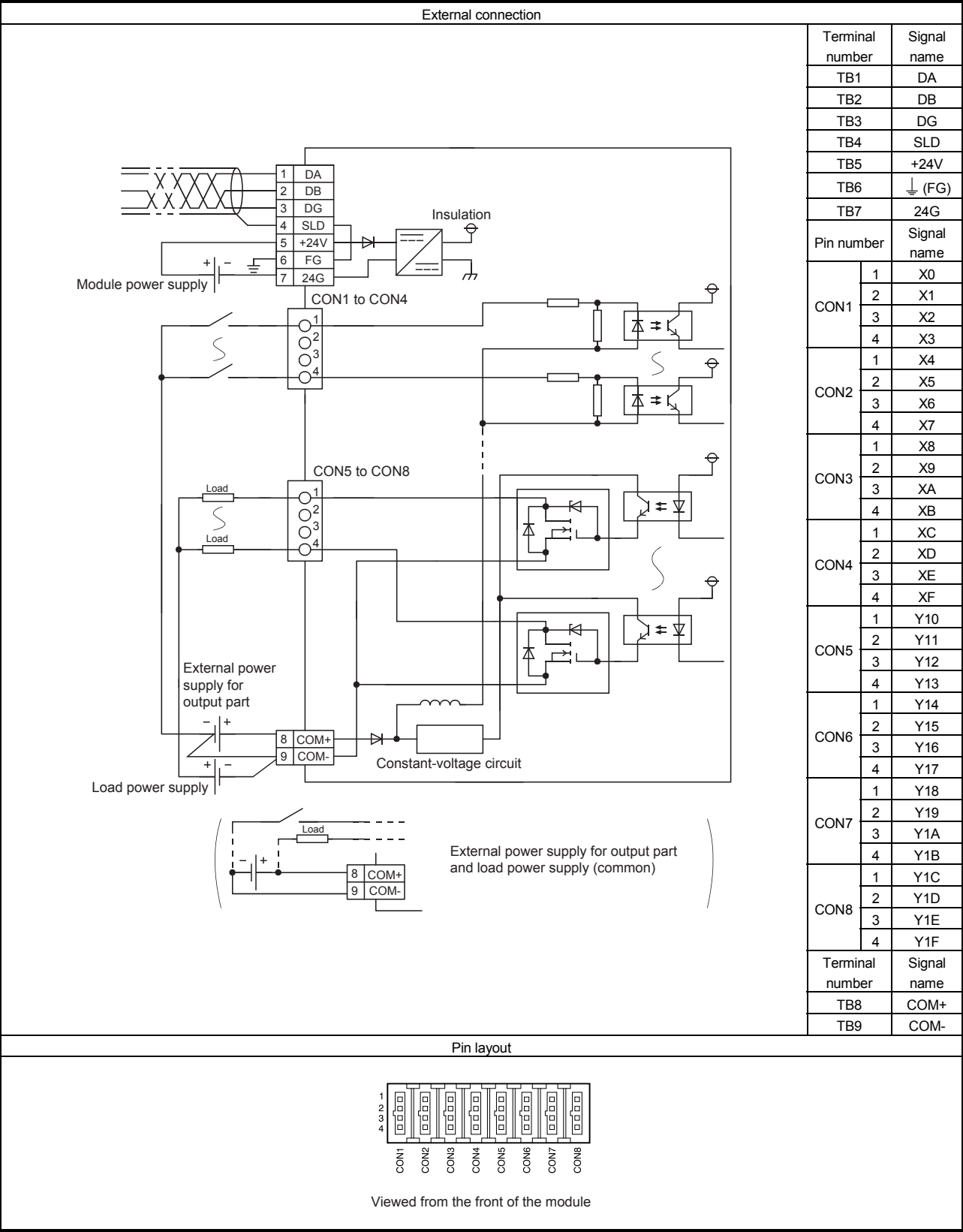




## 6.4.4 AJ65SBTC1-32DT1 combined module

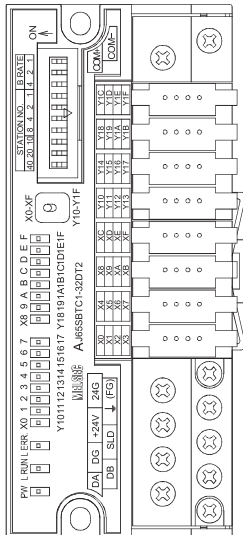
| Item                                     |                                              | Type                                                                                                                                | DC input transistor output combined module                                                                                                                                                                                                                                     |                                                                             | Appearance                                 |
|------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------|
|                                          |                                              | AJ65SBTC1-32DT1                                                                                                                     |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Input                                    |                                              |                                                                                                                                     | Output                                                                                                                                                                                                                                                                         |                                                                             |                                            |
| Number of input points                   |                                              | 16 points                                                                                                                           | Number of output points                                                                                                                                                                                                                                                        | 16 points                                                                   |                                            |
| Isolation method                         |                                              | Photocoupler                                                                                                                        | Isolation method                                                                                                                                                                                                                                                               | Photocoupler                                                                |                                            |
| Rated input voltage                      |                                              | 24VDC                                                                                                                               | Rated load voltage                                                                                                                                                                                                                                                             | 24VDC                                                                       |                                            |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                         | Operating load voltage range                                                                                                                                                                                                                                                   | 19.2 to 26.4VDC (ripple ratio: within 5%)                                   |                                            |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                           | Max. load current                                                                                                                                                                                                                                                              | 0.1A/point, 1.6A/common                                                     |                                            |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                | Max. inrush current                                                                                                                                                                                                                                                            | 1.0A, 10ms or less                                                          |                                            |
| ON voltage/ON current                    |                                              | 15VDC or higher/ 3mA or higher                                                                                                      | Leakage current at OFF                                                                                                                                                                                                                                                         | 0.25mA or lower                                                             |                                            |
| OFF voltage/OFF current                  |                                              | 3VDC or lower/ 0.5mA or lower                                                                                                       | Max. voltage drop at ON                                                                                                                                                                                                                                                        | 0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A                    |                                            |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                       | Output type                                                                                                                                                                                                                                                                    | Sink type                                                                   |                                            |
| Response time                            | OFF→ON                                       | 0.2ms or less (at 24VDC)                                                                                                            | Protection function<br>Overload protection, overvoltage protection, overheat protection                                                                                                                                                                                        |                                                                             |                                            |
|                                          | ON→OFF                                       | 0.2ms or less (at 24VDC)                                                                                                            |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
|                                          |                                              | External power supply for output part                                                                                               | Voltage                                                                                                                                                                                                                                                                        | 19.2 to 26.4VDC (ripple ratio: within 5%)                                   |                                            |
|                                          |                                              |                                                                                                                                     | Current                                                                                                                                                                                                                                                                        | 17mA or lower (at 24VDC and all points ON), excluding external load current |                                            |
| Input type                               |                                              | Positive common (sink type)                                                                                                         | Surge suppressor                                                                                                                                                                                                                                                               | Zener diode                                                                 |                                            |
| Wiring method for common                 |                                              | 32 points/common (1-wire, one-touch connector type)                                                                                 |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                        |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                           |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
|                                          | Current                                      |                                                                                                                                     |                                                                                                                                                                                                                                                                                |                                                                             | 50mA or lower (at 24VDC and all points ON) |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                              |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                    |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                   |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Protection degree                        |                                              | IP2X                                                                                                                                |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Weight                                   |                                              | 0.16kg                                                                                                                              |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| External connection system               | Communication part, module power supply part |                                                                                                                                     | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                                       |                                                                             |                                            |
|                                          |                                              |                                                                                                                                     | 2-point direct-mount terminal block [I/O power supply]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m)<br>Applicable solderless terminal: 2 or less                                                                                                                 |                                                                             |                                            |
|                                          | I/O power supply part                        |                                                                                                                                     | Dedicated one-touch connector [I/O signals] 4-pin IDC plug is sold separately.                                                                                                                                                                                                 |                                                                             |                                            |
|                                          | I/O part                                     |                                                                                                                                     |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m)<br>Mountable with a DIN rail in 6 orientations |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                   |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Applicable wire size                     | Communication part, module power supply part | Applicable solderless terminal                                                                                                      | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]                                                                                                                                                     |                                                                             |                                            |
|                                          | I/O power supply part                        |                                                                                                                                     | • V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]                                                                                                                                                                 |                                                                             |                                            |
|                                          | I/O part                                     |                                                                                                                                     | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG) stranded wire]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5 mm <sup>2</sup> (22 to 20 AWG) stranded wire] |                                                                             |                                            |
|                                          |                                              |                                                                                                                                     |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Wire                                     | Material                                     | Copper                                                                                                                              |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                        |                                                                                                                                                                                                                                                                                |                                                                             |                                            |
| Accessory                                |                                              | User's manual                                                                                                                       |                                                                                                                                                                                                                                                                                |                                                                             |                                            |



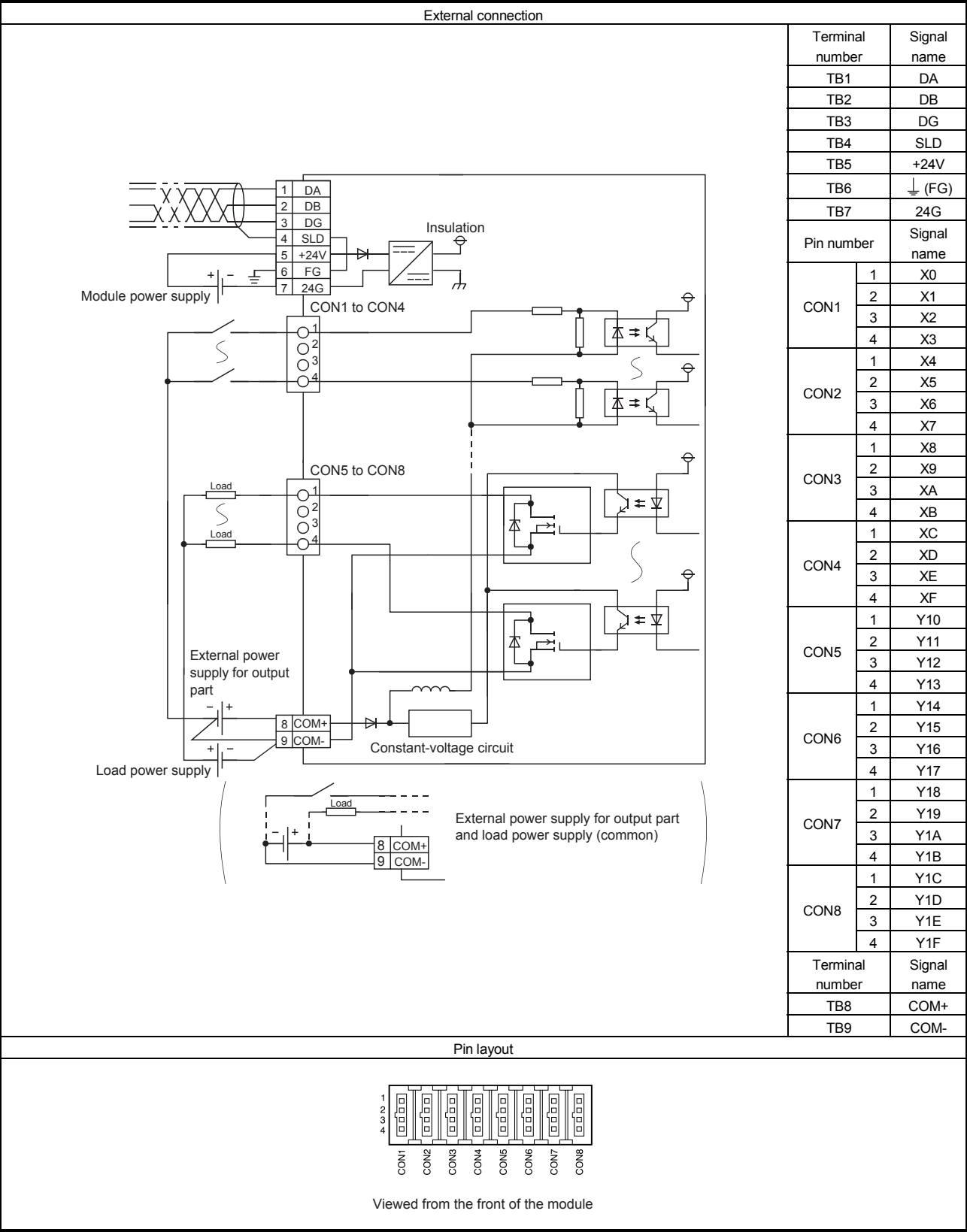


## 6.4.5 AJ65SBTC1-32DT2 combined module

| Item                                     |                                              | Type                                                                                                                                | DC input transistor output combined module                                                                                                                                                                                                                                     |                                                                                                                                          | Appearance |
|------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------|
|                                          |                                              | AJ65SBTC1-32DT2                                                                                                                     |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Input                                    |                                              |                                                                                                                                     | Output                                                                                                                                                                                                                                                                         |                                                                                                                                          |            |
| Number of input points                   |                                              | 16 points                                                                                                                           | Number of output points                                                                                                                                                                                                                                                        | 16 points                                                                                                                                |            |
| Isolation method                         |                                              | Photocoupler                                                                                                                        | Isolation method                                                                                                                                                                                                                                                               | Photocoupler                                                                                                                             |            |
| Rated input voltage                      |                                              | 24VDC                                                                                                                               | Rated load voltage                                                                                                                                                                                                                                                             | 24VDC                                                                                                                                    |            |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                         | Operating load voltage range                                                                                                                                                                                                                                                   | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                |            |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                           | Max. load current                                                                                                                                                                                                                                                              | 0.1A/point, 1.6A/common                                                                                                                  |            |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                                | Max. inrush current                                                                                                                                                                                                                                                            | 1.0A, 10ms or less                                                                                                                       |            |
| ON voltage/ON current                    |                                              | 14VDC or higher/ 3.5mA or higher                                                                                                    | Leakage current at OFF                                                                                                                                                                                                                                                         | 0.1mA or lower                                                                                                                           |            |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/ 1.7mA or lower                                                                                                       | Max. voltage drop at ON                                                                                                                                                                                                                                                        | 0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A                                                                                 |            |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                       | Output type                                                                                                                                                                                                                                                                    | Sink type                                                                                                                                |            |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                            | Protection function                                                                                                                                                                                                                                                            | None                                                                                                                                     |            |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                            | Response time                                                                                                                                                                                                                                                                  | OFF→ON 0.5ms or less<br>ON→OFF 1.5ms or less (resistive load)                                                                            |            |
|                                          |                                              |                                                                                                                                     | External power supply for output part                                                                                                                                                                                                                                          | Voltage 19.2 to 26.4VDC (ripple ratio: within 5%)<br>Current 17mA or lower (at 24VDC and all points ON), excluding external load current |            |
| Input type                               |                                              | Positive common (sink type)                                                                                                         | Surge suppressor                                                                                                                                                                                                                                                               | Zener diode                                                                                                                              |            |
| Wiring method for common                 |                                              | 32 points/common (1-wire, one-touch connector type)                                                                                 |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                        |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                           |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
|                                          | Current                                      | 50mA or lower (at 24VDC and all points ON)                                                                                          |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                              |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                    |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                   |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Protection degree                        |                                              | IP2X                                                                                                                                |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Weight                                   |                                              | 0.16kg                                                                                                                              |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| External connection system               | Communication part, module power supply part |                                                                                                                                     | 7-point two-piece terminal block                                                                                                                                                                                                                                               |                                                                                                                                          |            |
|                                          |                                              |                                                                                                                                     | [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                        |                                                                                                                                          |            |
|                                          | I/O power supply part                        |                                                                                                                                     | 2-point direct-mount terminal block                                                                                                                                                                                                                                            |                                                                                                                                          |            |
|                                          |                                              |                                                                                                                                     | [I/O power supply]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m)<br>Applicable solderless terminal: 2 or less                                                                                                                                                     |                                                                                                                                          |            |
| I/O part                                 |                                              | Dedicated one-touch connector [I/O signals] 4-pin IDC plug is sold separately.                                                      |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m)<br>Mountable with a DIN rail in 6 orientations |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                   |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Applicable wire size                     | Communication part, module power supply part | Applicable solderless terminal                                                                                                      | • RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]                                                                                                                                                     |                                                                                                                                          |            |
|                                          | I/O power supply part                        |                                                                                                                                     | • V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]                                                                                                                                                                 |                                                                                                                                          |            |
|                                          | I/O part                                     |                                                                                                                                     | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220)<br>[Applicable wire size: 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG) stranded wire]<br>φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520)<br>[Applicable wire size: 0.3 to 0.5 mm <sup>2</sup> (22 to 20 AWG) stranded wire] |                                                                                                                                          |            |
| Wire                                     | Material                                     | Copper                                                                                                                              |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                        |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |
| Accessory                                |                                              | User's manual                                                                                                                       |                                                                                                                                                                                                                                                                                |                                                                                                                                          |            |

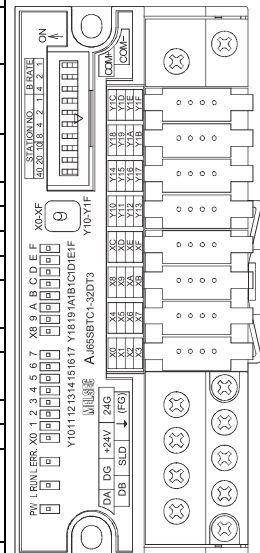


\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

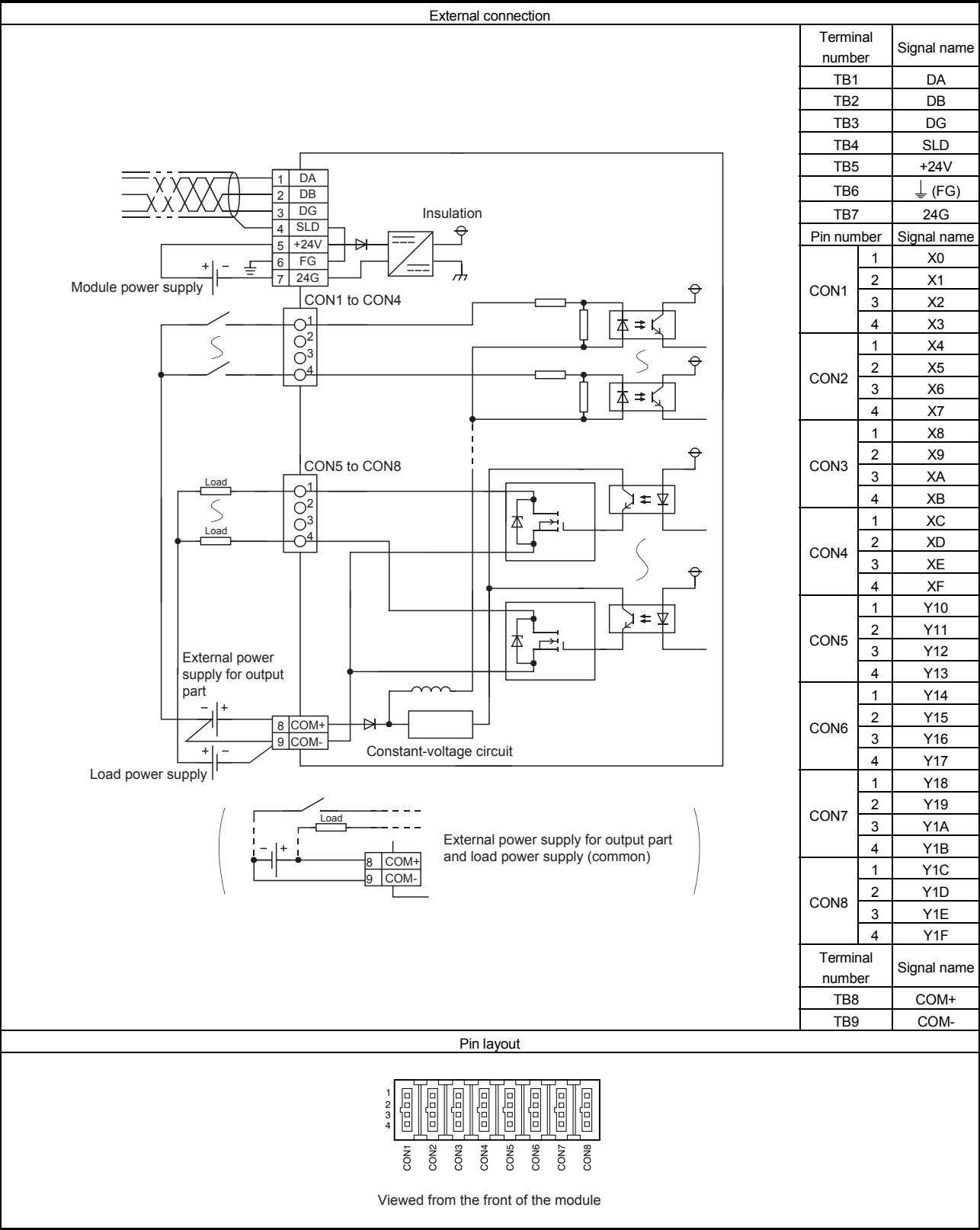


## 6.4.6 AJ65SBTC1-32DT3 combined module

| Item                                     |                                              | Type                           | DC input transistor output combined module                                                                                                                                         |                              |                                                                             | Appearance                                               |
|------------------------------------------|----------------------------------------------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------|
|                                          |                                              | AJ65SBTC1-32DT3                |                                                                                                                                                                                    |                              |                                                                             |                                                          |
| Input                                    |                                              |                                | Output                                                                                                                                                                             |                              |                                                                             |                                                          |
| Number of input points                   |                                              |                                | 16 points                                                                                                                                                                          | Number of output points      |                                                                             | 16 points                                                |
| Isolation method                         |                                              |                                | Photocoupler                                                                                                                                                                       | Isolation method             |                                                                             | Photocoupler                                             |
| Rated input voltage                      |                                              |                                | 24VDC                                                                                                                                                                              | Rated load voltage           |                                                                             | 24VDC                                                    |
| Rated input current                      |                                              |                                | Approx. 5mA                                                                                                                                                                        | Operating load voltage range |                                                                             | 19.2 to 26.4VDC (ripple ratio: within 5%)                |
| Operating voltage range                  |                                              |                                | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                          | Max. load current            |                                                                             | 0.1A/point, 1.6A/common                                  |
| Max. number of simultaneous input points |                                              |                                | 100%                                                                                                                                                                               | Max. inrush current          |                                                                             | 1.0A, 10ms or less                                       |
| ON voltage/ON current                    |                                              |                                | 15VDC or higher/ 3mA or higher                                                                                                                                                     | Leakage current at OFF       |                                                                             | 0.1mA or lower                                           |
| OFF voltage/OFF current                  |                                              |                                | 3VDC or lower/ 0.5mA or lower                                                                                                                                                      | Max. voltage drop at ON      |                                                                             | 0.3VDC or lower (TYP.) 0.1A, 0.6VDC or lower (MAX.) 0.1A |
| Input resistance                         |                                              |                                | Approx. 4.7kΩ                                                                                                                                                                      | Output type                  |                                                                             | Sink type                                                |
| Response time                            |                                              | OFF→ON                         | 0.2ms or less (at 24VDC)                                                                                                                                                           | Protection function          |                                                                             | None                                                     |
|                                          |                                              | ON→OFF                         | 0.2ms or less (at 24VDC)                                                                                                                                                           |                              |                                                                             |                                                          |
|                                          |                                              |                                |                                                                                                                                                                                    |                              | Response time                                                               | OFF→ON                                                   |
|                                          |                                              |                                | External power supply for output part                                                                                                                                              | ON→OFF                       | 1.5ms or less (resistive load)                                              |                                                          |
|                                          |                                              |                                |                                                                                                                                                                                    | Voltage                      | 19.2 to 26.4VDC (ripple ratio: within 5%)                                   |                                                          |
|                                          |                                              |                                |                                                                                                                                                                                    | Current                      | 17mA or lower (at 24VDC and all points ON), excluding external load current |                                                          |
| Input type                               |                                              | Positive common (sink type)    | Surge suppressor                                                                                                                                                                   |                              | Zener diode                                                                 |                                                          |
| Wiring method for common                 |                                              |                                | 32 points/common (1-wire, one-touch connector type)                                                                                                                                |                              |                                                                             |                                                          |
| Number of occupied stations              |                                              |                                | 32-point assignment/station (32 points used)                                                                                                                                       |                              |                                                                             |                                                          |
| Module power supply                      |                                              | Voltage                        | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                          |                              |                                                                             |                                                          |
|                                          |                                              | Current                        | 50mA or lower (at 24VDC and all points ON)                                                                                                                                         |                              |                                                                             |                                                          |
| Noise immunity                           |                                              |                                | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                             |                              |                                                                             |                                                          |
| Withstand voltage                        |                                              |                                | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                   |                              |                                                                             |                                                          |
| Insulation resistance                    |                                              |                                | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                  |                              |                                                                             |                                                          |
| Protection degree                        |                                              |                                | IP2X                                                                                                                                                                               |                              |                                                                             |                                                          |
| Weight                                   |                                              |                                | 0.16kg                                                                                                                                                                             |                              |                                                                             |                                                          |
| External connection system               | Communication part, module power supply part |                                | 7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less |                              |                                                                             |                                                          |
|                                          |                                              |                                | 2-point direct-mount terminal block [I/O power supply] M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m) Applicable solderless terminal: 2 or less                           |                              |                                                                             |                                                          |
|                                          | I/O power supply part                        |                                |                                                                                                                                                                                    |                              |                                                                             |                                                          |
|                                          | I/O part                                     |                                | Dedicated one-touch connector [I/O signals] 4-pin IDC plug is sold separately.                                                                                                     |                              |                                                                             |                                                          |
| Module mounting screw                    |                                              |                                | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N•m) Mountable with a DIN rail in 6 orientations                                                   |                              |                                                                             |                                                          |
| Applicable DIN rail                      |                                              |                                | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                  |                              |                                                                             |                                                          |
| Applicable wire size                     | Communication part, module power supply part | Applicable solderless terminal | • RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]                                                            |                              |                                                                             |                                                          |
|                                          | I/O power supply part                        |                                | • V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]                                                                        |                              |                                                                             |                                                          |
|                                          | I/O part                                     |                                | φ1.0 to 1.4 (A6CON-P214), φ1.4 to 2.0 (A6CON-P220) [Applicable wire size: 0.14 to 0.2mm <sup>2</sup> (26 to 24 AWG) stranded wire]                                                 |                              |                                                                             |                                                          |
|                                          |                                              |                                | φ1.0 to 1.4 (A6CON-P514), φ1.4 to 2.0 (A6CON-P520) [Applicable wire size: 0.3 to 0.5 mm <sup>2</sup> (22 to 20 AWG) stranded wire]                                                 |                              |                                                                             |                                                          |
| Wire                                     | Material                                     | Copper                         |                                                                                                                                                                                    |                              |                                                                             |                                                          |
|                                          | Temperature rating                           | 75°C or more                   |                                                                                                                                                                                    |                              |                                                                             |                                                          |
| Accessory                                |                                              |                                | User's manual                                                                                                                                                                      |                              |                                                                             |                                                          |



\* For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.



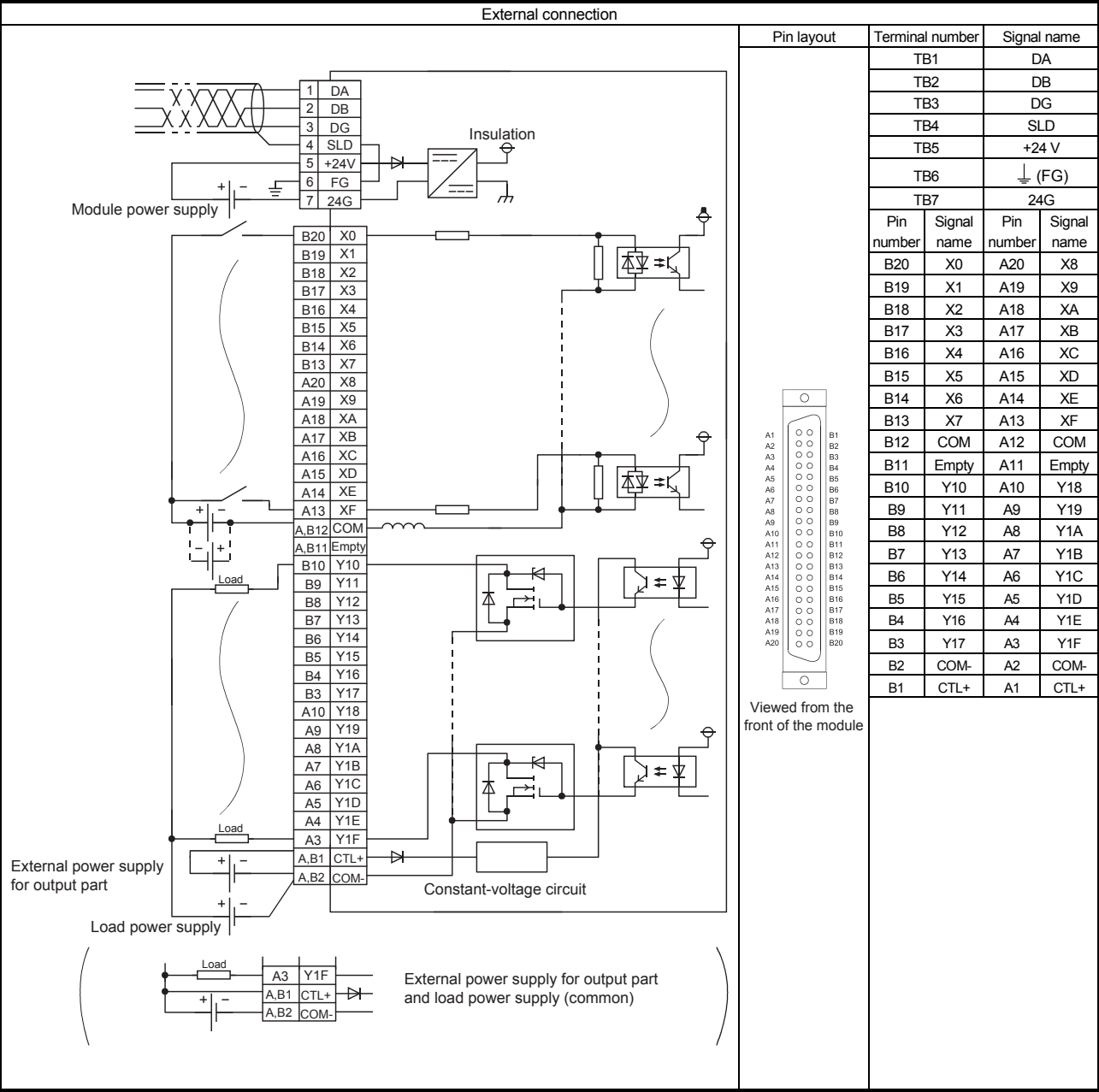
## 6.5 FCN Connector Type Combined Module

## 6.5.1 AJ65SBTCF1-32DT combined module

| Item                                     |                                              | Type                                                                                                                             | DC input transistor output combined module                                                                                                                                                                                                               |                                               |                                                                             |  | Appearance |
|------------------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------|--|------------|
|                                          |                                              | AJ65SBTCF1-32DT                                                                                                                  |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| Input                                    |                                              |                                                                                                                                  | Output                                                                                                                                                                                                                                                   |                                               |                                                                             |  |            |
| Number of input points                   |                                              | 16 points                                                                                                                        | Number of output points                                                                                                                                                                                                                                  |                                               | 16 points                                                                   |  |            |
| Isolation method                         |                                              | Photocoupler                                                                                                                     | Isolation method                                                                                                                                                                                                                                         |                                               | Photocoupler                                                                |  |            |
| Rated input voltage                      |                                              | 24VDC                                                                                                                            | Rated load voltage                                                                                                                                                                                                                                       |                                               | 12/24VDC                                                                    |  |            |
| Rated input current                      |                                              | Approx. 5mA                                                                                                                      | Operating load voltage range                                                                                                                                                                                                                             |                                               | 10.2 to 26.4VDC (ripple ratio: within 5%)                                   |  |            |
| Operating voltage range                  |                                              | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                        | Max. load current                                                                                                                                                                                                                                        |                                               | 0.1A/point (at all points ON: 0.1A/point), 1.6A/common                      |  |            |
| Max. number of simultaneous input points |                                              | 100%                                                                                                                             | Max. inrush current                                                                                                                                                                                                                                      |                                               | 1.0A, 10ms or less                                                          |  |            |
| ON voltage/ON current                    |                                              | 14VDC or higher/ 3.5mA or higher                                                                                                 | Leakage current at OFF                                                                                                                                                                                                                                   |                                               | 0.1mA or lower                                                              |  |            |
| OFF voltage/OFF current                  |                                              | 6VDC or lower/ 1.7mA or lower                                                                                                    | Max. voltage drop at ON                                                                                                                                                                                                                                  |                                               | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A                    |  |            |
| Input resistance                         |                                              | Approx. 4.7kΩ                                                                                                                    | Output type                                                                                                                                                                                                                                              |                                               | Sink type                                                                   |  |            |
|                                          |                                              |                                                                                                                                  | Protection function                                                                                                                                                                                                                                      |                                               | Overload protection, overvoltage protection, overheat protection            |  |            |
| Response time                            | OFF→ON                                       | 1.5ms or less (at 24VDC)                                                                                                         | Response time                                                                                                                                                                                                                                            | OFF→ON                                        | 0.5ms or less                                                               |  |            |
|                                          | ON→OFF                                       | 1.5ms or less (at 24VDC)                                                                                                         |                                                                                                                                                                                                                                                          | ON→OFF                                        | 1.5ms or less (resistive load)                                              |  |            |
| Wiring method for common                 |                                              | 16 points/common (1-wire, FCN connector type)                                                                                    | External power supply for output part                                                                                                                                                                                                                    | Voltage                                       | 10.2 to 26.4VDC (ripple ratio: within 5%)                                   |  |            |
|                                          |                                              |                                                                                                                                  |                                                                                                                                                                                                                                                          | Current                                       | 30mA or lower (at 24VDC and all points ON), excluding external load current |  |            |
| Input type                               |                                              | Positive/negative common shared type (sink/source shared type)                                                                   | Wiring method for common                                                                                                                                                                                                                                 | 16 points/common (1-wire, FCN connector type) |                                                                             |  |            |
|                                          |                                              |                                                                                                                                  | Surge suppressor                                                                                                                                                                                                                                         | Zener diode                                   |                                                                             |  |            |
| Number of occupied stations              |                                              | 32-point assignment/station (32 points used)                                                                                     |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| Module power supply                      | Voltage                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                        |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
|                                          | Current                                      | 50mA or lower (at 24VDC and all points ON)                                                                                       |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| Noise immunity                           |                                              | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                           |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| Withstand voltage                        |                                              | 500VAC for 1 minute between all DC external terminals and ground                                                                 |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| Insulation resistance                    |                                              | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| Protection degree                        |                                              | IP2X                                                                                                                             |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| Weight                                   |                                              | 0.15kg                                                                                                                           |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| External connection system               | Communication part, module power supply part |                                                                                                                                  | 7-point two-piece terminal block [Transmission circuit, module power supply, FG] M3×5.2 screw (tightening torque range: 0.59 to 0.88N·m) Applicable solderless terminal: 2 or less                                                                       |                                               |                                                                             |  |            |
|                                          | I/O power supply part, I/O part              |                                                                                                                                  | 40-pin connector [I/O power supply, I/O signal] (A6CON1, A6CON2, A6CON3, A6CON4)                                                                                                                                                                         |                                               |                                                                             |  |            |
| Module mounting screw                    |                                              | M4 screw with plain washer finished round (tightening torque range: 0.78 to 1.08N·m) Mountable with a DIN rail in 6 orientations |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| Applicable DIN rail                      |                                              | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| Applicable wire size                     | Communication part, module power supply part | Applicable solderless terminal <sup>*1</sup>                                                                                     | • RAV1.25-3 (compliant with JIS C 2805) [Applicable wire size: 0.3 to 1.25mm <sup>2</sup> (22 to 16 AWG) stranded wire]<br>• V2-MS3, RAP2-3SL, TGV2-3N [Applicable wire size: 1.25 to 2.0mm <sup>2</sup> (16 to 14 AWG) stranded wire]                   |                                               |                                                                             |  |            |
|                                          | I/O power supply part, I/O part              |                                                                                                                                  | • 0.08 to 0.3mm <sup>2</sup> (28 to 22 AWG) stranded wire (A6CON1 and A6CON4) <sup>*2</sup><br>• 0.08 to 0.2mm <sup>2</sup> (28 to 24 AWG) stranded wire (A6CON2)<br>• 0.08mm <sup>2</sup> (28 AWG) stranded wire, φ0.25mm (30 AWG) single wire (A6CON3) |                                               |                                                                             |  |            |
| Wire                                     | Material                                     | Copper                                                                                                                           |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
|                                          | Temperature rating                           | 75°C or more                                                                                                                     |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |
| Accessory                                |                                              | User's manual                                                                                                                    |                                                                                                                                                                                                                                                          |                                               |                                                                             |  |            |

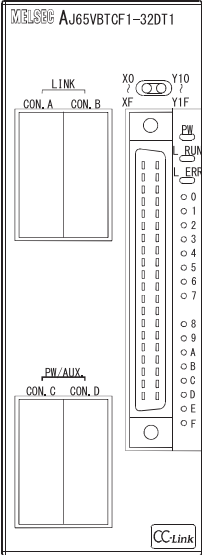
\*1 For applicable solderless terminals connected to the terminal block, refer to the table above. Use applicable wires for the solderless terminals and fix them with an appropriate tightening torque. Use UL listed solderless terminals and, for crimping, use a tool recommended by their manufacturer.

\*2 Use cables with outside diameter of 1.3mm or shorter to connect 40 cables to the connector. In addition, consider the amount of current to be used and select appropriate cables.

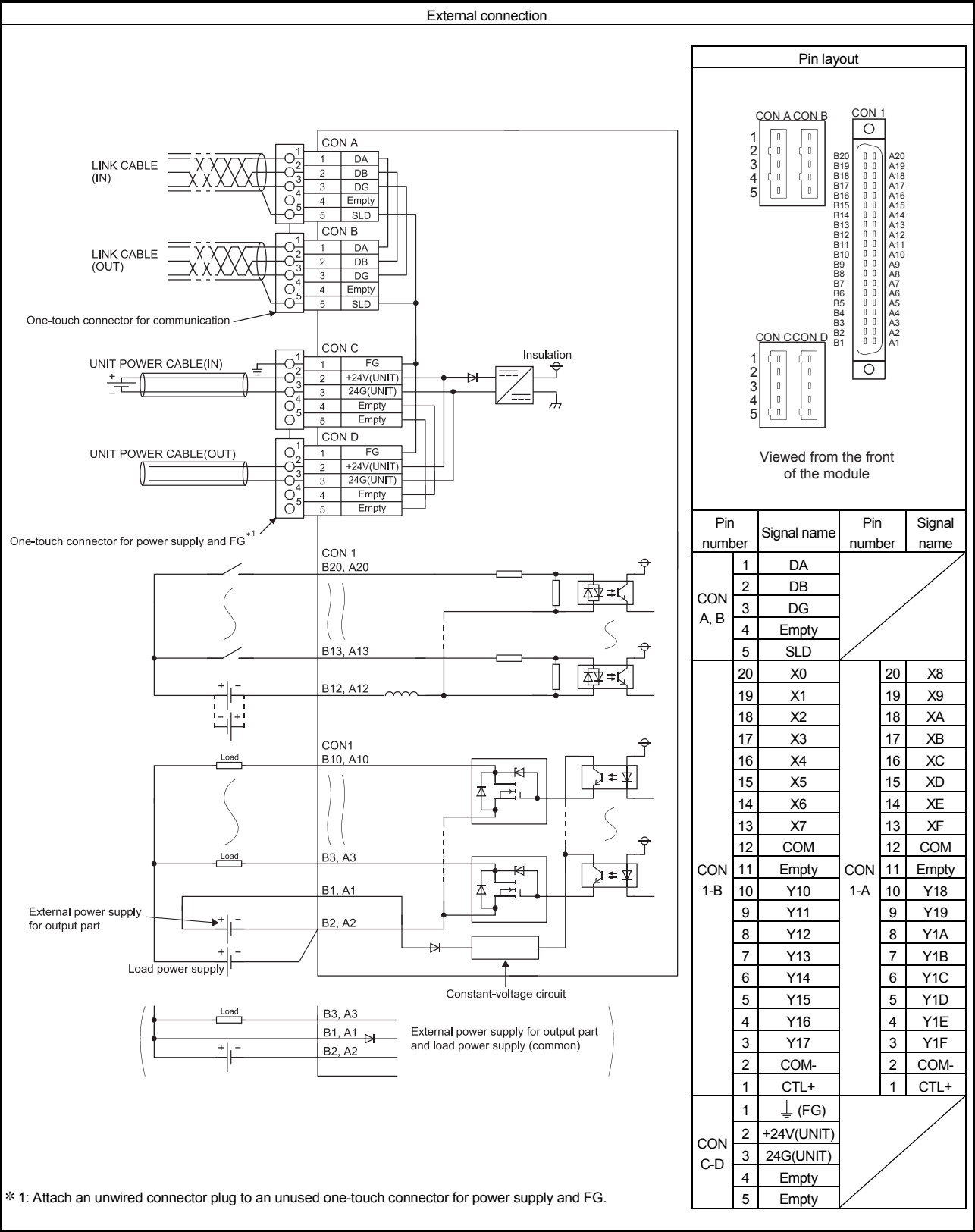


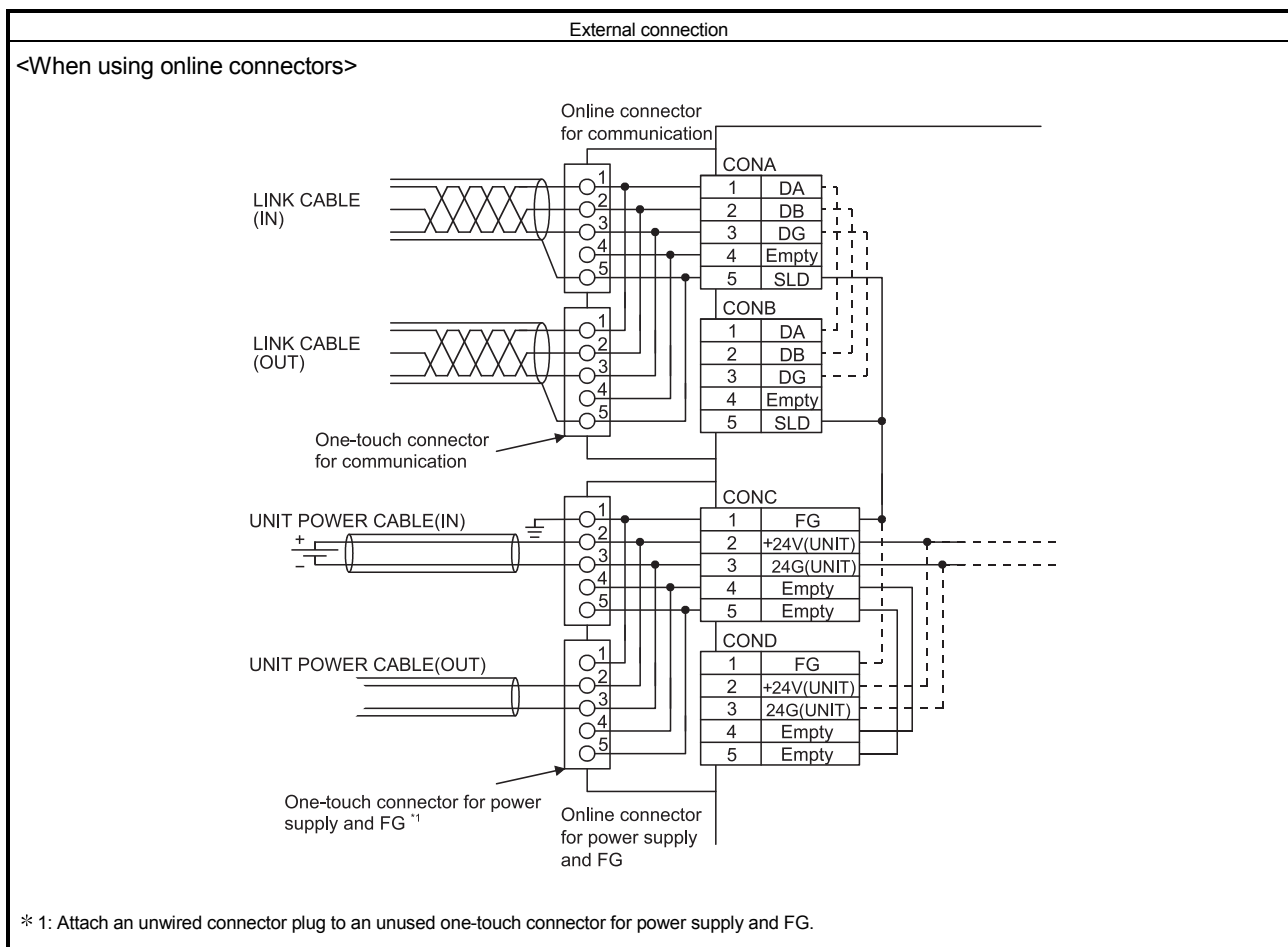


## 6.5.2 AJ65VBTCF1-32DT1 combined module

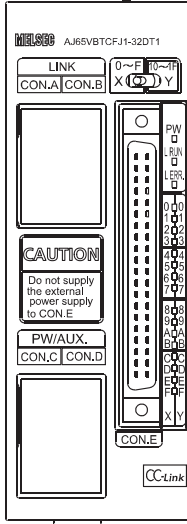
| Item                                     |                                   | Type                                                                                                                                                                                                                                               | DC input transistor output combined module |                                                                  | Appearance                                                                           |                                                                             |
|------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
|                                          |                                   | AJ65VBTCF1-32DT1                                                                                                                                                                                                                                   |                                            |                                                                  |                                                                                      |                                                                             |
| Input                                    |                                   |                                                                                                                                                                                                                                                    | Output                                     |                                                                  |  |                                                                             |
| Number of input points                   |                                   | 16 points                                                                                                                                                                                                                                          | Number of output points                    | 16 points                                                        |                                                                                      |                                                                             |
| Isolation method                         |                                   | Photocoupler                                                                                                                                                                                                                                       | Isolation method                           | Photocoupler                                                     |                                                                                      |                                                                             |
| Rated input voltage                      |                                   | 24VDC                                                                                                                                                                                                                                              | Rated load voltage                         | 12/24VDC                                                         |                                                                                      |                                                                             |
| Rated input current                      |                                   | Approx. 5mA                                                                                                                                                                                                                                        | Operating load voltage range               | 10.2 to 26.4VDC (ripple ratio: within 5%)                        |                                                                                      |                                                                             |
| Operating voltage range                  |                                   | 19.2 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                          | Max. load current                          | 0.1A/point, 1.6A/common                                          |                                                                                      |                                                                             |
| Max. number of simultaneous input points |                                   | 100% or 60% (Refer to Section 1.3.)                                                                                                                                                                                                                | Max. inrush current                        | 0.7A, 10ms or less                                               |                                                                                      |                                                                             |
| ON voltage/ON current                    |                                   | 15VDC or higher/3mA or higher                                                                                                                                                                                                                      | Leakage current at OFF                     | 0.1mA or lower                                                   |                                                                                      |                                                                             |
| OFF voltage/OFF current                  |                                   | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                                       | Max. voltage drop at ON                    | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A         |                                                                                      |                                                                             |
| Input resistance                         |                                   | Approx. 4.7kΩ                                                                                                                                                                                                                                      |                                            |                                                                  |                                                                                      |                                                                             |
| Response time                            | OFF→ON                            | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                           | Output type                                | Sink type                                                        |                                                                                      |                                                                             |
|                                          | ON→OFF                            | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                           | Protection function                        | Overload protection, overvoltage protection, overheat protection |                                                                                      |                                                                             |
| Wiring method for common                 |                                   | 16 points/common (1-wire, FCN connector type)                                                                                                                                                                                                      | Response time                              | OFF→ON                                                           |                                                                                      | 1ms or less                                                                 |
|                                          |                                   |                                                                                                                                                                                                                                                    |                                            | ON→OFF                                                           |                                                                                      | 1ms or less (rated load, resistive load)                                    |
|                                          |                                   |                                                                                                                                                                                                                                                    | External power supply for output part      | Voltage                                                          |                                                                                      | 10.2 to 26.4VDC (ripple ratio: within 5%)                                   |
|                                          |                                   |                                                                                                                                                                                                                                                    |                                            | Current                                                          |                                                                                      | 10mA or lower (at 24VDC and all points ON), excluding external load current |
| Input type                               |                                   | Positive/negative common shared type (sink/source shared type)                                                                                                                                                                                     | Wiring method for common                   | 16 points/common (1-wire, FCN connector type)                    |                                                                                      |                                                                             |
|                                          |                                   |                                                                                                                                                                                                                                                    | Surge suppressor                           | Zener diode                                                      |                                                                                      |                                                                             |
| Number of occupied stations              |                                   | 32-point assignment/station (32 points used)                                                                                                                                                                                                       |                                            |                                                                  |                                                                                      |                                                                             |
| Module power supply                      | Voltage                           | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                          |                                            |                                                                  |                                                                                      |                                                                             |
|                                          | Current                           | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                         |                                            |                                                                  |                                                                                      |                                                                             |
| Noise immunity                           |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                             |                                            |                                                                  |                                                                                      |                                                                             |
| Withstand voltage                        |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                   |                                            |                                                                  |                                                                                      |                                                                             |
| Insulation resistance                    |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                  |                                            |                                                                  |                                                                                      |                                                                             |
| Protection degree                        |                                   | IP1XB                                                                                                                                                                                                                                              |                                            |                                                                  |                                                                                      |                                                                             |
| Weight                                   |                                   | 0.16kg                                                                                                                                                                                                                                             |                                            |                                                                  |                                                                                      |                                                                             |
| External connection system               | Communication part                | One-touch connector for communication [Transmission circuit]                                                                                                                                                                                       |                                            |                                                                  |                                                                                      |                                                                             |
|                                          |                                   | 5-pin IDC plug is sold separately. <Optional> Online connector for communication: A6CON-LJ5P                                                                                                                                                       |                                            |                                                                  |                                                                                      |                                                                             |
|                                          | Power supply part                 | One-touch connector for power supply and FG [Module power supply, FG]                                                                                                                                                                              |                                            |                                                                  |                                                                                      |                                                                             |
|                                          |                                   | 5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD <Optional> Online connector for power supply: A6CON-PWJ5P                                                                                                                            |                                            |                                                                  |                                                                                      |                                                                             |
|                                          | I/O part                          | Connector for I/O (40 pins, M3 screw)                                                                                                                                                                                                              |                                            |                                                                  |                                                                                      |                                                                             |
| Applicable DIN rail                      |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                  |                                            |                                                                  |                                                                                      |                                                                             |
| Applicable wire size                     | Connector for communication       | Applicable cable: FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                                               |                                            |                                                                  |                                                                                      |                                                                             |
|                                          | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG) [φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)] Wire diameter: 0.16mm or more Insulating coating material: PVC (heat-resistant)                                                                  |                                            |                                                                  |                                                                                      |                                                                             |
|                                          | Connector for I/O                 | • 0.08 to 0.3mm <sup>2</sup> (28 to 22 AWG) stranded wire (A6CON1 and A6CON4) <sup>*1</sup> • 0.08 to 0.2mm <sup>2</sup> (28 to 24 AWG) stranded wire (A6CON2) • 0.08mm <sup>2</sup> (28 AWG) stranded wire, φ0.25mm (30 AWG) single wire (A6CON3) |                                            |                                                                  |                                                                                      |                                                                             |
| Applicable connector for I/O             |                                   | A6CON1 (soldering type), A6CON2 (crimping type), A6CON3 (IDC type), A6CON4 (soldering type)                                                                                                                                                        |                                            |                                                                  |                                                                                      |                                                                             |
| Accessory                                |                                   | User's manual                                                                                                                                                                                                                                      |                                            |                                                                  |                                                                                      |                                                                             |

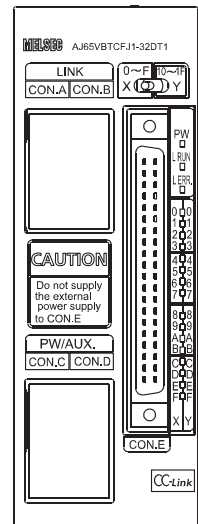
\*1 Use cables with outside diameter of 1.3mm or shorter to connect 40 cables to the connector. In addition, consider the amount of current to be used and select appropriate cables.



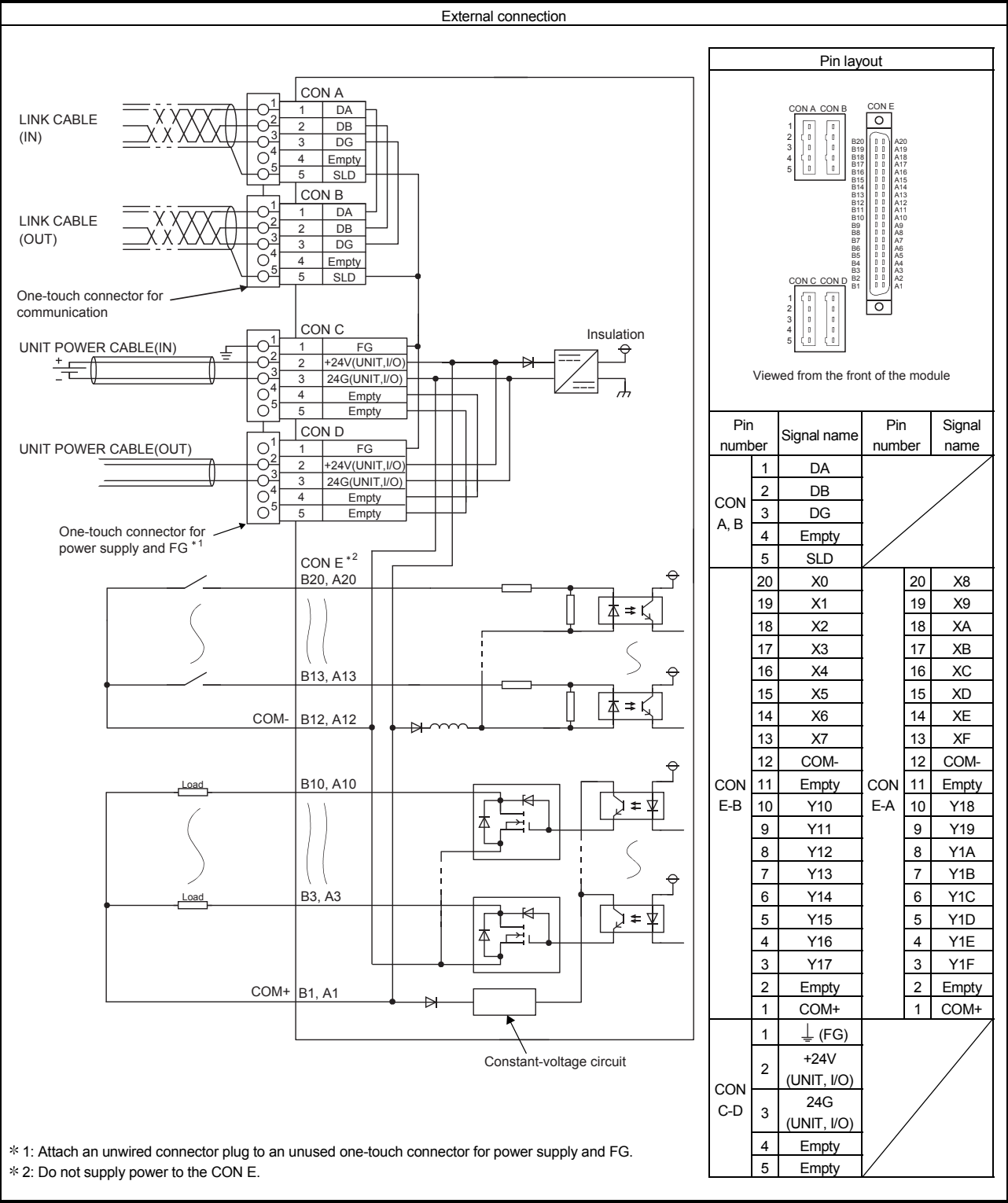


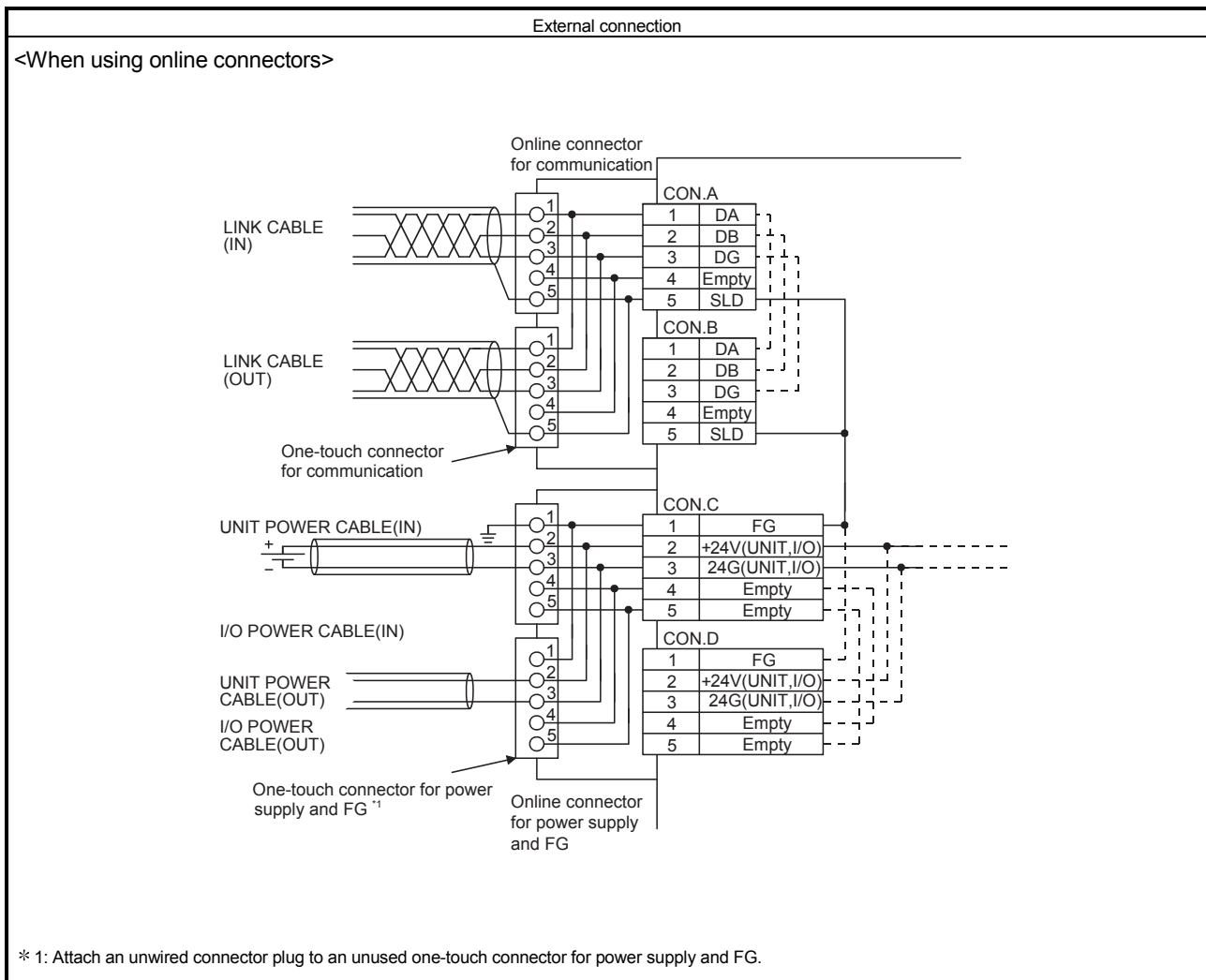
## 6.5.3 AJ65VBTCFJ1-32DT1 combined module

| Item                                     |                                   | Type                                                                                                                                                                                                                                                     | DC input transistor output combined module |                                                                  | Appearance                                                                           |             |
|------------------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------|
|                                          |                                   | AJ65VBTCFJ1-32DT1                                                                                                                                                                                                                                        |                                            |                                                                  |                                                                                      |             |
| Input                                    |                                   |                                                                                                                                                                                                                                                          | Output                                     |                                                                  |  |             |
| Number of input points                   |                                   | 16 points                                                                                                                                                                                                                                                | Number of output points                    | 16 points                                                        |                                                                                      |             |
| Isolation method                         |                                   | Photocoupler                                                                                                                                                                                                                                             | Isolation method                           | Photocoupler                                                     |                                                                                      |             |
| Rated input voltage                      |                                   | 24VDC                                                                                                                                                                                                                                                    | Rated load voltage                         | 24VDC                                                            |                                                                                      |             |
| Rated input current                      |                                   | Approx. 5mA                                                                                                                                                                                                                                              | Operating load voltage range               | Same as that for the module power supply                         |                                                                                      |             |
| Operating voltage range                  |                                   | Same as that for the module power supply                                                                                                                                                                                                                 | Max. load current                          | 0.1A/point, 1.6A/common                                          |                                                                                      |             |
| Max. number of simultaneous input points |                                   | 100% or 40% (Refer to Section 1.3.)                                                                                                                                                                                                                      | Max. inrush current                        | 0.7A, 10ms or less                                               |                                                                                      |             |
| ON voltage/ON current                    |                                   | 15VDC or higher/3mA or higher                                                                                                                                                                                                                            | Leakage current at OFF                     | 0.1mA or lower                                                   |                                                                                      |             |
| OFF voltage/OFF current                  |                                   | 3VDC or lower/0.5mA or lower                                                                                                                                                                                                                             | Max. voltage drop at ON                    | 0.1VDC or lower (TYP.) 0.1A, 0.2VDC or lower (MAX.) 0.1A         |                                                                                      |             |
| Input resistance                         |                                   | Approx. 4.7kΩ                                                                                                                                                                                                                                            |                                            |                                                                  |                                                                                      |             |
| Response time                            | OFF→ON                            | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                                 | Output type                                | Sink type                                                        |                                                                                      |             |
|                                          | ON→OFF                            | 0.2ms or less (at 24VDC)                                                                                                                                                                                                                                 | Protection function                        | Overload protection, overvoltage protection, overheat protection |                                                                                      |             |
| Input type                               | Positive common (sink type)       |                                                                                                                                                                                                                                                          | Response time                              | OFF→ON                                                           |                                                                                      | 1ms or less |
|                                          |                                   |                                                                                                                                                                                                                                                          | ON→OFF                                     | 1ms or less (rated load, resistive load)                         |                                                                                      |             |
|                                          |                                   | External power supply for output part                                                                                                                                                                                                                    | Same as that for the module power supply   |                                                                  |                                                                                      |             |
|                                          |                                   | Surge suppressor                                                                                                                                                                                                                                         | Zener diode                                |                                                                  |                                                                                      |             |
| Wiring method for common                 |                                   | 32 points/common (1-wire, FCN connector type)                                                                                                                                                                                                            |                                            |                                                                  |                                                                                      |             |
| Number of occupied stations              |                                   | 32-point assignment/station (32 points used)                                                                                                                                                                                                             |                                            |                                                                  |                                                                                      |             |
| Module power supply                      | Voltage                           | 20.4 to 28.8VDC (ripple ratio: within 5%)                                                                                                                                                                                                                |                                            |                                                                  |                                                                                      |             |
|                                          | Current                           | 50mA or lower (at 24VDC and all points ON), excluding external load current                                                                                                                                                                              |                                            |                                                                  |                                                                                      |             |
| Noise immunity                           |                                   | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                   |                                            |                                                                  |                                                                                      |             |
| Withstand voltage                        |                                   | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                         |                                            |                                                                  |                                                                                      |             |
| Insulation resistance                    |                                   | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                        |                                            |                                                                  |                                                                                      |             |
| Protection degree                        |                                   | IP1XB                                                                                                                                                                                                                                                    |                                            |                                                                  |                                                                                      |             |
| Weight                                   |                                   | 0.16kg                                                                                                                                                                                                                                                   |                                            |                                                                  |                                                                                      |             |
| External connection system               | Communication part                | One-touch connector for communication [Transmission circuit]<br>5-pin IDC plug is sold separately: A6CON-L5P<br><Optional><br>Online connector for communication: A6CON-LJ5P                                                                             |                                            |                                                                  |                                                                                      |             |
|                                          | Power supply part                 | One-touch connector for power supply and FG [Module power supply, FG]<br>5-pin IDC plug is sold separately: A6CON-PW5P, A6CON-PW5P-SOD<br><Optional><br>Online connector for power supply: A6CON-PWJ5P                                                   |                                            |                                                                  |                                                                                      |             |
|                                          | I/O part                          | Connector for I/O (40 pins, M3 screw)                                                                                                                                                                                                                    |                                            |                                                                  |                                                                                      |             |
| Applicable DIN rail                      |                                   | TH35-7.5Fe, TH35-7.5Al (compliant with IEC 60715)                                                                                                                                                                                                        |                                            |                                                                  |                                                                                      |             |
| Applicable wire size                     | Connector for communication       | Applicable cable:<br>FANC-110SBH, FA-CBL200PSBH, CS-110                                                                                                                                                                                                  |                                            |                                                                  |                                                                                      |             |
|                                          | Connector for power supply and FG | 0.66 to 0.98mm <sup>2</sup> (18 AWG)<br>[φ2.2 to 3.0mm (A6CON-PW5P), φ2.0 to 2.3mm (A6CON-PW5P-SOD)]<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant)                                                               |                                            |                                                                  |                                                                                      |             |
|                                          | Connector for I/O                 | • 0.08 to 0.3mm <sup>2</sup> (28 to 22 AWG) stranded wire (A6CON1 and A6CON4) <sup>*1</sup><br>• 0.08 to 0.2mm <sup>2</sup> (28 to 24 AWG) stranded wire (A6CON2)<br>• 0.08mm <sup>2</sup> (28 AWG) stranded wire, φ0.25mm (30 AWG) single wire (A6CON3) |                                            |                                                                  |                                                                                      |             |
| Applicable connector for I/O             |                                   | A6CON1 (soldering type), A6CON2 (crimping type), A6CON3 (IDC type), A6CON4 (soldering type)                                                                                                                                                              |                                            |                                                                  |                                                                                      |             |
| Accessory                                |                                   | User's manual                                                                                                                                                                                                                                            |                                            |                                                                  |                                                                                      |             |



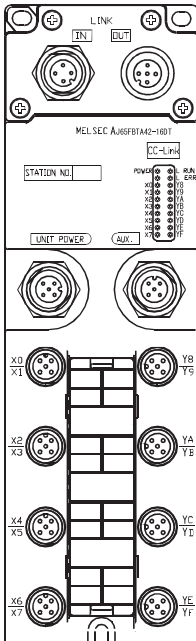
\*1 Use cables with outside diameter of 1.3mm or shorter to connect 40 cables to the connector. In addition, consider the amount of current to be used and select appropriate cables.

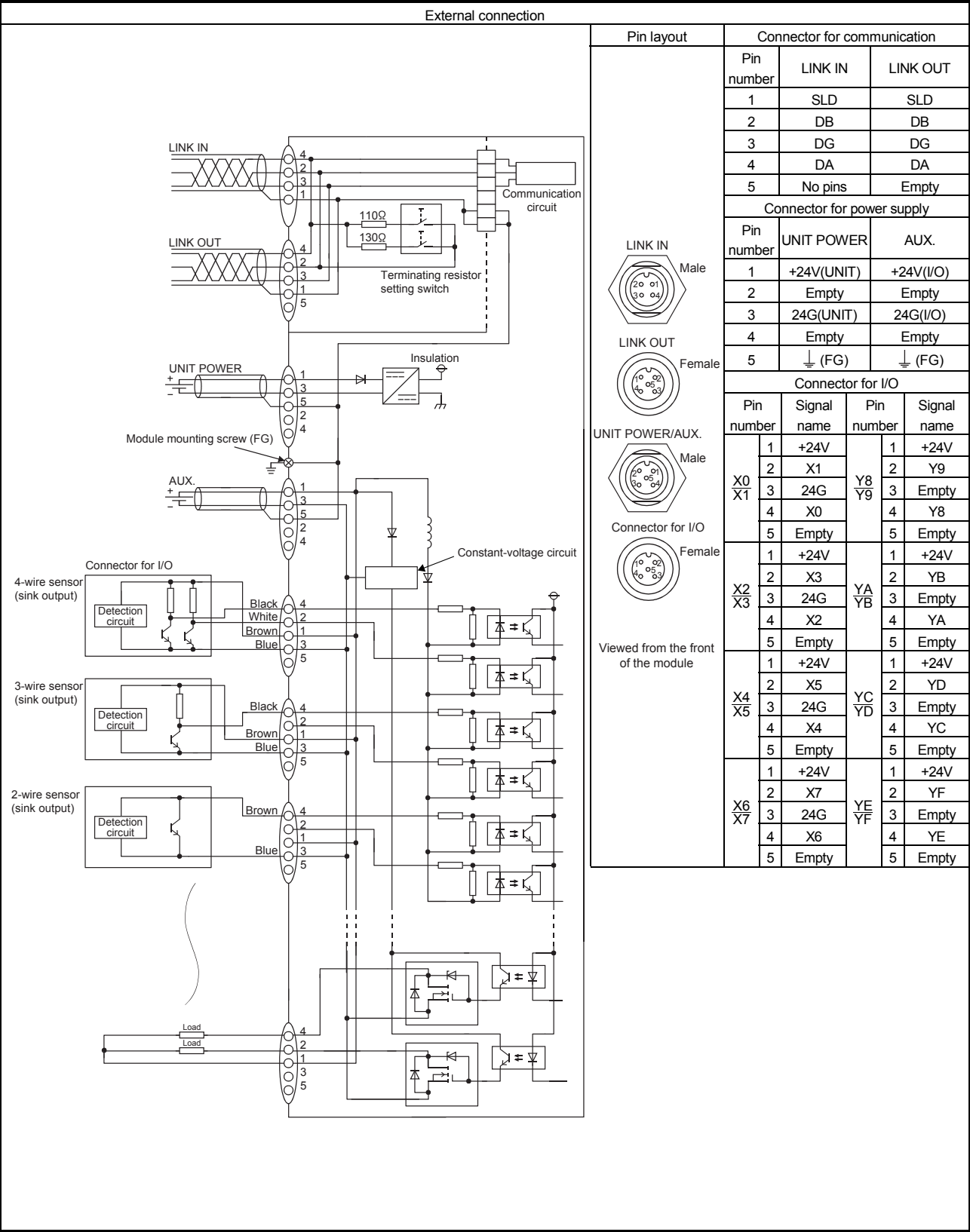




## 6.6 Waterproof Type Combined Module

## 6.6.1 AJ65FBTA42-16DT combined module

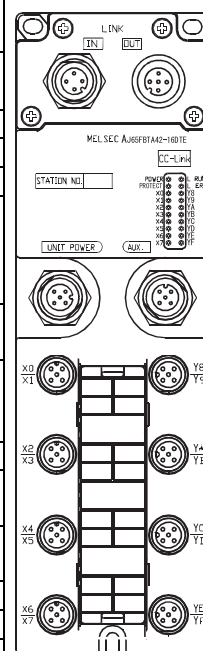
| Item                                     |         | Type                                                                                                   | DC input transistor output combined module                                         |         | Appearance                                                                           |                                                                             |
|------------------------------------------|---------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
|                                          |         | AJ65FBTA42-16DT                                                                                        |                                                                                    |         |                                                                                      |                                                                             |
| Input                                    |         |                                                                                                        | Output                                                                             |         |  |                                                                             |
| Number of input points                   |         | 8 points                                                                                               | Number of output points 8 points                                                   |         |                                                                                      |                                                                             |
| Isolation method                         |         | Photocoupler                                                                                           | Isolation method Photocoupler                                                      |         |                                                                                      |                                                                             |
| Rated input voltage                      |         | 24VDC                                                                                                  | Rated load voltage 24VDC                                                           |         |                                                                                      |                                                                             |
| Rated input current                      |         | Approx. 7mA                                                                                            | Operating load voltage range 20.4 to 26.4VDC (ripple ratio: within 5%)             |         |                                                                                      |                                                                             |
| Operating voltage range                  |         | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                              | Max. load current 0.5A/point, 2.4A/common                                          |         |                                                                                      |                                                                             |
| Max. number of simultaneous input points |         | 100%                                                                                                   | Max. inrush current 1.0A, 10ms or less                                             |         |                                                                                      |                                                                             |
| ON voltage/ON current                    |         | 14VDC or higher/ 3.5mA or higher                                                                       | Leakage current at OFF 0.25mA or lower                                             |         |                                                                                      |                                                                             |
| OFF voltage/OFF current                  |         | 6VDC or lower/1.7mA or lower                                                                           | Max. voltage drop at ON 0.15VDC or lower (TYP.) 0.5A, 0.25VDC or lower (MAX.) 0.5A |         |                                                                                      |                                                                             |
| Input resistance                         |         | Approx. 3.3kΩ                                                                                          | Output type Sink type                                                              |         |                                                                                      |                                                                             |
| Response time                            | OFF→ON  | 1.5ms or less (at 24VDC)                                                                               | Protection function                                                                |         |                                                                                      |                                                                             |
|                                          | ON→OFF  | 1.5ms or less (at 24VDC)                                                                               |                                                                                    |         |                                                                                      |                                                                             |
|                                          |         |                                                                                                        | Response time                                                                      | OFF→ON  |                                                                                      | 0.5ms or less                                                               |
|                                          |         |                                                                                                        |                                                                                    | ON→OFF  |                                                                                      | 1.5ms or less (resistive load)                                              |
|                                          |         |                                                                                                        | External power supply for output part                                              | Voltage |                                                                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                   |
|                                          |         |                                                                                                        |                                                                                    | Current |                                                                                      | 10mA or lower (at 24VDC and all points ON), excluding external load current |
| Input type                               |         | Positive common (sink type)                                                                            | Surge suppressor Zener diode                                                       |         |                                                                                      |                                                                             |
| Supply current for connected device      |         | 1.0A or lower/common                                                                                   |                                                                                    |         |                                                                                      |                                                                             |
| Wiring method for common                 |         | 16 points/common (2- to 4-wire, waterproof connector type)                                             |                                                                                    |         |                                                                                      |                                                                             |
| Number of occupied stations              |         | 32-point assignment/station (16 points used)                                                           |                                                                                    |         |                                                                                      |                                                                             |
| Module power supply                      | Voltage | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                              |                                                                                    |         |                                                                                      |                                                                             |
|                                          | Current | 50mA or lower (at 24VDC and all points ON)                                                             |                                                                                    |         |                                                                                      |                                                                             |
| Noise immunity                           |         | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition) |                                                                                    |         |                                                                                      |                                                                             |
| Withstand voltage                        |         | 500VAC for 1 minute between all DC external terminals and ground                                       |                                                                                    |         |                                                                                      |                                                                             |
| Insulation resistance                    |         | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)      |                                                                                    |         |                                                                                      |                                                                             |
| Protection degree                        |         | IP67                                                                                                   |                                                                                    |         |                                                                                      |                                                                             |
| Weight                                   |         | 0.40kg                                                                                                 |                                                                                    |         |                                                                                      |                                                                             |
| Accessory                                |         | User's manual                                                                                          |                                                                                    |         |                                                                                      |                                                                             |
| Optional item                            |         | Waterproof cap: A6CAP-WP2 (20 pieces)                                                                  |                                                                                    |         |                                                                                      |                                                                             |
| Other connecting devices                 |         | Refer to Section 1.6.1.                                                                                |                                                                                    |         |                                                                                      |                                                                             |

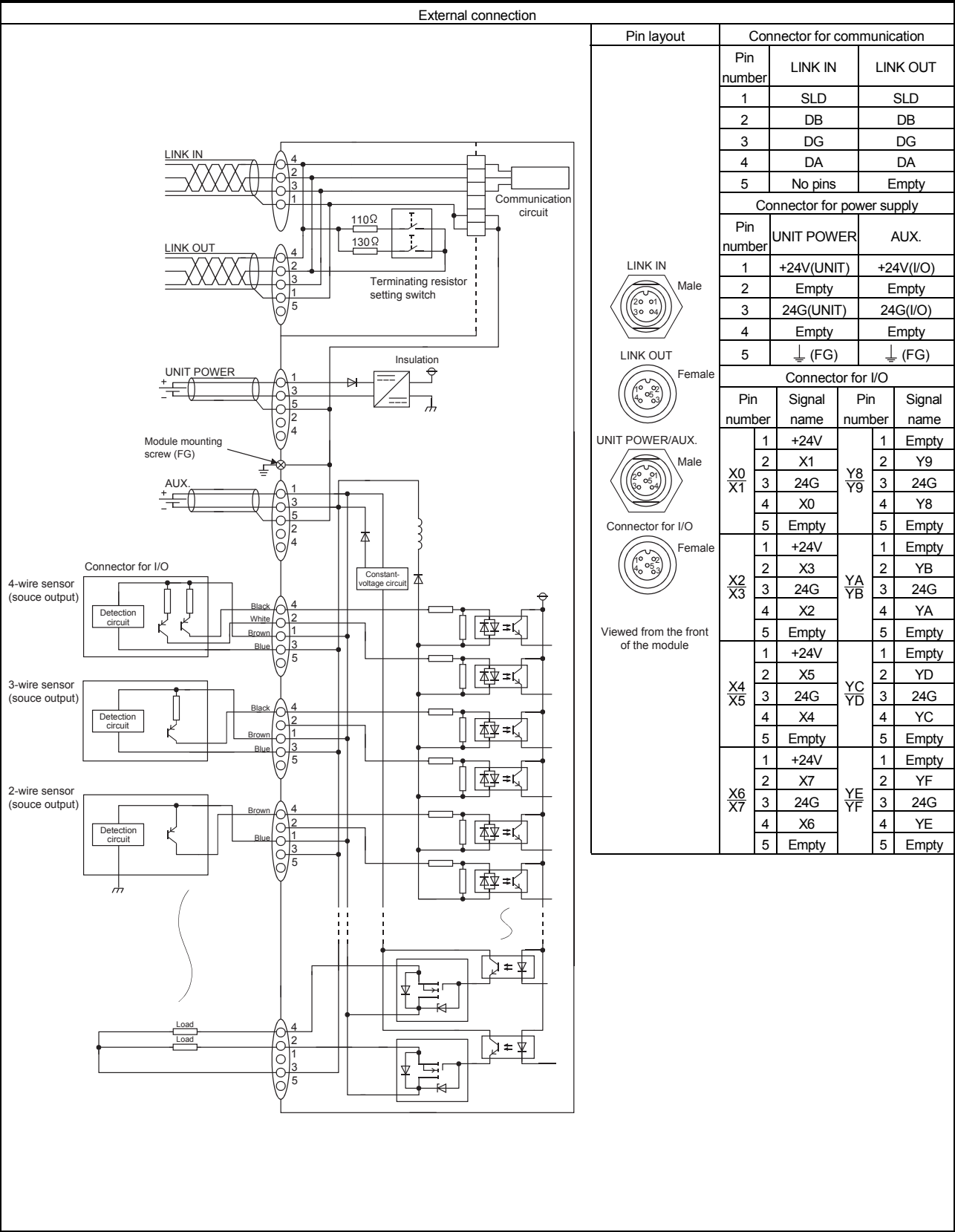




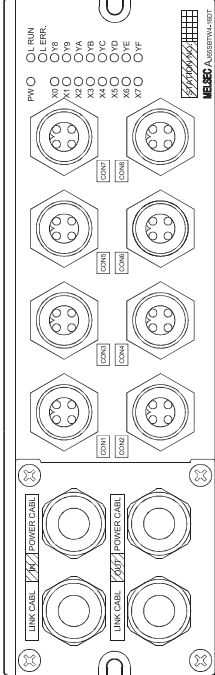
## 6.6.2 AJ65FBTA42-16DTE combined module

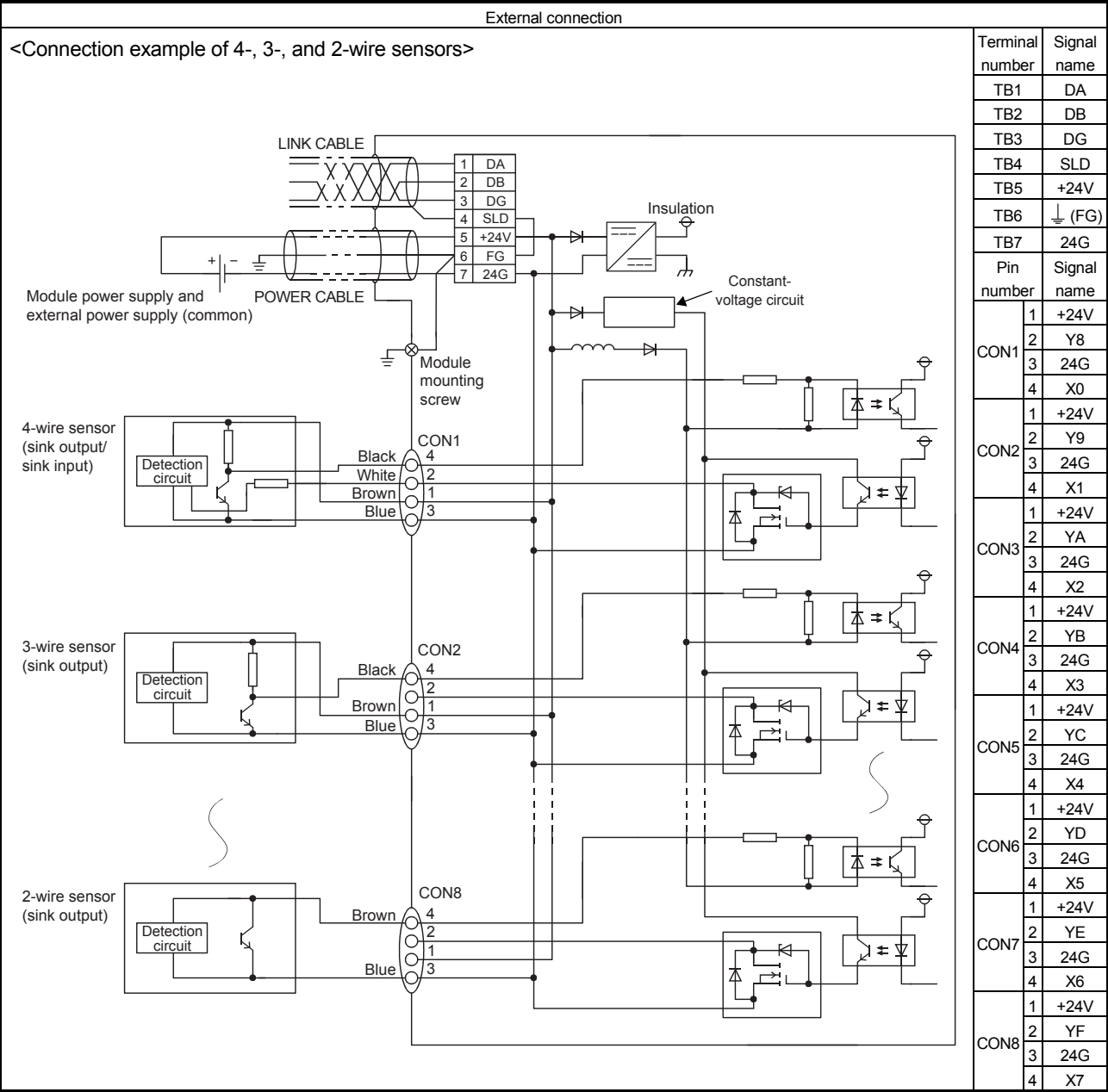
| Item                                     | Type    | DC input transistor output combined module<br>AJ65FBTA42-16DTE                                                  |                                       | Appearance                                                                                       |
|------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------|
|                                          |         | Input                                                                                                           | Output                                |                                                                                                  |
| Number of input points                   |         | 8 points                                                                                                        | Number of output points               | 8 points                                                                                         |
| Isolation method                         |         | Photocoupler                                                                                                    | Isolation method                      | Photocoupler                                                                                     |
| Rated input voltage                      |         | 24VDC                                                                                                           | Rated load voltage                    | 24VDC                                                                                            |
| Rated input current                      |         | Approx. 7mA                                                                                                     | Operating load voltage range          | 20.4 to 26.4VDC<br>(ripple ratio: within 5%)                                                     |
| Operating voltage range                  |         | 20.4 to 26.4VDC<br>(ripple ratio: within 5%)                                                                    | Max. load current                     | 1.0A/point, 4A/common                                                                            |
| Max. number of simultaneous input points |         | 100%                                                                                                            | Max. inrush current                   | 2.0A, 10ms or less                                                                               |
| ON voltage/ON current                    |         | 14VDC or higher/<br>3.5mA or higher                                                                             | Leakage current at OFF                | 0.3mA or lower                                                                                   |
| OFF voltage/OFF current                  |         | 6VDC or lower/1.7mA or lower                                                                                    | Max. voltage drop at ON               | 0.15VDC or lower (TYP.) 1.0A,<br>0.2VDC or lower (MAX.) 1.0A                                     |
| Input resistance                         |         | Approx. 3.3k $\Omega$                                                                                           |                                       |                                                                                                  |
| Response time                            | OFF→ON  | 1.5ms or less (at 24VDC)                                                                                        | Response time                         | OFF→ON                                                                                           |
|                                          | ON→OFF  | 1.5ms or less (at 24VDC)                                                                                        |                                       | ON→OFF                                                                                           |
|                                          |         |                                                                                                                 | Output type                           | Source type                                                                                      |
|                                          |         |                                                                                                                 | Protection function                   | Overload protection, overheat protection<br>(The LED turns on when any protection is activated.) |
|                                          |         |                                                                                                                 | External power supply for output part | Voltage                                                                                          |
|                                          |         |                                                                                                                 |                                       | Current                                                                                          |
| Input type                               |         | Negative common (source type)                                                                                   | Surge suppressor                      | Zener diode                                                                                      |
| Supply current for connected device      |         | 1.0A or lower/common                                                                                            |                                       |                                                                                                  |
| Wiring method for common                 |         | 16 points/common<br>(input: 2- to 4-wire waterproof connector type, output: 2-wire waterproof connector type)   |                                       |                                                                                                  |
| Number of occupied stations              |         | 32-point assignment/station (16 points used)                                                                    |                                       |                                                                                                  |
| Module power supply                      | Voltage | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                       |                                       |                                                                                                  |
|                                          | Current | 45mA or lower (at 24VDC and all points ON)                                                                      |                                       |                                                                                                  |
| Noise immunity                           |         | Noise voltage 500Vp-p, noise width 1 $\mu$ s,<br>noise frequency 25 to 60Hz (DC type noise simulator condition) |                                       |                                                                                                  |
| Withstand voltage                        |         | 500VAC for 1 minute between all DC external terminals and ground                                                |                                       |                                                                                                  |
| Insulation resistance                    |         | 10M $\Omega$ or higher between all DC external terminals and ground (500VDC insulation resistance tester)       |                                       |                                                                                                  |
| Protection degree                        |         | IP67                                                                                                            |                                       |                                                                                                  |
| Weight                                   |         | 0.40kg                                                                                                          |                                       |                                                                                                  |
| Accessory                                |         | User's manual                                                                                                   |                                       |                                                                                                  |
| Optional item                            |         | Waterproof cap: A6CAP-WP2 (20 pieces)                                                                           |                                       |                                                                                                  |
| Other connecting devices                 |         | Refer to Section 1.6.1.                                                                                         |                                       |                                                                                                  |

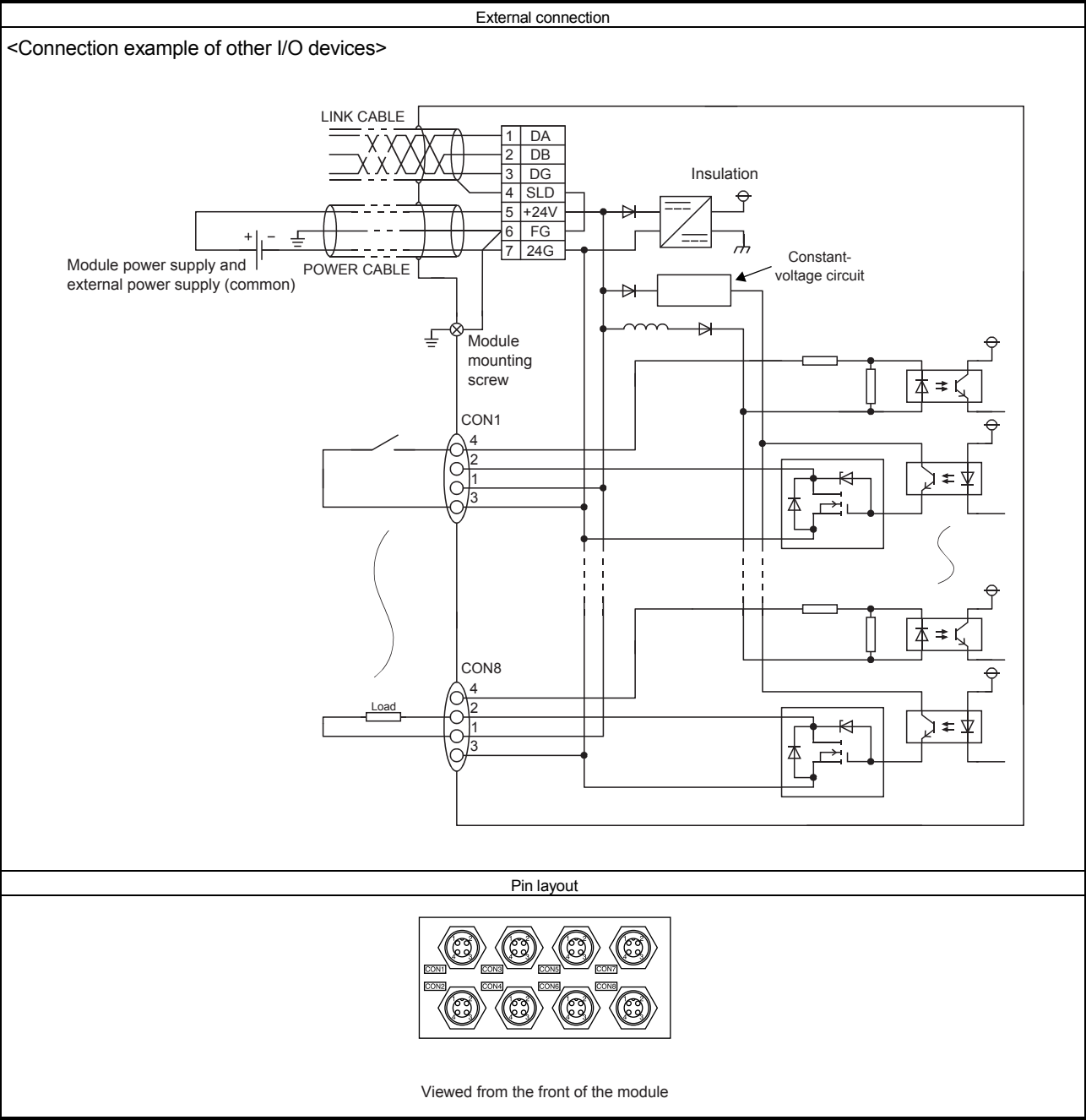




## 6.6.3 AJ65SBTW4-16DT combined module

| Item                                     |                                                             | Type                                                                                                                                                                                                                                                                                                                                                  | DC input transistor output combined module |                                                                  | Appearance                                                                           |                                                                             |
|------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
|                                          |                                                             | AJ65SBTW4-16DT                                                                                                                                                                                                                                                                                                                                        |                                            |                                                                  |                                                                                      |                                                                             |
| Input                                    |                                                             |                                                                                                                                                                                                                                                                                                                                                       | Output                                     |                                                                  |  |                                                                             |
| Number of input points                   |                                                             | 8 points                                                                                                                                                                                                                                                                                                                                              | Number of output points                    | 8 points                                                         |                                                                                      |                                                                             |
| Isolation method                         |                                                             | Photocoupler                                                                                                                                                                                                                                                                                                                                          | Isolation method                           | Photocoupler                                                     |                                                                                      |                                                                             |
| Rated input voltage                      |                                                             | 24VDC                                                                                                                                                                                                                                                                                                                                                 | Rated load voltage                         | 24VDC                                                            |                                                                                      |                                                                             |
| Rated input current                      |                                                             | Approx. 5mA                                                                                                                                                                                                                                                                                                                                           | Operating load voltage range               | 20.4 to 26.4VDC (ripple ratio: within 5%)                        |                                                                                      |                                                                             |
| Operating voltage range                  |                                                             | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                                                                             | Max. load current                          | 0.5A/point, 2.4A/common                                          |                                                                                      |                                                                             |
| Max. number of simultaneous input points |                                                             | 100%                                                                                                                                                                                                                                                                                                                                                  | Max. inrush current                        | 1.0A, 10ms or less                                               |                                                                                      |                                                                             |
| ON voltage/ON current                    |                                                             | 14VDC or higher/<br>3.5mA or higher                                                                                                                                                                                                                                                                                                                   | Leakage current at OFF                     | 0.25mA or lower                                                  |                                                                                      |                                                                             |
| OFF voltage/OFF current                  |                                                             | 6VDC or lower/<br>1mA or lower                                                                                                                                                                                                                                                                                                                        | Max. voltage drop at ON                    | 0.3VDC or lower (TYP.) 0.5A,<br>0.6VDC or lower (MAX.) 0.5A      |                                                                                      |                                                                             |
| Input resistance                         |                                                             | Approx. 4.7kΩ                                                                                                                                                                                                                                                                                                                                         | Output type                                | Sink type                                                        |                                                                                      |                                                                             |
| Response time                            | OFF→ON                                                      | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                                                                              | Protection function                        | Overload protection, overvoltage protection, overheat protection |                                                                                      |                                                                             |
|                                          | ON→OFF                                                      | 1.5ms or less (at 24VDC)                                                                                                                                                                                                                                                                                                                              |                                            |                                                                  |                                                                                      |                                                                             |
|                                          |                                                             |                                                                                                                                                                                                                                                                                                                                                       | Response time                              | OFF→ON                                                           |                                                                                      | 0.5ms or less                                                               |
|                                          |                                                             |                                                                                                                                                                                                                                                                                                                                                       |                                            | ON→OFF                                                           |                                                                                      | 1.5ms or less (resistive load)                                              |
|                                          |                                                             |                                                                                                                                                                                                                                                                                                                                                       | External power supply for output part      | Voltage                                                          |                                                                                      | 20.4 to 26.4VDC (ripple ratio: within 5%)                                   |
|                                          |                                                             |                                                                                                                                                                                                                                                                                                                                                       |                                            | Current                                                          |                                                                                      | 13mA or lower (at 24VDC and all points ON), excluding external load current |
| Input type                               |                                                             | Positive common (sink type)                                                                                                                                                                                                                                                                                                                           | Surge suppressor                           | Zener diode                                                      |                                                                                      |                                                                             |
| Wiring method for common                 |                                                             | 16 points/common (4-wire, waterproof connector type)<br>Same as that for the module power supply                                                                                                                                                                                                                                                      |                                            |                                                                  |                                                                                      |                                                                             |
| Number of occupied stations              |                                                             | 32-point assignment/station (16 points used)                                                                                                                                                                                                                                                                                                          |                                            |                                                                  |                                                                                      |                                                                             |
| Module power supply                      | Voltage                                                     | 20.4 to 26.4VDC (ripple ratio: within 5%)                                                                                                                                                                                                                                                                                                             |                                            |                                                                  |                                                                                      |                                                                             |
|                                          | Current                                                     | 50mA or lower (at 24VDC and all points ON)                                                                                                                                                                                                                                                                                                            |                                            |                                                                  |                                                                                      |                                                                             |
| Noise immunity                           |                                                             | Noise voltage 500Vp-p, noise width 1μs, noise frequency 25 to 60Hz (DC type noise simulator condition)                                                                                                                                                                                                                                                |                                            |                                                                  |                                                                                      |                                                                             |
| Withstand voltage                        |                                                             | 500VAC for 1 minute between all DC external terminals and ground                                                                                                                                                                                                                                                                                      |                                            |                                                                  |                                                                                      |                                                                             |
| Insulation resistance                    |                                                             | 10MΩ or higher between all DC external terminals and ground (500VDC insulation resistance tester)                                                                                                                                                                                                                                                     |                                            |                                                                  |                                                                                      |                                                                             |
| Protection degree                        |                                                             | IP67                                                                                                                                                                                                                                                                                                                                                  |                                            |                                                                  |                                                                                      |                                                                             |
| Weight                                   |                                                             | 0.70kg                                                                                                                                                                                                                                                                                                                                                |                                            |                                                                  |                                                                                      |                                                                             |
| External connection system               |                                                             | 7-point two-piece terminal block [Transmission circuit, module power supply, FG]<br>M3×5.2 screw (tightening torque range: 0.59 to 0.88N•m),<br>Waterproof connector<br>[compliant with IEC 60947-5-2, M12, male, 4 pins, IP67] (connector for I/O part)<br><Optional><br>Dustproof cap: A6CAP-DC1 (20 pieces), waterproof cap: A6CAP-WP1 (20 pieces) |                                            |                                                                  |                                                                                      |                                                                             |
| Applicable wire size                     | Transmission circuit, module power supply part              | Applicable cable size: φ5.0 to 8.0 mm<br>• RAV1.25-3 (compliant with JIS C 2805)<br>[Applicable wire size: 0.3 to 1.25mm <sup>2</sup> ]<br>• V2-MS3, RAP2-3SL, TGV2-3N<br>[Applicable wire size: 1.25 to 2.0mm <sup>2</sup> ]                                                                                                                         |                                            |                                                                  |                                                                                      |                                                                             |
|                                          | Connector for I/O                                           | —                                                                                                                                                                                                                                                                                                                                                     |                                            |                                                                  |                                                                                      |                                                                             |
| Tightening torque range                  | Module top-cover mounting screw (M3)                        | 0.54 to 0.64N•m                                                                                                                                                                                                                                                                                                                                       |                                            |                                                                  |                                                                                      |                                                                             |
|                                          | Module front-cover mounting screw (M3)                      | 0.54 to 0.64N•m                                                                                                                                                                                                                                                                                                                                       |                                            |                                                                  |                                                                                      |                                                                             |
|                                          | Module mounting screw (M4 with plain washer finished round) | 1.27 to 1.47N•m                                                                                                                                                                                                                                                                                                                                       |                                            |                                                                  |                                                                                      |                                                                             |
|                                          | Nut for pipe                                                | 0.99 to 1.48N•m                                                                                                                                                                                                                                                                                                                                       |                                            |                                                                  |                                                                                      |                                                                             |
| Through pipe specifications              |                                                             | Applicable cable size: φ5.0 to 8.0 mm                                                                                                                                                                                                                                                                                                                 |                                            |                                                                  |                                                                                      |                                                                             |
| Accessory                                |                                                             | User's manual, Waterproof plug (2 pieces)                                                                                                                                                                                                                                                                                                             |                                            |                                                                  |                                                                                      |                                                                             |





## 7 HANDLING OF COMPACT REMOTE I/O MODULES

## 7.1 Handling and Installation Precautions

This section lists the precautions for handling and installing the compact remote I/O module for the CC-Link system.

**WARNING**

- Do not touch any terminal or connector while power is on. Doing so will cause electric shock.

**CAUTION**

- Prevent foreign matter such as dust or wire chips from entering the module. Such foreign matter can cause a fire, failure, or malfunction.
- Do not disassemble or modify the module. Doing so may cause failure, malfunction, injury, or a fire.
- Do not directly touch any conductive part of the module. Doing so can cause malfunction or failure of the module.
- Do not drop or apply any strong shock to the module. Doing so may damage the module.
- Use applicable solderless terminals and tighten them within the specified torque range. If any spade solderless terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.
- Tighten the terminal screw within the specified torque range. Undertightening can cause fire or malfunction. Overtightening can damage the screw, resulting in short circuit or malfunction.
- When disposing of this product, treat it as industrial waste.
- Use the module in an environment that meets the general specifications in this manual. Failure to do so may result in electric shock, fire, malfunction, or damage to or deterioration of the product.
- Securely fix the module with a DIN rail or mounting screws. Tighten the screws within the specified torque range. Undertightening can cause drop of the screw, short circuit or malfunction. Overtightening can damage the screw, resulting in drop or short circuit.
- Shut off the external power supply (all phases) used in the system before mounting or removing a module to/from a control panel. Failure to do so may cause the module to fail or malfunction.

7

- (1) Tighten the module mounting screw or terminal block screw within the following torque range. Overtightening can damage the module case.

- (a) Terminal block type, one-touch connector type, or FCN connector type

| Screw                                                             | Tightening torque range |
|-------------------------------------------------------------------|-------------------------|
| Module mounting screw (M4 screw with plain washer finished round) | 0.78 to 1.08N·m         |
| Terminal block screw (M3)                                         | 0.59 to 0.88N·m         |
| Terminal block installation screw (M3.5)                          | 0.68 to 0.98N·m         |

- (b) Waterproof type (AJ65SBTW□-16□)

| Screw                                                             | Tightening torque range |
|-------------------------------------------------------------------|-------------------------|
| Module top cover mounting screw (M3)                              | 0.54 to 0.64N·m         |
| Module front cover mounting screw (M3)                            | 0.54 to 0.64N·m         |
| Nut for pipe                                                      | 0.99 to 1.48N·m         |
| Module mounting screw (M4 screw with plain washer finished round) | 1.27 to 1.47N·m         |
| Terminal block screw (M3)                                         | 0.59 to 0.88N·m         |
| Terminal block installation screw (M3.5)                          | 0.68 to 0.98N·m         |

## (c) Low profile waterproof type (AJ65FBTA□-16□)

| Screw                                     | Tightening torque range |
|-------------------------------------------|-------------------------|
| Communication adapter mounting screw (M4) | 0.42 to 0.58N·m         |
| Module mounting screw (M4)                | 0.78 to 1.18N·m         |
| Waterproof cap (A6CAP-WP2)                | 0.29 to 0.34N·m         |

## (d) Spring clamp terminal block type or sensor connector (e-CON) type

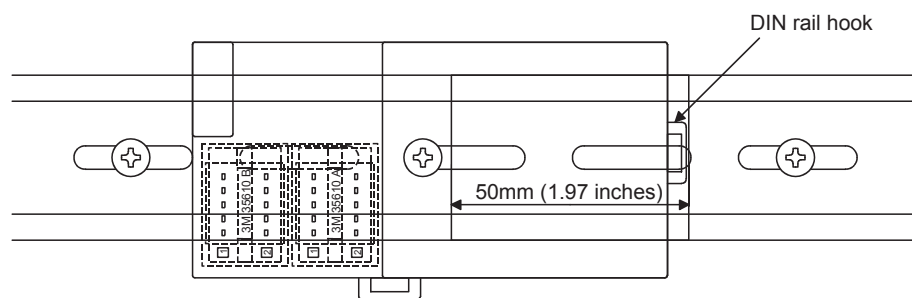
| Screw                 | Tightening torque range |
|-----------------------|-------------------------|
| Mounting bracket (M4) | 0.82 to 1.11N·m         |

**POINT**

- For a terminal and a screw, avoid adhering to oil.  
Doing so may damage the screw.
- When using two solderless terminals, place them with their backs faced.  
If not, a screw cannot be full inserted, resulting in damage to the screw.
- Tighten the terminal screw with an applicable driver.  
Failure to do so may damage the screw.

- (2) A scratch-resistant film is attached on the surface of the module during transportation.  
Remove the film before operation.

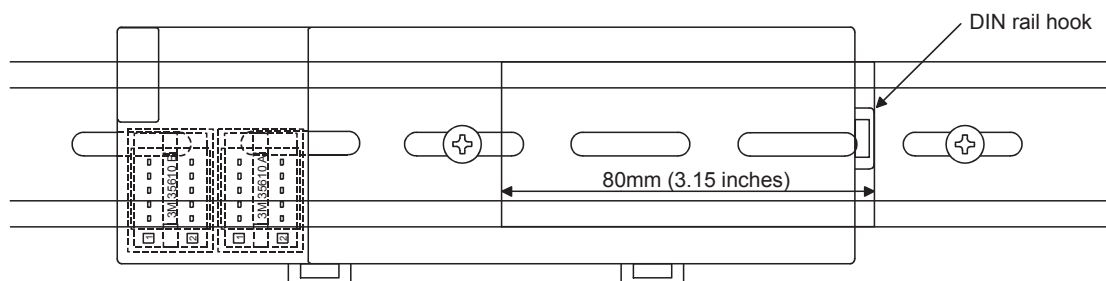
- (3) Observe the following points when installing a module to a control panel using a DIN rail.
- (a) Applicable DIN rail (compliant with IEC 60715)  
TH35-7.5Fe  
TH35-7.5Al
  - (b) Mounting pitch  
When installing a DIN rail to a control panel, keep mounting pitches 200mm (7.87 inches) or less.
  - (c) Area where screws cannot be used for Din rail installation  
When installing the AJ65VBTCE□-16□ and AJ65VBTCE□-32□ to the DIN rail horizontally as shown below, tighten a screw so that a certain distance will be ensured between the screw and the DIN rail hook on the right side of module.  
Failure to do so may cause the screw to interfere with the DIN rail hook.
- 1) For AJ65VBTCE□-16□  
Tighten a screw keeping a distance of 50mm (1.97 inches) or more from the DIN rail hook on the right side of module.





## 2) For AJ65VBTCE□-32□

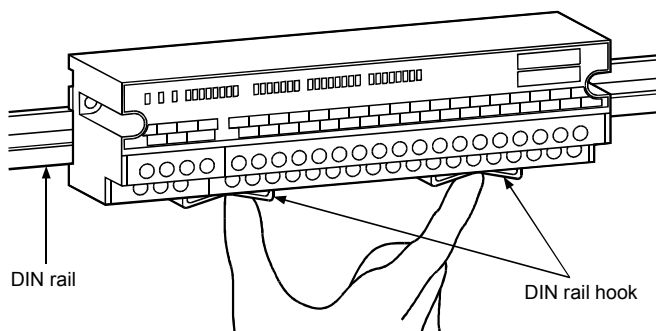
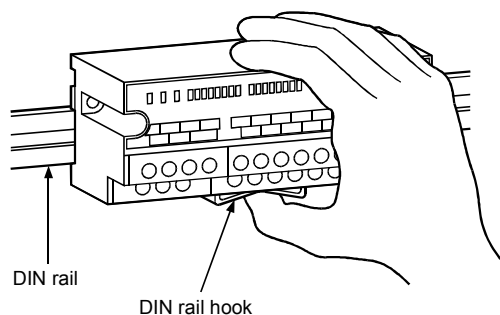
Tighten a screw keeping a distance of 80mm (3.15 inches) or more from the DIN rail hook on the right side of module.



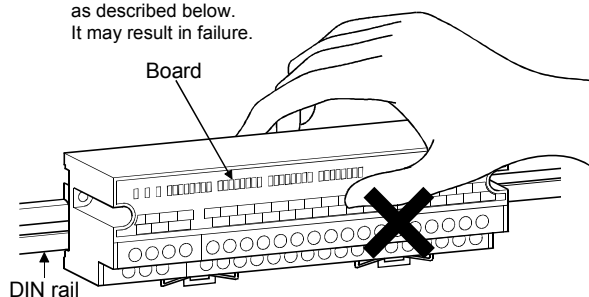
(4) When mounting the compact remote I/O module to a DIN rail, push in the DIN rail hook located at the bottom of the module until it clicks.

For AJ65SBTB1-8 □, AJ65SBTB1-16 □,  
AJ65SBTC4-16 □, AJ65SBTC1-32 □,  
AJ65SBTCF1-32 □, AJ65SBTB2-8 □,  
AJ65SBTB2N-8 □, AJ65SBTB32-8 □,  
AJ65VBTS □ -16□, AJ65VBTCE □ -8 □,  
AJ65VBTCE □ -16 □  
compact remote I/O modules

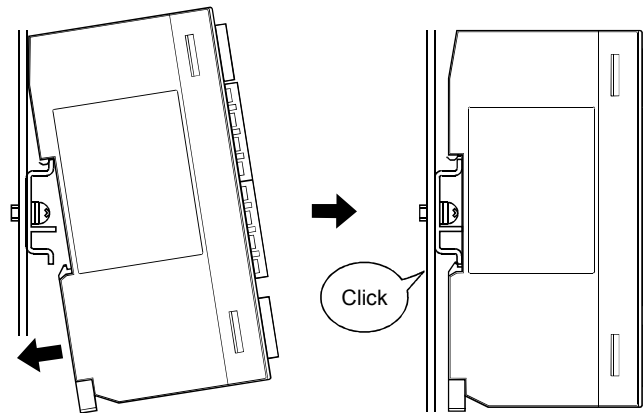
For AJ65SBTB1B-16 □, AJ65SBTB1-32 □,  
AJ65SBTB2-16 □, AJ65SBTB2N-16□,  
AJ65SBTB3-16□, AJ65SBTB32-16□,  
AJ65VBTS□-32□, AJ65VBTCE□-32□  
compact remote I/O modules



Note: Do not touch the board  
as described below.  
It may result in failure.

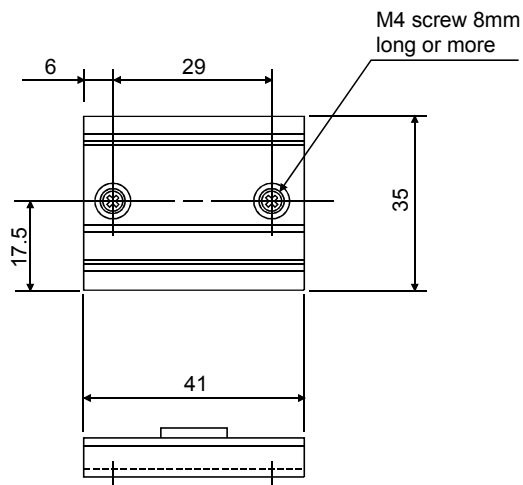


- (5) When mounting the compact remote I/O module on the DIN rail, put its upper hook onto the fixing bracket and push the module until it clicks.

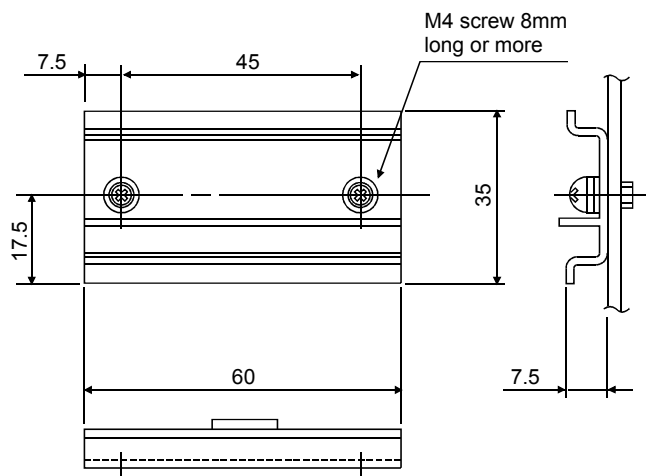


[Mounting dimensions]

(a) A6PLT-J65V1 (For module width 41mm only)



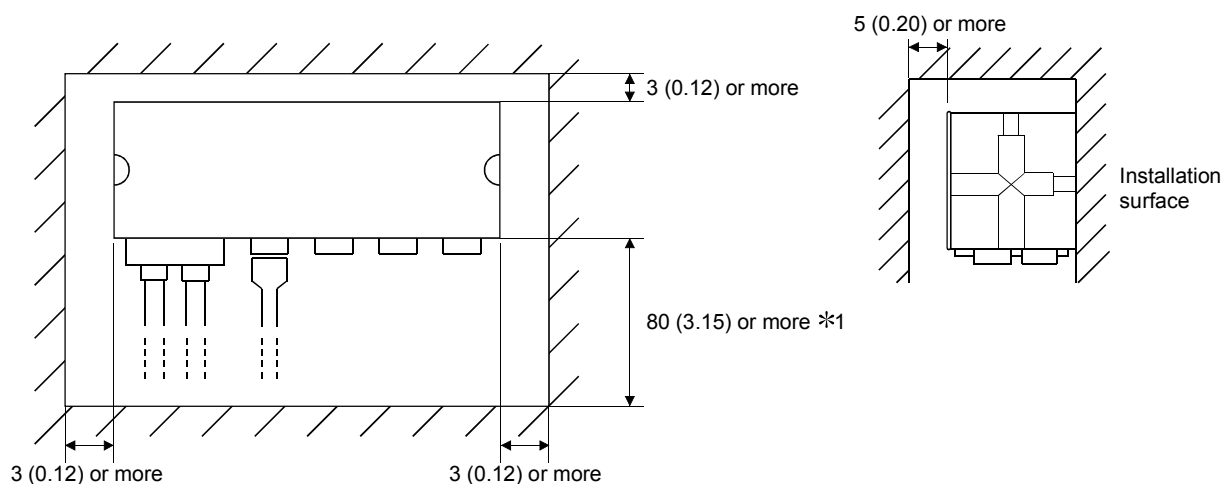
(b) A6PLT-J65V2 (For module width 60mm only)



Unit : mm

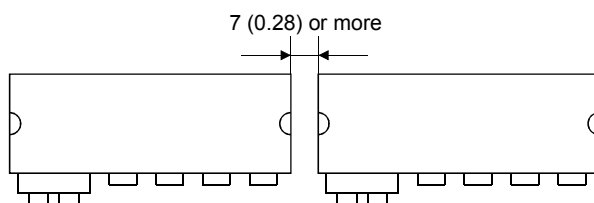
- (6) Do not install the compact remote I/O module to the place where:
- (a) an ambient temperature is outside the range of 0 to 55°C (0 to 45°C for the waterproof remote I/O module),
  - (b) ambient humidity is outside the range of 10 to 99%RH,
  - (c) condensation occurs due to a sudden temperature change,
  - (d) corrosive gas or combustible gas is present,
  - (e) conductive powder (such as dust and iron powder), oil mist, salinity, or organic solvent is filled,
  - (f) the module is exposed to direct sunlight,
  - (g) a strong electric field or strong magnetic field is generated, and
  - (h) the module is subject to vibration or shock.

- (7) When installing the compact remote I/O module into a panel, etc., provide 60mm (2.36 inches) or more of space between the top and bottom of the module and other structures or parts so that good ventilation and ease of operation when exchanging modules can be secured.
- (8) Install the compact remote I/O module on a level surface.  
If the surface is uneven, unnecessary force is applied to the printed circuit board, causing malfunction.
- (9) When installing the waterproof-type remote I/O module, provide the space shown in the figure below between the top and bottom of the module and other structures or parts so that good ventilation can be secured and that interference and application of load on the waterproof connector can be prevented.  
When connecting two modules in parallel, secure 5mm (0.2 inches) of space between them.



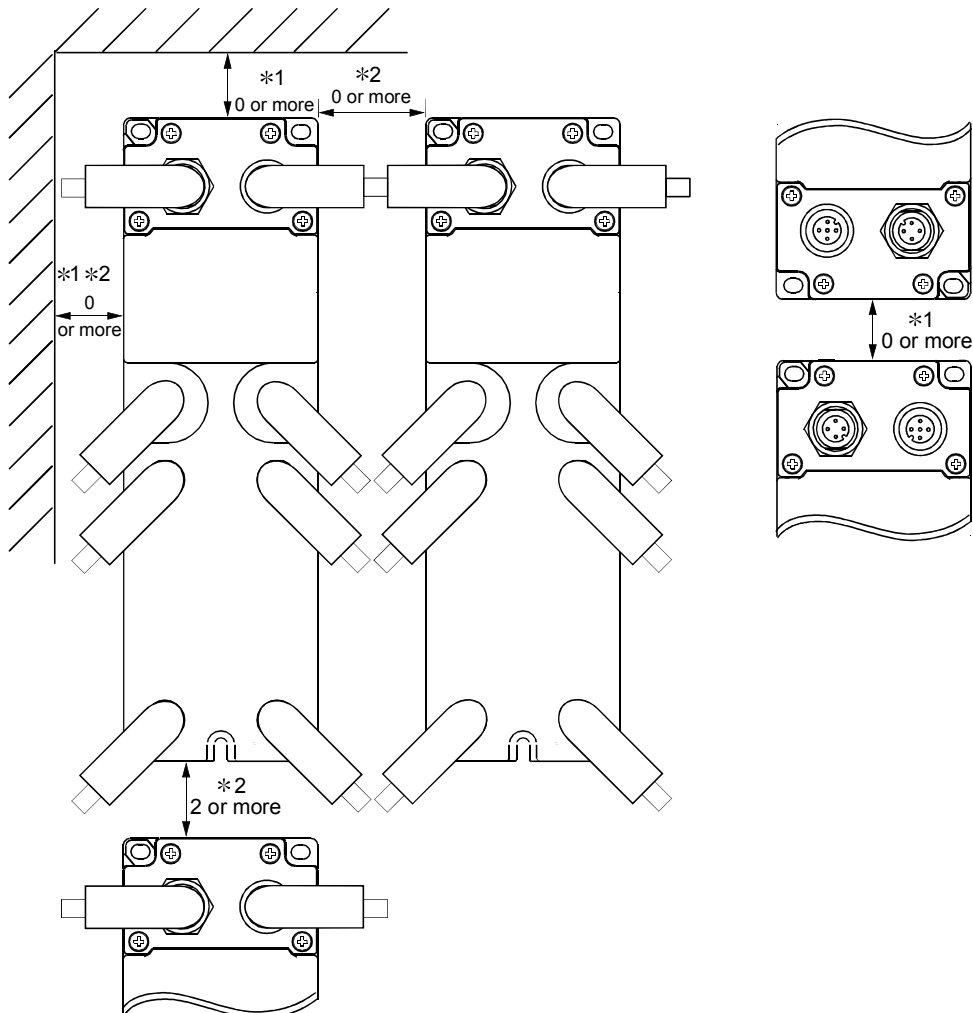
\*1 Provide a space so that no load is applied to the cable  
(the space differs depending on the waterproof connector used).

<When two modules are installed in parallel>



Unit : mm (inch)

- (10) If a waterproof cap is being installed on the low profile waterproof type remote I/O module, in order to improve ventilation and also to prevent interference, as well as to prevent a load from bearing on the waterproof connector, all the distances shown in the following figures between the module's side surfaces and the structure or parts.



- \*1 If you disconnect and connect the communications adapter, set the operating distance using a screwdriver, etc.
- \*2 If you are using a right angle type waterproof plug or Y branch connector, set a distance where no load will be brought to bear on the cable.

- (11) When installing the sensor connector (e-CON) type modules in parallel, take intervals between the modules as shown below.  
(The interval is required for the size of a DIN rail hook or mounting brackets.)

| Installation method of the module | Installation orientation of the module          | Interval <sup>*3</sup> |
|-----------------------------------|-------------------------------------------------|------------------------|
| Using a DIN rail <sup>*1</sup>    | Basic, Upside down<br>(vertical installation)   | 5mm                    |
|                                   | Basic, Upside down<br>(horizontal installation) | 5mm                    |
| Using screws <sup>*2</sup>        | Basic, Upside down<br>(vertical installation)   | 5mm                    |
|                                   | Basic, Upside down<br>(horizontal installation) | 15mm                   |

- \* 1 This is the case when a DIN rail is installed horizontally. Do not apply this interval to the AJ65VBTCE□-8□.
- \* 2 This is the case when mounting brackets are attached on the top and bottom sides of the module. If the brackets are attached on the right and left sides of the module, apply the intervals reversely. (The interval for the vertical installation is 15mm and the interval for the horizontal installation is 5mm.)
- \* 3 The interval indicates the distance from the modules that are installed on the either side.

- (12) When handling the DIP switch, observe the following:

(a) Use a compact driver.

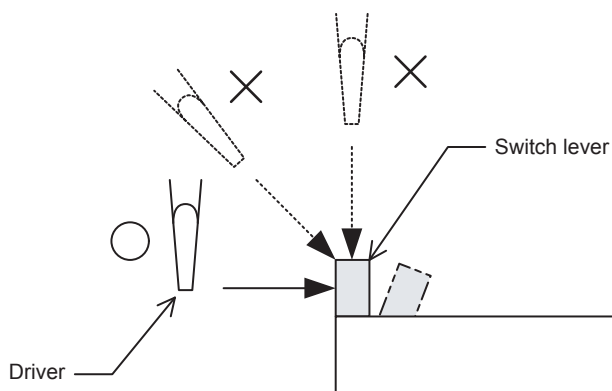
Do not handle the DIP switch with a mechanical pencil or a sharp, such as a pair of tweezers and a needle.

If the lead or lead powder of a mechanical pencil enters into the switch, a failure may result. Or if it drops into a circuit board, an electrical problem may result.

Using a sharp may damage the switch, resulting in failure.

(b) Slide the switch lever one by one horizontally to the intended direction.

If the switch is slid from an oblique direction or from the right above, it may damage or be transformed due to a load.



## 7.2 Wiring Procedures for One-touch Connector Plugs

## 7.2.1 List of one-touch connector plugs

The following table lists one-touch connector plugs applicable to the CC-Link system compact remote I/O module.

| Product name                                                   | Mitsubishi model name | Part model name (manufacturer) | Specifications                                                                                                                                    |                                  |                       | Color of the cover |
|----------------------------------------------------------------|-----------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------|--------------------|
|                                                                |                       |                                | Applicable cable size (core)                                                                                                                      | Applicable cable size (diameter) | Maximum rated current |                    |
| One-touch connector plug<br>*1, *4                             | A6CON-P214            | 33104-6000FL<br>*5             | 0.14 to 0.2mm <sup>2</sup><br>(26 to 24 AWG)                                                                                                      | φ1.0 to 1.4mm                    | 2A*7                  | Transparent        |
|                                                                | A6CON-P220            | 33104-6100FL<br>*5             |                                                                                                                                                   | φ1.4 to 2.0mm                    |                       | Yellow             |
|                                                                | A6CON-P514            | 33104-6200FL<br>*5             | 0.3 to 0.5mm <sup>2</sup><br>(22 to 20 AWG)                                                                                                       | φ1.0 to 1.4mm                    | 3A*7                  | Red                |
|                                                                | A6CON-P520            | 33104-6300FL<br>*5             |                                                                                                                                                   | φ1.4 to 2.0mm                    |                       | Blue               |
| One-touch connector plug for communication<br>*2, *4           | A6CON-L5P             | 35505-6000-B0M GF *5           | Communication line 0.5mm <sup>2</sup> (20 AWG)                                                                                                    | φ2.2 to 3.0mm                    |                       | Red                |
|                                                                |                       |                                | Shielded cable 0.5mm <sup>2</sup> (20 AWG)                                                                                                        |                                  |                       |                    |
| One-touch connector plug for power supply and FG<br>*2, *4, *6 | A6CON-PW5P            | 35505-6080-A00 GF *5           | 0.75mm <sup>2</sup> (0.66 to 0.98mm <sup>2</sup> ) (18 AWG)<br>Wire diameter: 0.16mm or more<br>Insulating coating material: PVC (heat-resistant) | φ2.2 to 3.0mm                    | 7A*7                  | Gray               |
|                                                                | A6CON-PW5P-SOD        | 35505-6180-A00 GF *5           |                                                                                                                                                   | φ2.0 to 2.3mm                    |                       | Blue               |
| Online connector for communication<br>*3                       | A6CON-LJ5P            | 35720-L200-B00 AK *5           | —                                                                                                                                                 | —                                | —                     | —                  |
| Online connector for power supply and FG *3                    | A6CON-PWJ5P           | 35720-L200-A00 AK *5           | —                                                                                                                                                 | —                                | —                     | —                  |

\*1 The A6CON-P□□□ (manufactured by Mitsubishi) is available in packs of 20 pieces.

\*2 The A6CON-□5P (manufactured by Mitsubishi) is available in packs of 10 pieces.

\*3 The A6CON-□J5P (manufactured by Mitsubishi) is available in packs of 5 pieces.

\*4 One-touch connector plugs can no longer be used once crimped.

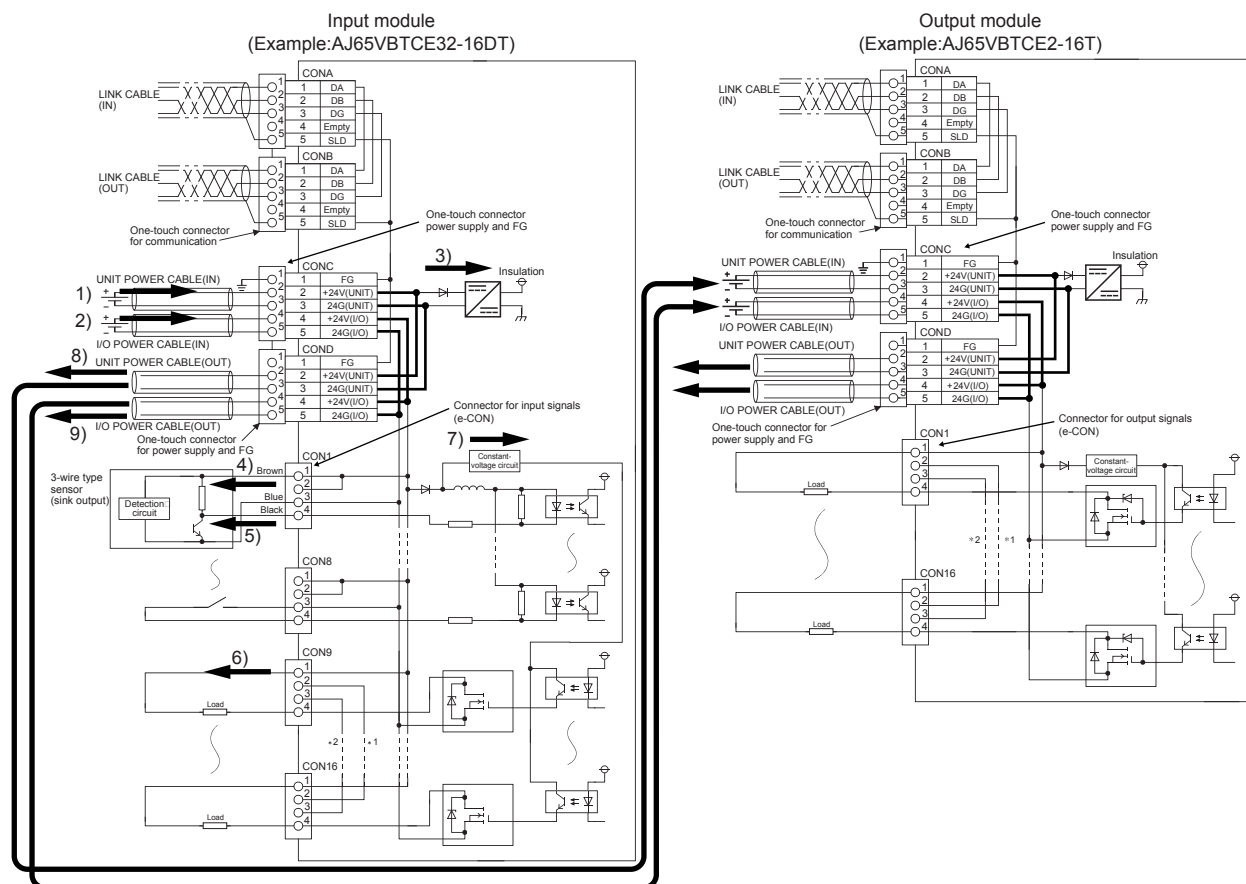
\*5 The manufacturer is Sumitomo 3M Limited.

\*6 Check the outside diameter of an applicable cable and select a connector.

\*7 Keep the current within the allowable range of the connected cable.

## 7.2.2 Precautions for transition wiring of one-touch connector for power supply and FG

Current flows in the modules when they are transition wired through one-touch connectors for power supply and FG. Design the system so that the current flows in each module equals to or lower than the maximum rated current shown below.



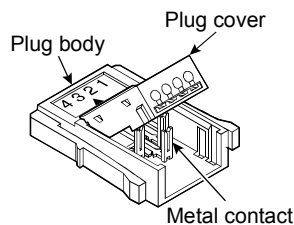
| No. | Power port               | Connector                                                             | Maximum rated current |
|-----|--------------------------|-----------------------------------------------------------------------|-----------------------|
| 1)  | Module power supply (IN) | One-touch connector for power supply and FG (No.2 and 3 pins of CONC) | 7A * <sup>1</sup>     |
| 2)  | I/O power supply (IN)    | One-touch connector for power supply and FG (No.4 and 5 pins of CONC) | 7A * <sup>1</sup>     |

| No. | Power supply                          | Power port (source)      | Description                                                                      | Maximum current consumption                           |
|-----|---------------------------------------|--------------------------|----------------------------------------------------------------------------------|-------------------------------------------------------|
| 3)  | Module power supply                   | Module power supply (IN) | Power supply for CC-Link modules                                                 | Module power supply                                   |
| 4)  | Power supply for input device         | I/O power supply (IN)    | Power supply for input devices connected, such as sensors                        | Supply current for connected device                   |
| 5)  | Input current                         |                          | Input signals from input devices                                                 | Rated input current                                   |
| 6)  | External load power supply            |                          | Power supply that is consumed by the load                                        | Maximum load current                                  |
| 7)  | External power supply for output part |                          | Power supply for output circuits                                                 | External power supply for output part current         |
| 8)  | Module power supply (OUT)             | Module power supply (IN) | Power supply for the modules and external devices connected by transition wiring | Depends on the modules and external devices connected |
| 9)  | I/O power supply (OUT)                | I/O power supply (IN)    | Power supply for the modules and external devices connected by transition wiring |                                                       |

\*1 The value of 1) equals to the sum of 3) and 8). The value of 2) equals to the sum of 4), 5), 6), 7), and 9). Design the system so that each value of 1) and 2) equals to or lower than the maximum rated current (7A).

## 7.2.3 Wiring procedures for the one-touch connector

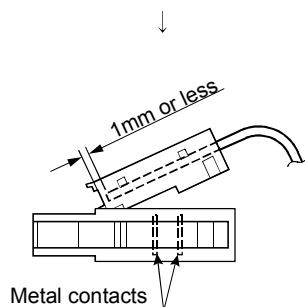
This section describes the wiring procedures for the one-touch connector of the one-touch connector type or connector type compact remote I/O module.



- 1) Check the connector.  
Check that a plug cover is attached to the plug.

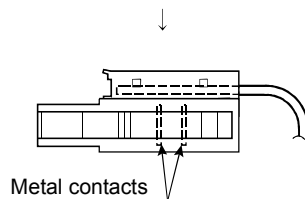
Note: Do not press the plug cover firmly into the plug before a cable is inserted.

Once crimped, the plug can no longer be used.

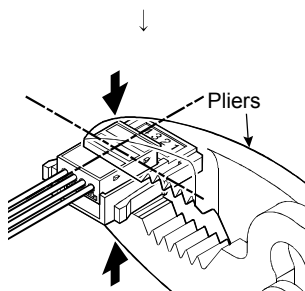


- 2) Insert a cable. (\*1)  
Lift the end of the plug cover and insert a cable until it reaches the other end of the cover (within 1mm from the other end).  
Failure to do so may cause an improper crimping.

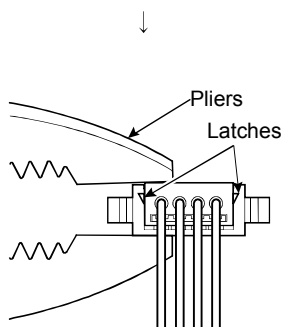
Note: When inserting the cable, prevent the cable from sticking out from the plug cover end.



- 3) Set the plug cover.  
After the cable is inserted, put down the plug cover and set it to the position where the metal contacts fit into the cover.



- 4) Crimp the plug cover into the plug.  
Hold the center of the plug cover with pliers and press it vertically into the plug.



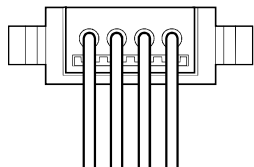
- 5) Press the latches into the plug.  
After crimping, press the latches located at both ends of the plug cover into the plug.  
Check that the cover is fixed to the plug with the latches.

(To the next page)

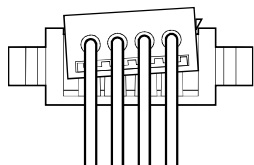


(From the previous page)

[Correct example]



[Wrong example]

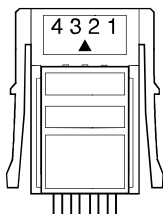


- 6) Check that the plug cover is horizontally-embedded to the plug.  
Check also that the cover is not floating.

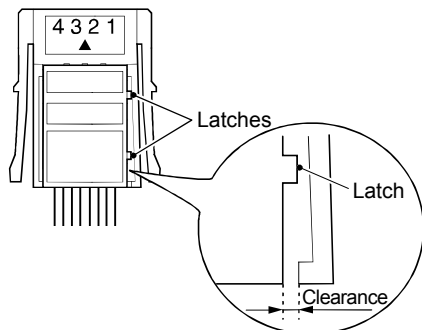
Note: As shown in the wrong example on the left, if the cover is not horizontally-embedded or the cover is floating, it may result in improper crimping.

Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)

[Correct example]



[Wrong example]



- 7) Check the crimped state from the top.  
Check that there is no clearance between the plug and the cover.

Note: As shown in the wrong example on the left, if the latch is not securely engaged, clearance occurs between the plug and the cover.

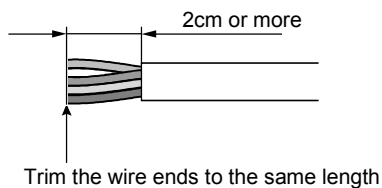
Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)

(Wiring completed)

\*1 When a cabtyre cable is used:

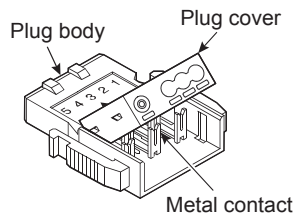
Strip the cable jacket 2cm or more.

If the wire lengths are not even, trim their ends with nippers to the same length.



## 7.2.4 Wiring procedures for the one-touch connector for communication

This section describes the wiring procedures for the one-touch connector for communication used for the connector type compact I/O module.

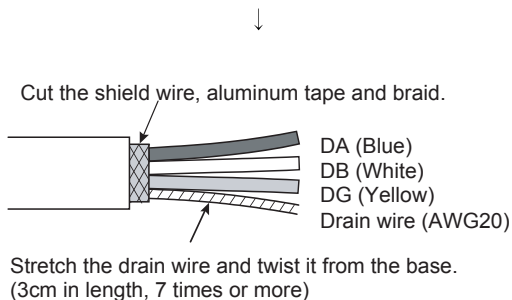


- 1) Check the connector.

Check that a plug cover is attached to the plug.

Note: Do not press the plug cover firmly into the plug before a cable is inserted.

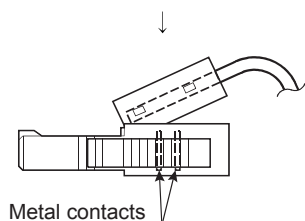
Once crimped, the plug can no longer be used.



- 2) Prepare a communication cable for connection.

Strip the cable jacket 3cm or more and perform the processing described on the left.

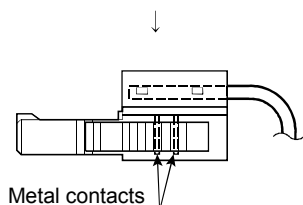
If the wire lengths are not even, trim their ends with nippers to the same length.



- 3) Insert a cable.

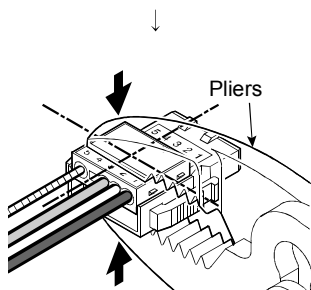
Lift the end of the plug cover and insert a cable until it reaches the other end of the cover (within 1mm from the other end).

Failure to do so may cause an improper crimping.



- 4) Set the plug cover.

After the cable is inserted, put down the plug cover and set it to the position where the metal contacts fit into the cover.

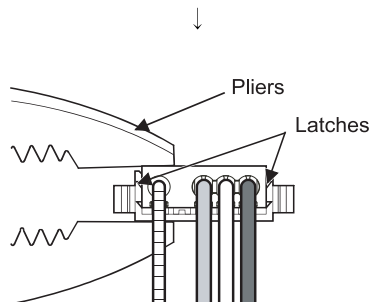


- 5) Crimp the plug cover into the plug.

Hold the center of the plug cover with pliers and press it vertically into the plug.

(To the next page)

(From the previous page)

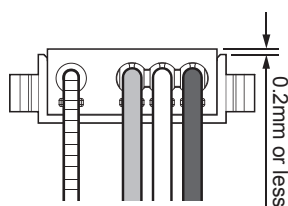


- 6) Press the latches into the plug.

After crimping, press the latches located at both ends of the plug cover into the plug.

Check that the cover is fixed to the plug with the latches.

[Correct example]



- 7) Check the crimped state from the side.

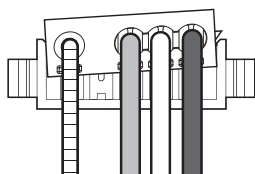
Check that the plug cover is horizontally-embedded to the plug.

Check also that the floating part of the cover is within 0.2mm.

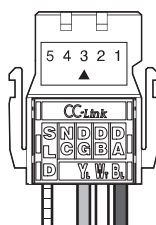
Note: As shown in the wrong example on the left, if the cover is not horizontally-embedded or the floating part is 0.2mm or more, it may result in improper crimping.

Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)

[Wrong example]



[Correct example]



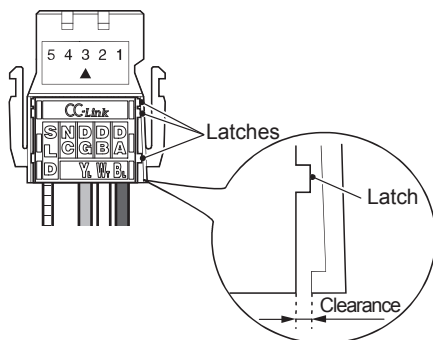
- 8) Check the crimped state from the top.

Check that there is no clearance between the plug and the cover.

Note: As shown in the wrong example on the left, if the latch is not securely engaged, clearance occurs between the plug and the cover.

Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)

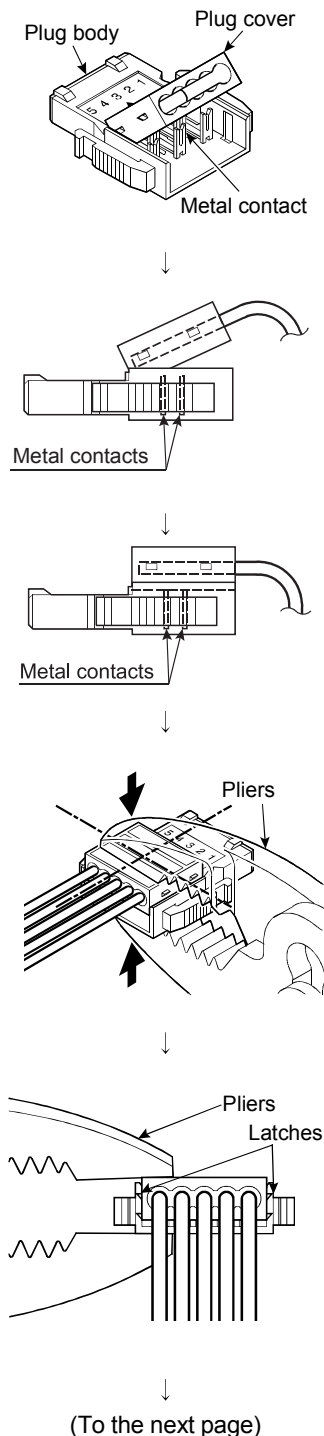
[Wrong example]



(Wiring completed)

## 7.2.5 Wiring procedures for the one-touch connector for power supply and FG

This section describes the wiring procedures for the one-touch connector used for power supply and FG of the connector type compact I/O module.



- 1) Check the connector.

Check that a plug cover is attached to the plug.

Note: Do not press the plug cover firmly into the plug before a cable is inserted.

Once crimped, the plug can no longer be used.

- 2) Insert a cable. (\*1)

Lift the end of the plug cover and insert a cable until it reaches the other end of the cover (within 1mm from the other end).

Failure to do so may cause an improper crimping.

Note: Use cables applicable to the module.

- 3) Set the plug cover.

After the cable is inserted, put down the plug cover and set it to the position where the metal contacts fit into the cover.

- 4) Crimp the plug cover into the plug.

Hold the center of the plug cover with pliers and press it vertically into the plug.

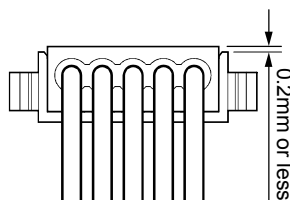
- 5) Press the latches into the plug.

After crimping, press the latches located at both ends of the plug cover into the plug.

Check that the cover is fixed to the plug with the latches.

(From the previous page)

[Correct example]



6) Check the crimped state from the side.

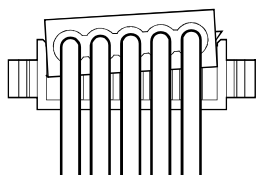
Check that the plug cover is horizontally-embedded to the plug.

Check also that the floating part of the cover is within 0.2mm.

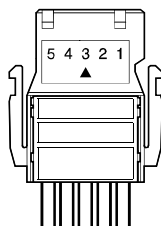
Note: As shown in the wrong example on the left, if the cover is not horizontally-embedded or the floating part is 0.2mm or more, it may result in improper crimping.

Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)

[Wrong example]



[Correct example]



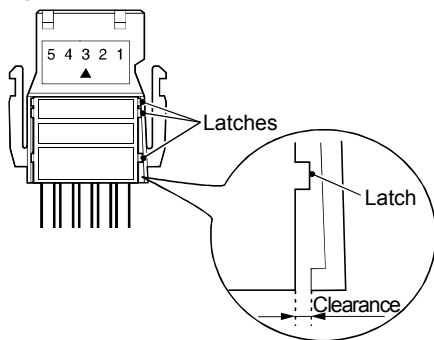
7) Check the crimped state from the top.

Check that there is no clearance between the plug and the cover.

Note: As shown in the wrong example on the left, if the latch is not securely engaged, clearance occurs between the plug and the cover.

Press the plug cover firmly into the plug with pliers. (Refer to the correct example.)

[Wrong example]

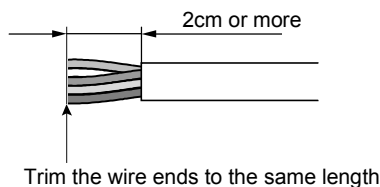


(Wiring completed)

\*1 When a cabtyre cable is used:

Strip the cable jacket 2cm or more.

If the wire lengths are not even, trim their ends with nippers to the same length.



### 7.3 Handling of the Waterproof-type Remote I/O Module

#### 7.3.1 List of dustproof and waterproof caps

The following table lists the model names of dustproof cap and waterproof cap applicable to the CC-Link system waterproof-type remote I/O module.

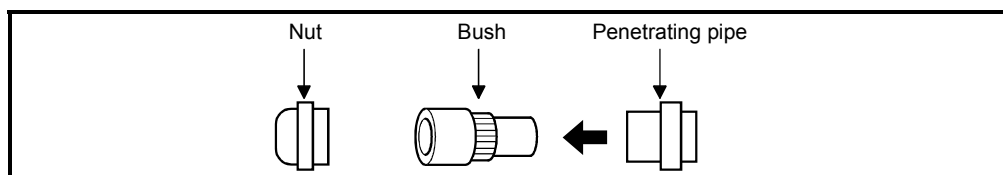
|                   | Mitsubishi model name | Specifications            |
|-------------------|-----------------------|---------------------------|
| Dustproof cap *1  | A6CAP-DC1             | —                         |
| Waterproof cap *1 | A6CAP-WP1             | Protection of degree IP67 |

\*1 A pack of A6CAP- □□1 (manufactured by Mitsubishi) includes 20 pieces.

#### 7.3.2 Waterproof plug attachment procedure

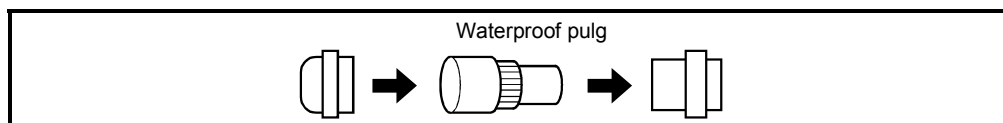
The attachment procedure for the waterproof plug supplied with the AJ65SBTW4-16□ is shown below. In order to prevent water leakage, attach a waterproof plug to the penetrating pipe for the transmission and module power-supply lines in the following way.

- 1) Remove the nut and bushing from the penetrating pipe attached to the module.



- 2) Insert the waterproof plug into the penetrating pipe and secure it by tightening the nut.

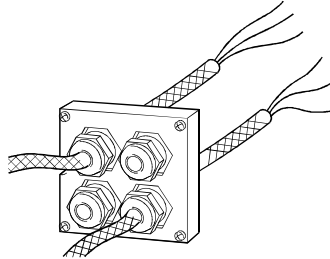
Tightening torque: 0.99 to 1.48N·m



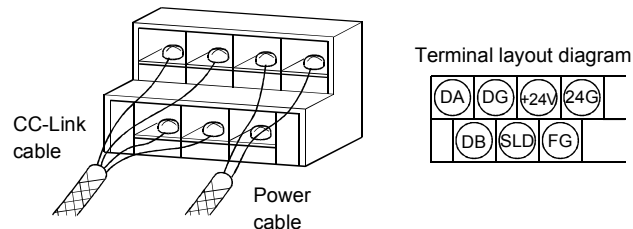
## 7.3.3 Wiring procedure for the terminal block

This section describes the wiring procedure of a terminal block to the waterproof-type remote I/O module.

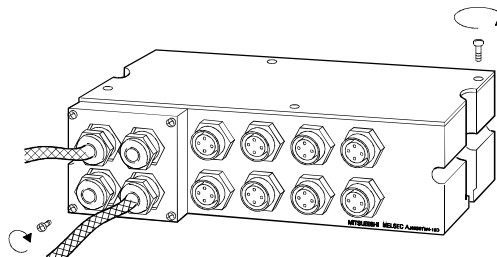
- 1) Remove the module front cover, and pass the cables through the through pipe for the transmission and module power-supply lines.



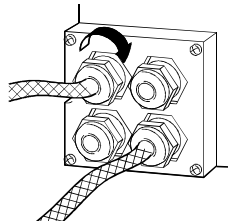
- 2) Open the module top cover and remove the terminal block, then perform wiring to the terminal block.



- 3) Secure the terminal block using screws, then fasten the module front and top covers using screws.



- 4) Tighten the nut\* on the through pipe for the transmission and module power-supply lines.

**POINT**

- Always install a waterproof plug to the unused through pipe for the transmission and module power-supply lines. (Refer to Section 7.3.2.)
- When wiring the transmission and module power-supply lines, please take care not to apply force in excess of 0.39N·m excessive force to the wiring at the inlet.
- In the event of the ambient temperature exceeding 56 °C after wiring the unit, make sure to re-tighten the nuts.

## 7.4 Handling of the Low Profile Waterproof Type Remote I/O Module

### 7.4.1 List of waterproof caps

The model name of the waterproof cap applicable to the CC-Link system low profile waterproof type remote I/O module (AJ65FBTA□-16□) is shown below. The following table lists the model names of waterproof cap applicable to the CC-Link system low profile waterproof type remote I/O module (AJ65FBTA□-16□).

|                                                | Mitsubishi Product<br>Model Name | Use                                      |
|------------------------------------------------|----------------------------------|------------------------------------------|
| Waterproof cap<br>(20 pieces, Sold separately) | A6CAP-WP2                        | For LINK OUT connector and I/O connector |

#### POINT

- The waterproof cap (A6CAP-WP1) cannot be used.

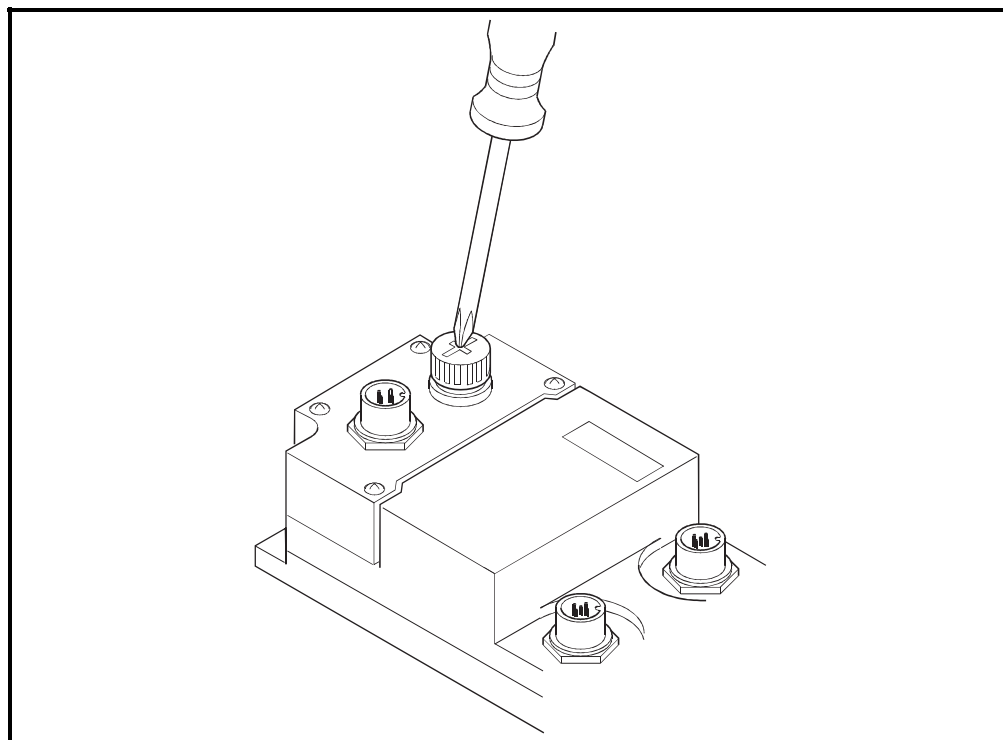
### 7.4.2 Waterproof cap installation method

The installation method for the waterproof caps packed with the product is shown below.

In order to prevent water penetration, install the waterproof caps on the unused Link Out side connectors and I/O connectors using the following method.

- 1) Insert the waterproof cap in the empty connector on the main module, then tighten it.

Tightening Torque Range: 0.29 to 0.34N·m





## 7.5 Connectors and Tools Used for Connecting the FCN Connector Cables

**WARNING**

- When connecting the connector cables by crimp-contact, pressure-displacement or soldering, make sure to use the tools listed in the table below. Attach the connectors securely to the module.

Three types of 40-pin connectors are available for the AJ65□BTCTF1-32□ and the AJ65□BTCTF1J-32□; they are soldering type, pressure-displacement type and crimp-contact type.

Please purchase the required 40-pin connector, and either pressure-displacement or crimp-contact type tool according to the listing below.

## (1) Connector types

| Type                                                      | Model name |
|-----------------------------------------------------------|------------|
| Soldering type connector (Straight-out type)              | A6CON1     |
| Crimp-contact type connector (Straight-out type)          | A6CON2     |
| Pressure-displacement type connector (Flat cable type)    | A6CON3     |
| Soldering type connector (Straight-out/diagonal-out type) | A6CON4     |

## (2) Crimp-contact and pressure-displacement type tools

| Type                       | Model name                         | Cable size               | Manufacturer              |
|----------------------------|------------------------------------|--------------------------|---------------------------|
| Crimp-contact tool         | FCN-363T-T005/H                    | 28 to 24 AWG             | FUJITSU COMPONENT LIMITED |
| Pressure-displacement tool | FCN-367T-T012/H<br>(locator plate) | 28 AWG<br>(strand cable) |                           |
|                            | FCN-707T-T001/H<br>(cable cutter)  | 30 AWG<br>(single cable) |                           |
|                            | FCN-707T-T101/H<br>(hand press)    |                          |                           |

### 7.6 Attaching and Removing the Protective Cover for the Compact Remote I/O Module

Covering the front of CC-Link system compact remote I/O module with a protective cover can prevent the following accidents:

- Improper contact to the terminal block or connector.
- Module malfunction resulted from connector drop.

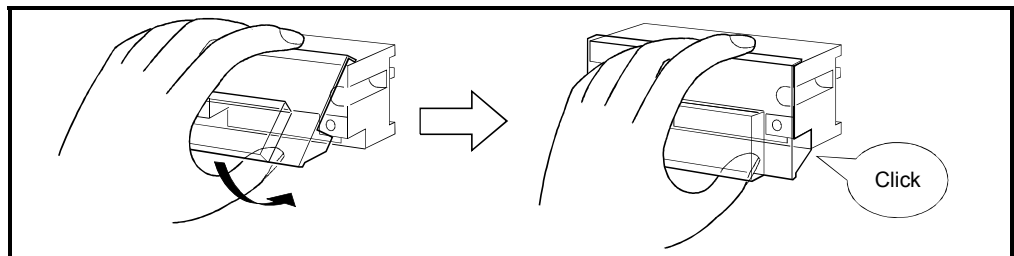
For the model name of the protective cover for the compact remote I/O module, see Section 1.5.

Follow the procedure illustrated below to mount the protective cover on the module.

#### (1) In the case of A6CVR-8/16/32

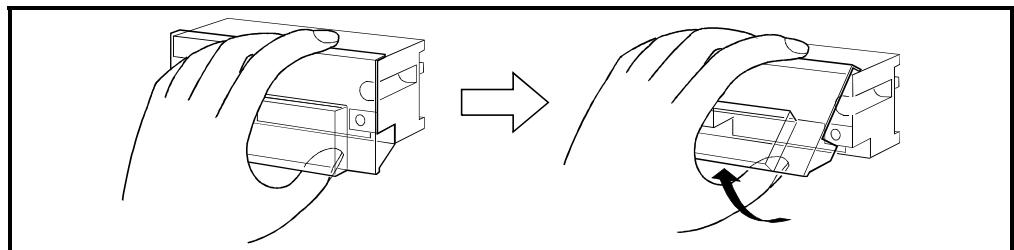
##### <How to mount>

Hook the top of the protective cover onto the top of the remote I/O module, then push the lower part of the cover toward the module until you hear a click sound.



##### <How to remove>

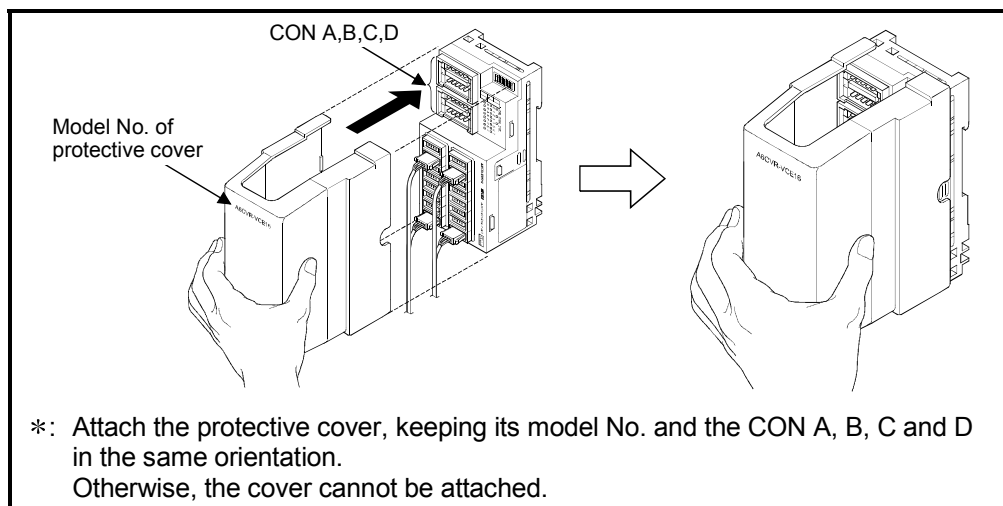
Place your thumb under the protective cover and pull it upwards.



## (2) In the case of A6CVR-VCE8/16

## &lt;How to mount&gt;

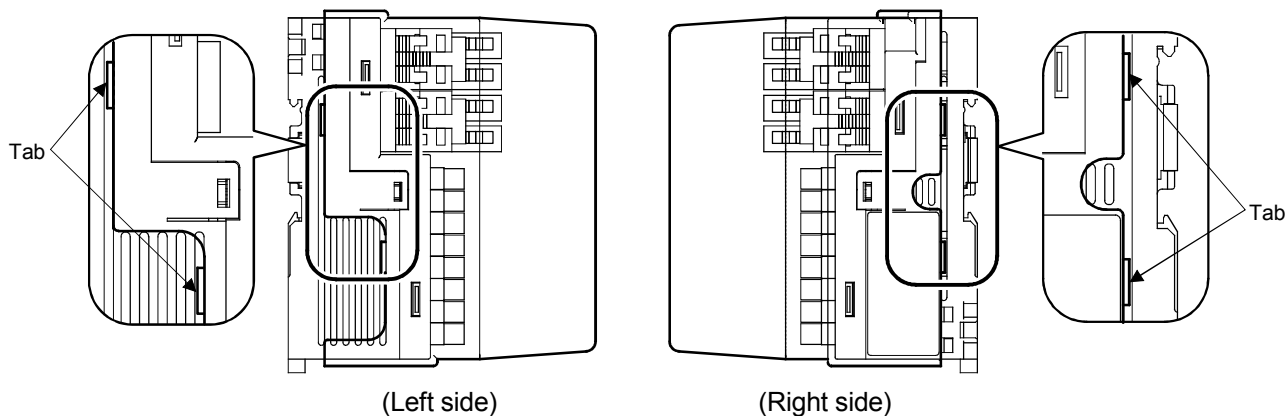
Confirm the orientation of the protective cover as shown in the diagram below.  
Then, attach the cover straight to the module as shown by the arrow and push in securely until it stops.



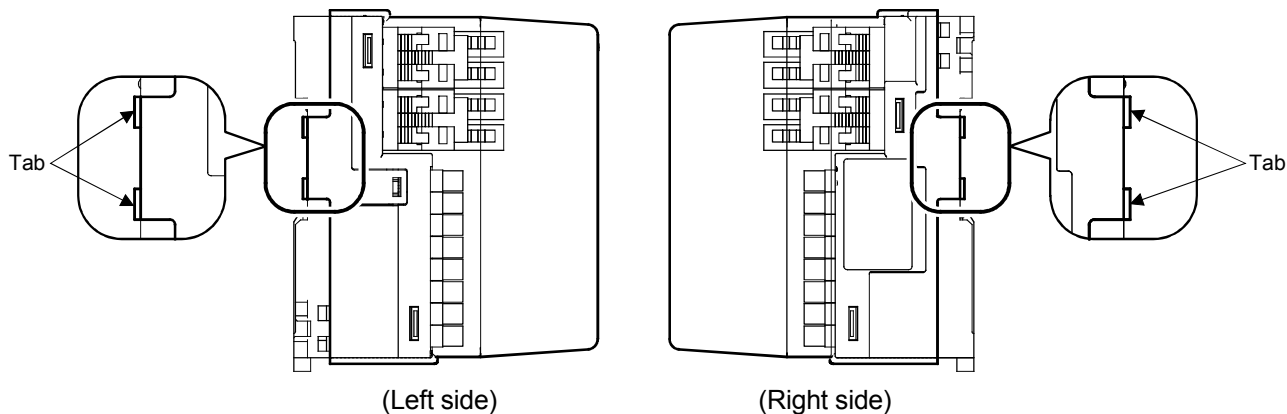
Securely fix tabs of the protective cover to the groove of the module as shown below.

Note that the fixing tab positions vary with the protective cover used.

## In the case of A6CVR-VCE16

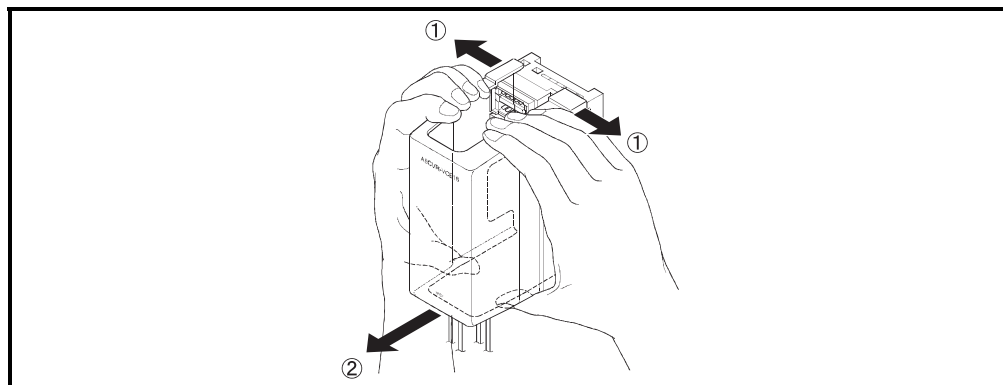


## In the case of A6CVR-VCE8



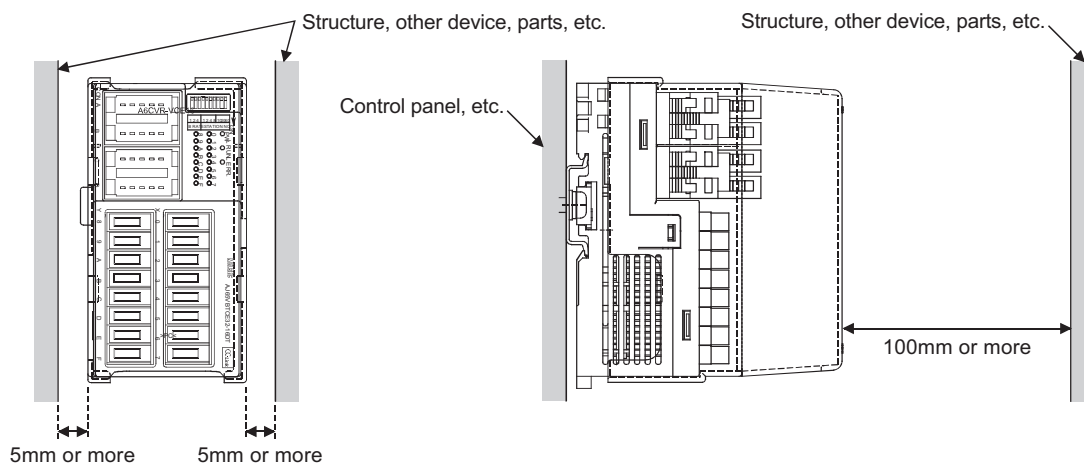
## &lt;How to remove&gt;

Extend the width of protective cover slightly as shown by the arrow 1). Then, pull it out vertically from the module as shown by the arrow 2).



## POINT

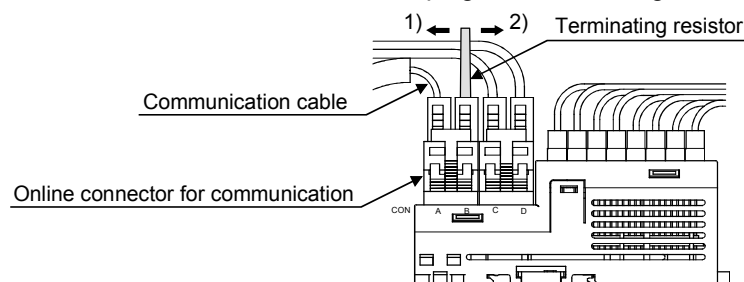
- (1) When attaching the protective cover, ensure the space of 50mm or more between the target module and the modules on the right and left sides. Also, ensure the space of 100mm or more over the upper part of the module, so that the cover can be pulled upward.



- (2) Fix the wiring with a clamp or similar parts. Failure to do so may apply force to the protective cover, resulting in it falling from the module. In addition, the wiring cable may be damaged.
- (3) When attaching a one-touch connector plug with terminating resistor (A6CON-TR11(N)) together with an online connector for communication (A6CON-LJ5P), follow the procedure provided below.

Failure to do so may cause the terminating resistor, protective cover and communication cable to interfere with each other.

- Tilt the terminating resistor toward 1) or 2) as shown in the diagram below, and then attach the protective cover.
- Connect the one-touch connector plug with terminating resistor to CON B.



### 7.7 Connection Method of CC-Link Dedicated Cable

This section describes how to connect the compact remote I/O module to the master module using CC-Link dedicated cables.



#### WARNING

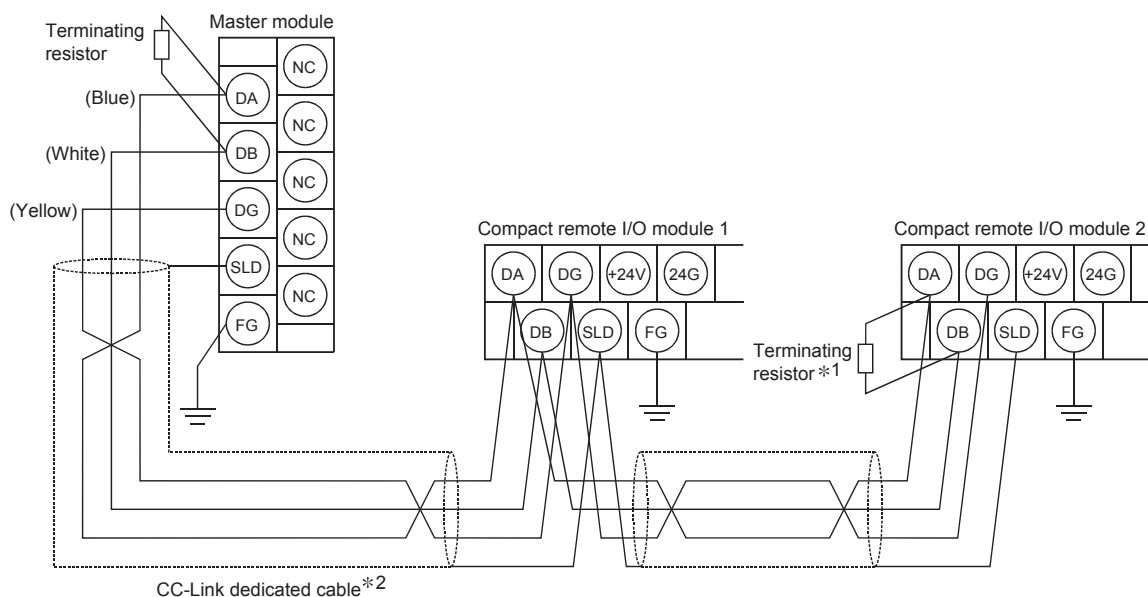
- Shut off the external power supply (all phases) used in the system before wiring. Failure to do so may result in electric shock or damage to the product.
- After wiring, attach the included terminal cover to the module before turning it on for operation. Failure to do so may result in electric shock.
- Shut off the external power supply (all phases) used in the system before cleaning the module or retightening the terminal block screw. Failure to do so may cause the module to fail or malfunction.



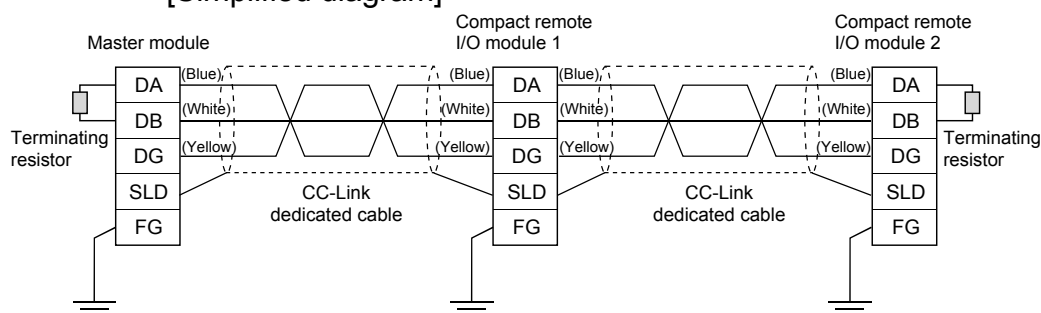
#### CAUTION

- Do not install the control lines or communication cables together with the main circuit lines or power cables. Keep a distance of 100mm (3.9 inches) or more between them. Failure to do so may result in malfunction due to noise.
- Individually ground the FG terminal of the programmable controller with a ground resistance of 100Ω or less. Failure to do so may result in electric shock or malfunction.
- Tighten any unused terminal screws within the specified torque range (0.42 to 0.50N•m). Failure to do so may cause a short circuit due to contact with a solderless terminal.
- Use applicable solderless terminals and tighten them within the specified torque range. If any solderless spade terminal is used, it may be disconnected when the terminal screw comes loose, resulting in failure.
- Check the rated voltage and terminal layout before wiring to the module, and connect the cables correctly. Connecting a power supply with a different voltage rating or incorrect wiring may cause a fire or failure.
- Securely connect the cable connectors. Poor contact may cause malfunction.
- Place the cables in a duct or clamp them. If not, dangling cable may swing or inadvertently be pulled, resulting in damage to the module or cables or malfunction due to poor contact.
- Do not install the control lines or communication cables together with the main circuit lines or power cables. Failure to do so may result in malfunction due to noise.
- When disconnecting the cable from the module, do not pull the cable by the cable part. For the cable with connector, hold the connector part of the cable. For the cable without connector, loosen the screw first and remove it. Pulling the cable connected to the module may result in malfunction or damage to the module or cable.

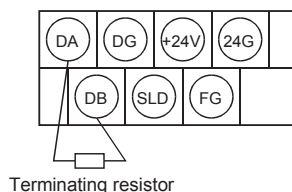
(1) The following figure shows how to connect compact remote I/O modules to a master module.



[Simplified diagram]



\*1 Connect a terminating resistor to the compact type remote I/O module used as a terminal station as shown below. (Terminating resistors are provided with a master module.)



\*2 Use CC-Link dedicated cables in the CC-Link system.

Performance of the CC-Link system cannot be guaranteed if any cables other than the CC-Link dedicated cables are used.

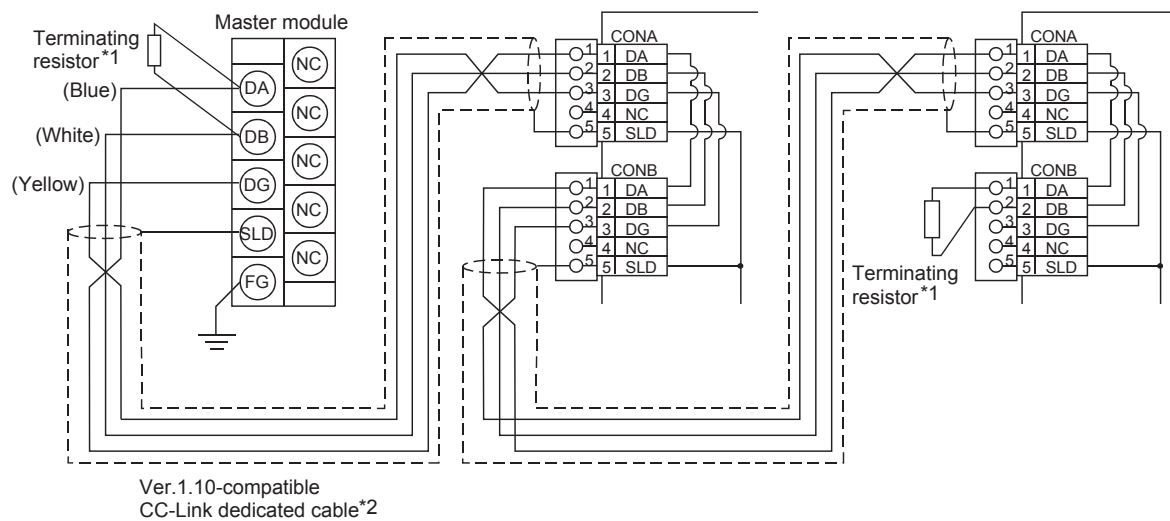
For the specifications and any inquiries on the CC-Link dedicated cables, refer to the following:

CC-Link Partner Association Website: [www.cc-link.org](http://www.cc-link.org)

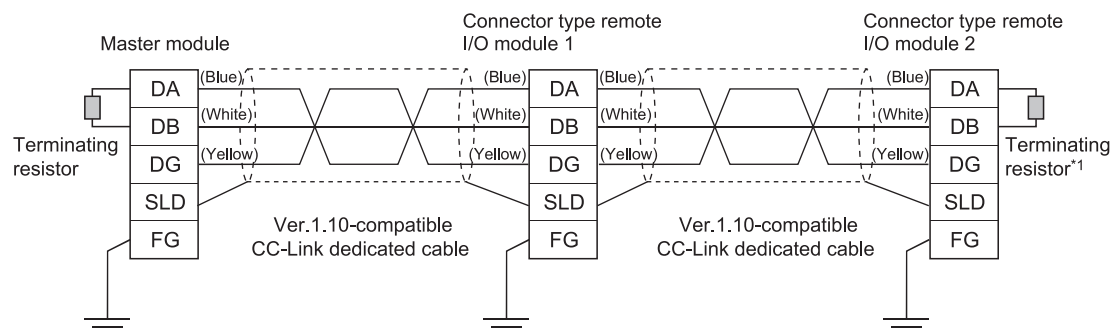
#### POINT

Compact remote I/O modules with an input response of 0.2ms are more susceptible to noise interference than other modules. Keep the wiring of the I/O module away from power cables as much as possible.

(2) The following figure shows how to connect connector type remote I/O modules to a master module.



[Simplified diagram]



\*1 When a connector type remote I/O module is used as a terminal station, connect a one-touch connector plug with terminating resistor (A6CON-TR11(N)).

\*2 Use CC-Link dedicated cables in the CC-Link system.

Performance of the CC-Link system cannot be guaranteed if any cables other than the CC-Link dedicated cables are used.

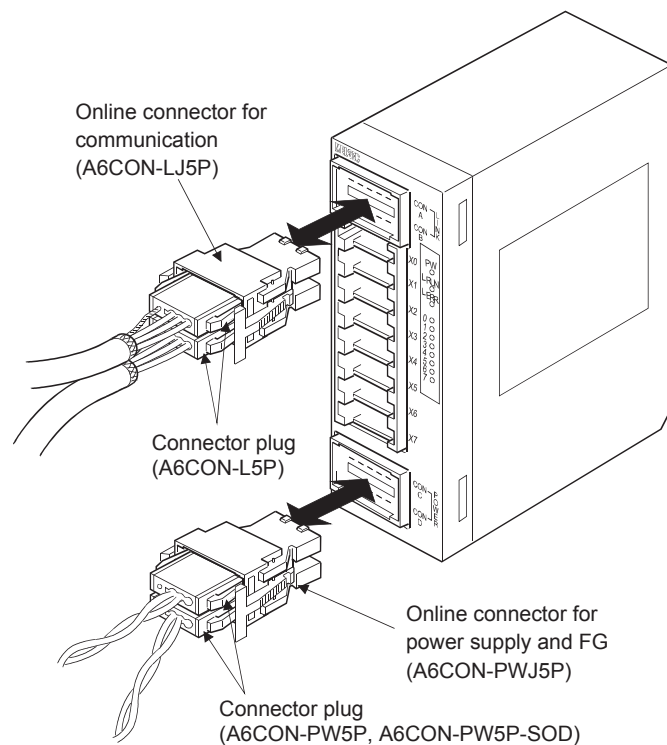
For the specifications and any inquiries on the CC-Link dedicated cables, refer to the following:

CC-Link Partner Association Website: [www.cc-link.org](http://www.cc-link.org)

#### POINT

Compact remote I/O modules with an input response of 0.2ms are more susceptible to noise interference than other modules. Keep the wiring of the I/O module away from power cables as much as possible.

(3) The following figure shows how to connect a one-touch connector and online connector to the remote I/O module.



#### POINT

- For a one-touch connector for communication, use Ver.1.10-compatible CC-Link dedicated cables (FANC-110SBH, FA-CBL200PSBH, or CS-110). Ver.1.10-compatible CC-Link dedicated cables other than those above, CC-Link dedicated cables, and CC-Link dedicated high-performance cables are not supported.
- To connect or remove a one-touch connector to/from an online connector, refer to the manual included with the online connector.



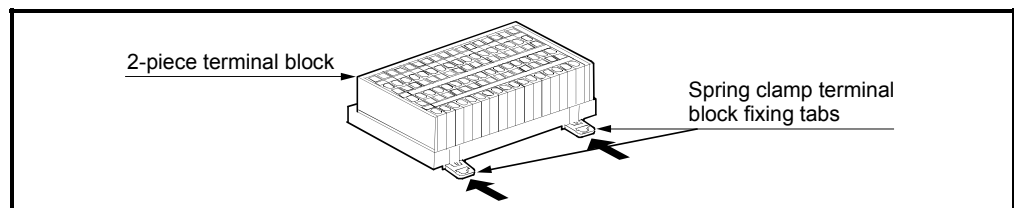
## 7.8 Handling of Spring Clamp Terminal Block Type Remote I/O Module

## 7.8.1 Installation and removal of the spring clamp terminal block

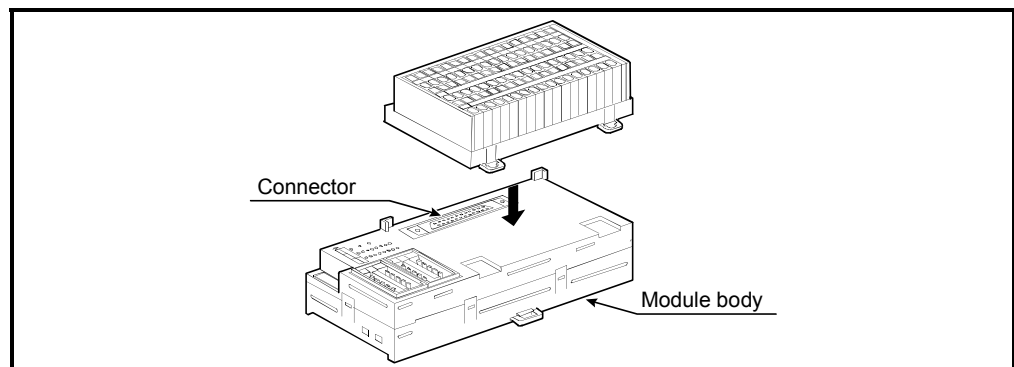
## (1) Installing the spring clamp terminal block

How to install a 2-piece spring clamp terminal block is shown below.  
Secure the terminal block part using the following method. Incomplete installation may cause fall, short circuit or malfunction.

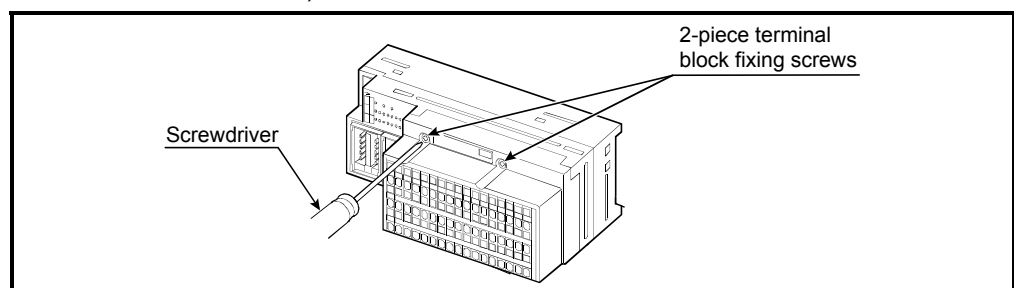
- 1) Push the spring clamp terminal block fixing tabs of the 2-piece terminal block in the arrow direction until a click can be heard.



- 2) Connect the connector (female) of the 2-piece terminal block to the connector (male) of the module body and press it until a click can be heard. Check that both of two fixing tabs are inserted completely.



- 3) Tighten the 2-piece terminal block fixing screws. (Tightening torque range: 0.34 to 0.46N·m)



## (2) Removing the spring clamp terminal block

Remove the spring clamp terminal block in reverse order of the above installation procedure.

- 1) Loosen the 2-piece terminal block fixing screws.
- 2) Pull out the spring clamp terminal block fixing tabs.
- 3) Lift the 2-piece terminal block to remove it from the main body.

### 7.8.2 Procedure for wiring the spring clamp terminal block

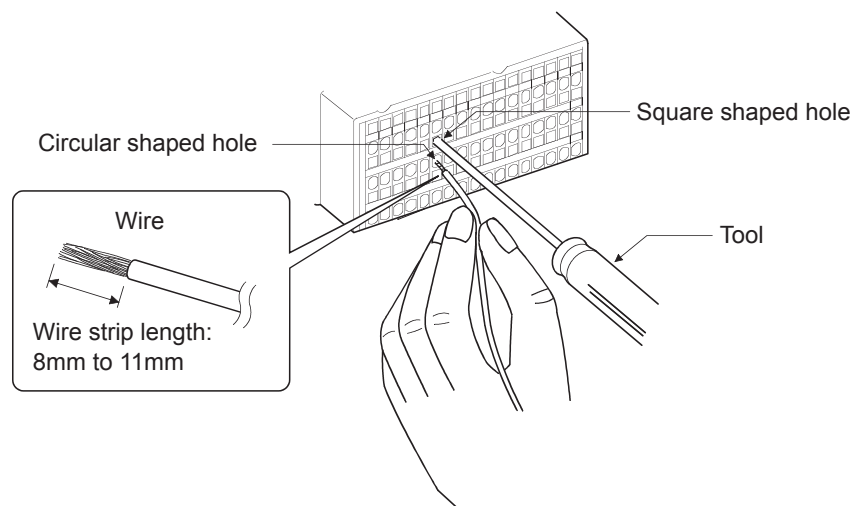
This section describes the procedure for connecting a cable to the spring clamp terminal block remote I/O module.

#### (1) Precaution for connecting or disconnecting cables

- (a) Insert only one wire into the circular shaped hole of the spring clamp terminal block. Inserting two or more wires may result in a poor contact to the terminal part.
- (b) Strip the wire according to the specification. If the wire strip length is too long, the exposed conductive part may cause electric shock or short circuit. If the wire strip length is too short, it may result in a poor contact to the spring clamp terminal part.
- (c) When using a spring clamp terminal block tool, follow the instruction below. Failure to do so may cause damage of the spring clamp terminal part or the terminal block resin part.
  - Use a dedicated tool for a spring clamp terminal block.
  - Do not insert the wire or the bar solderless terminal before inserting the tool into the square shaped hole.
  - Insert the tool vertically into the hole.

#### (2) Connecting a cable

- (a) Insert the tool vertically all the way inside the square shaped hole of the remote I/O module.
- (b) Insert the wire or the bar solderless terminal into the circular shaped hole, and remove the tool from the hole.
- (c) Check that the wire or the bar solderless terminal is firmly clamped by pulling it lightly.



#### (3) Disconnecting a cable

- (a) Insert the tool vertically all the way inside the square shaped hole of the remote I/O module.
- (b) Pull the wire or the bar solderless terminal out of the hole.

## (4) Recommended product list

| Product name                                    | Model name | Applicable wire size       | Contact                                      |
|-------------------------------------------------|------------|----------------------------|----------------------------------------------|
| Tool (dedicated to spring clamp terminal block) | KD-5339    | —                          | Mitsubishi Electric System Service Co., Ltd. |
| Bar solderless terminal *1                      | TE 0.5     | 0.5mm <sup>2</sup>         | NICHIFU TERMINAL MFG. Co., Ltd.              |
|                                                 | TE 0.75    | 0.75mm <sup>2</sup>        |                                              |
|                                                 | TE 1       | 0.9 to 1.0mm <sup>2</sup>  |                                              |
|                                                 | TE 1.5     | 1.25 to 1.5mm <sup>2</sup> |                                              |
| Dedicated bar solderless terminal tool          | NH79       | —                          |                                              |

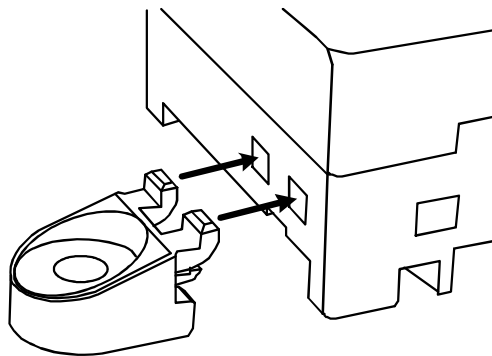
\*1 Use this product when doing the terminal treatment of the wire and inserting it into the spring clamp terminal block.

## 7.9 Attaching Mounting Brackets to the Module

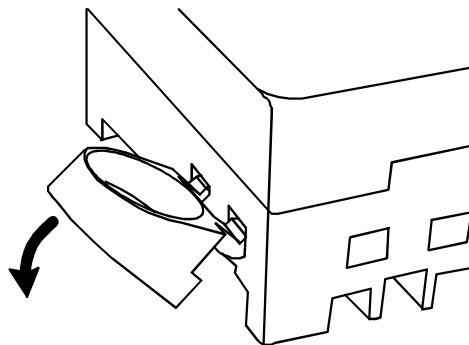
### 7.9.1 Attachment of mounting brackets

This section describes the procedures for directly installing the AJ65VBTS□-□□□ or AJ65VBTC□-□□□ to a control panel using mounting brackets and screws. If the module is not fixed securely, it can cause drop of the module, short circuit, or malfunction.

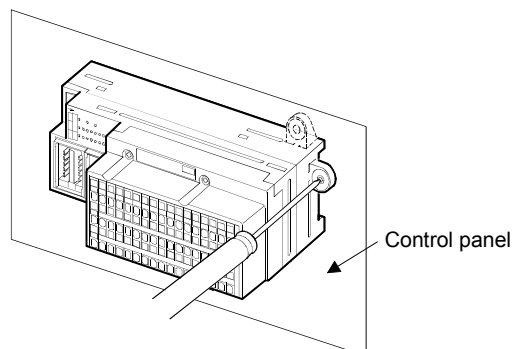
- (1) Align the projections of a mounting bracket with the corresponding slots of the module.



- (2) Obliquely insert the projections to the slots, and press down the mounting bracket in the direction of an arrow until it clicks.



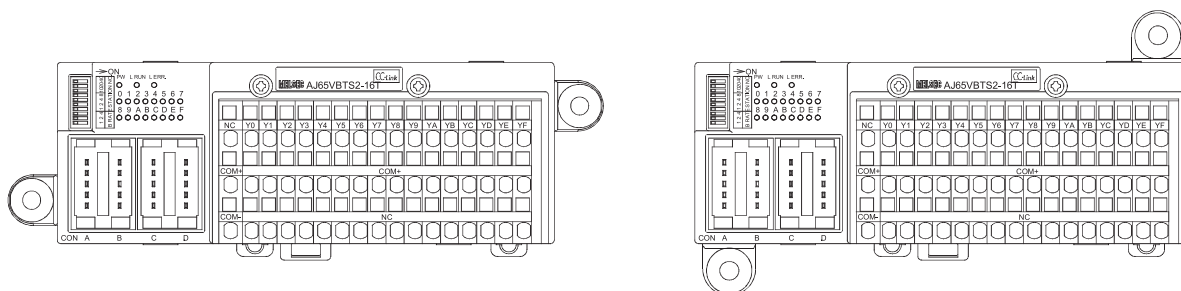
- (3) Screw the mounting bracket to a control panel. (Tightening torque range: 0.82 to 1.11N·m)



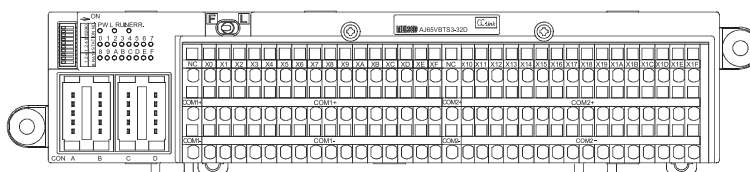
## 7.9.2 Precautions for attaching mounting brackets

The mounting brackets can be attached differently depending on the modules.  
Attach them to two positions.

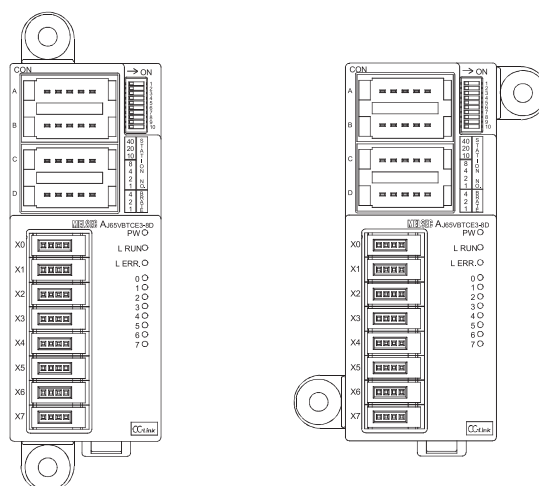
- (1) AJ65VBTS□-16□ The mounting brackets can be attached as shown below (two different ways).



- (2) AJ65VBTS□-32□ The mounting brackets can be attached as shown below (only one way).

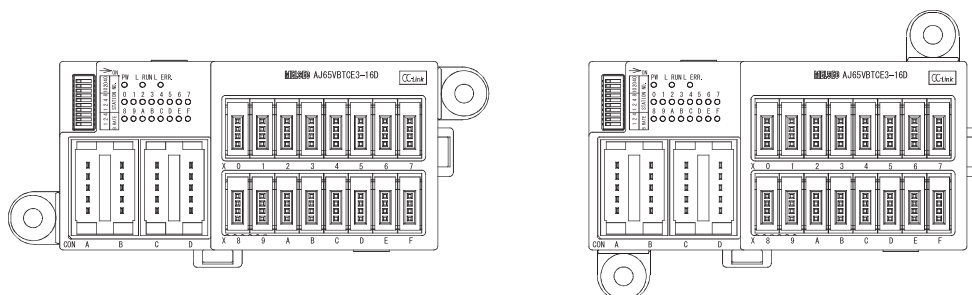


- (3) AJ65VBTC□-8□ The mounting brackets can be attached as shown below (two different ways).



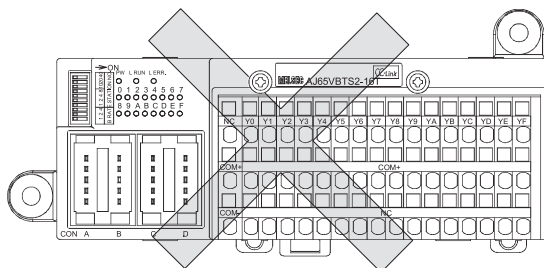
## (4) AJ65VBTCE□-16□, AJ65VBTCE□-32□

The mounting brackets can be attached as shown below (two different ways).



## POINT

- Do not attach the mounting brackets in any ways other than those described above.



## 7.10 Mounting the DIN Rail Adapter

### 7.10.1 Specifications

The following table shows the specifications of the DIN rail adapter.

| Item \ Model                                     | A6DIN1C                                                                             |
|--------------------------------------------------|-------------------------------------------------------------------------------------|
| Mountable module                                 | AJ65DBTB1-32D, AJ65DBTB1-32T1,<br>AJ65DBTB1-32R, AJ65DBTB1-32DT1,<br>AJ65DBTB1-32DR |
| External dimensions                              | 174mm (6.85 inches) × 68mm (2.68 inches) ×<br>10mm (0.39 inches)                    |
| Weight                                           | 0.05kg                                                                              |
| Applicable DIN rail type (conforms to IEC 60715) | TH35-7.5Fe, TH35-7.5Al, TH35-15Fe                                                   |

### 7.10.2 Handling precautions

(1) The DIN rail adapter is made from resin. Do not drop or apply strong shock to the adapter.

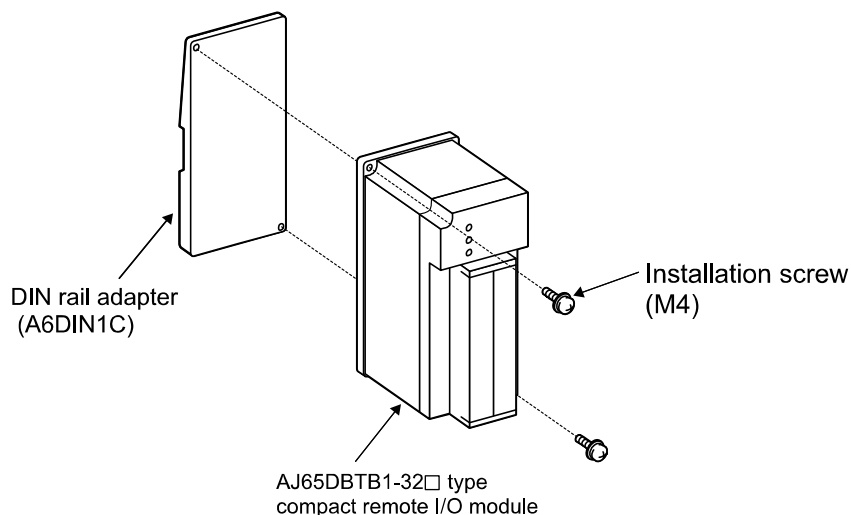
(2) Mounting pitch

When installing a DIN rail to a control panel, keep mounting pitches 200mm (7.87 inches) or less.

### 7.10.3 Attaching the DIN rail adapter to the module

Use two M4 screws (length: 10mm (0.39 inches)) to attach the DIN rail adapter to the AJ65DBTB1-32 □ type compact remote I/O module.

The tightening torque range is 0.78 to 1.18N•m.



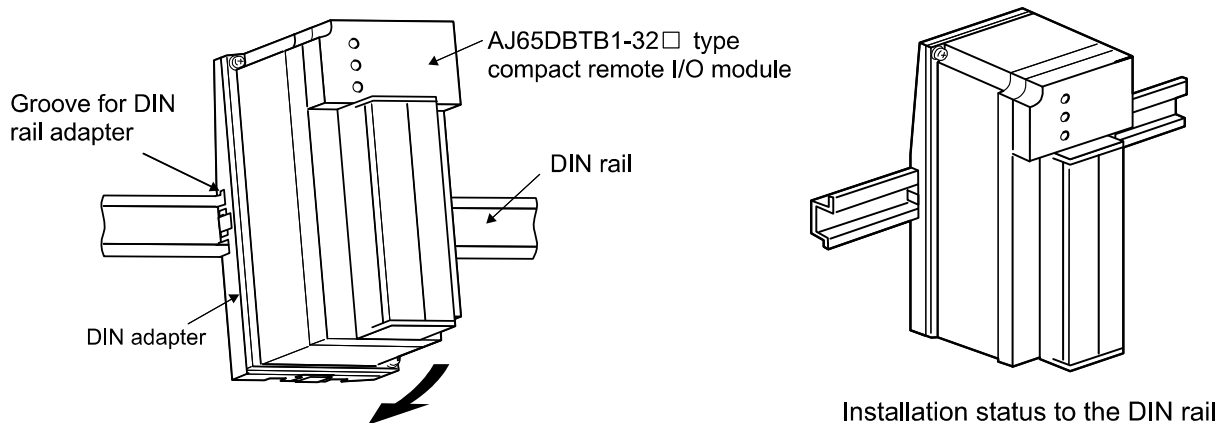
## 7.10.4 Mounting the module to a DIN rail

This section describes how to mount/remove the module to/from a DIN rail.

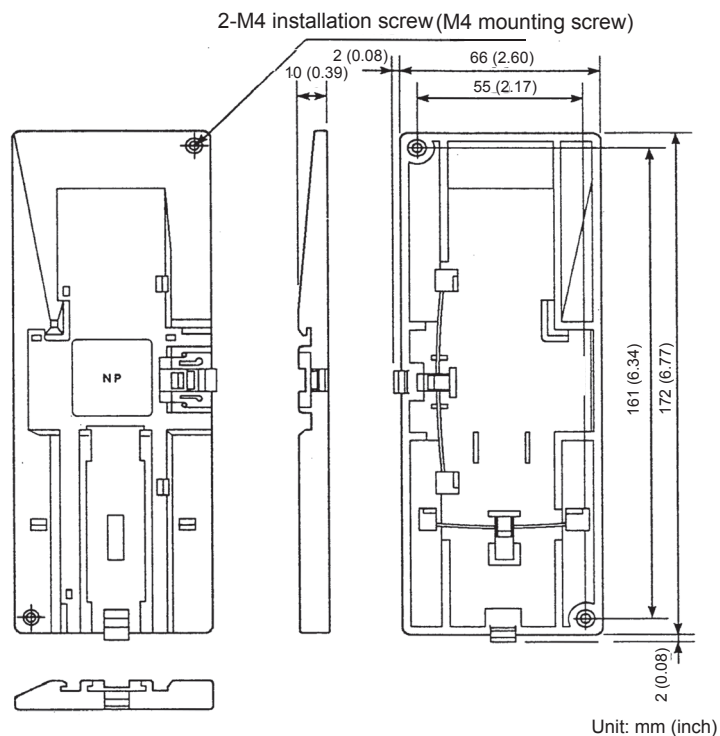
## (1) Mounting to a DIN rail

Mount the module with the DIN rail adapter attached to a DIN rail as follows.

- (a) Insert the groove for DIN rail adapter into the topside of the DIN rail.
- (b) Fix the module by pressing it against the DIN rail.



- (c) When multiple DIN rail adapters are installed on the DIN rail, even though the gaps among DIN rail adapters are filled, the spaces of 4mm (0.16 inches) are left among the modules.

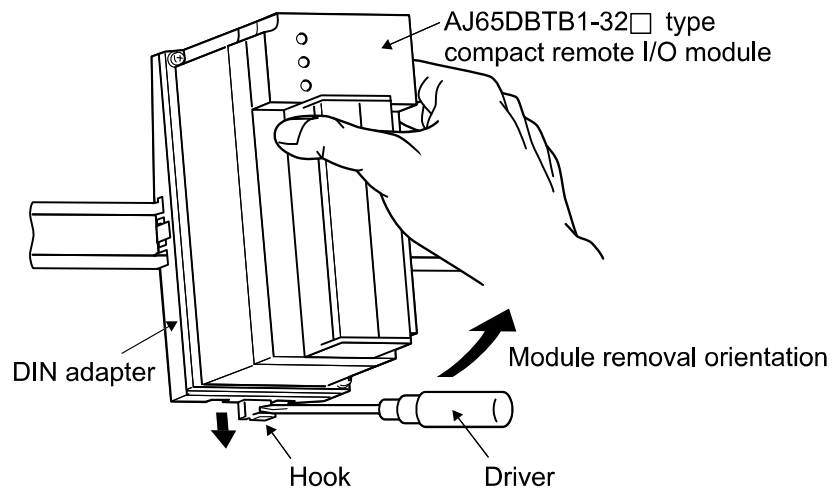




## (2) Removing the module from a DIN rail

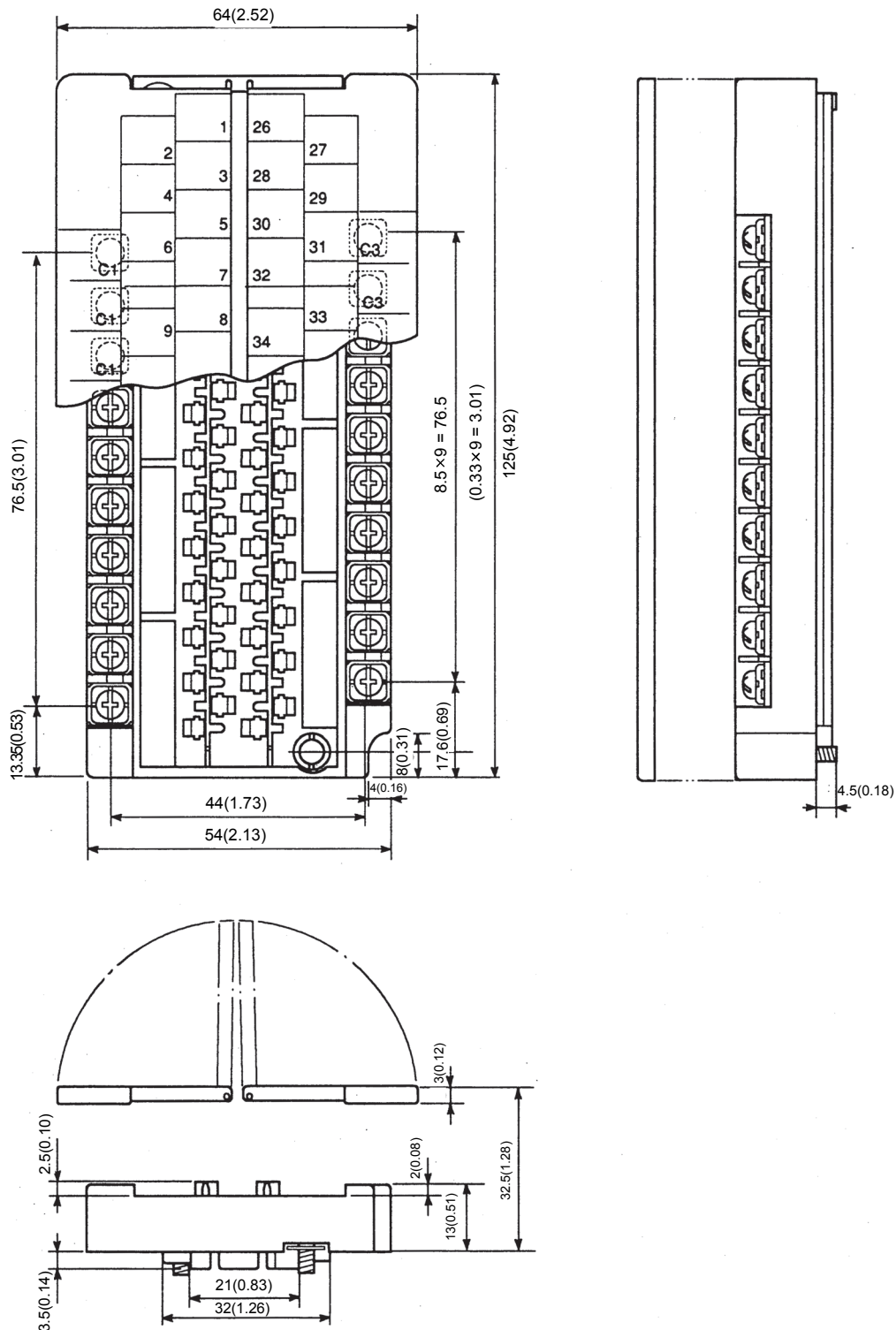
Remove the module from a DIN rail as follows.

- (a) Pull the hook at the bottom of the DIN adapter downward with flathead screwdriver (6 × 100).
- (b) With the hook pulled out, pull the module forward and remove the module from the DIN rail.



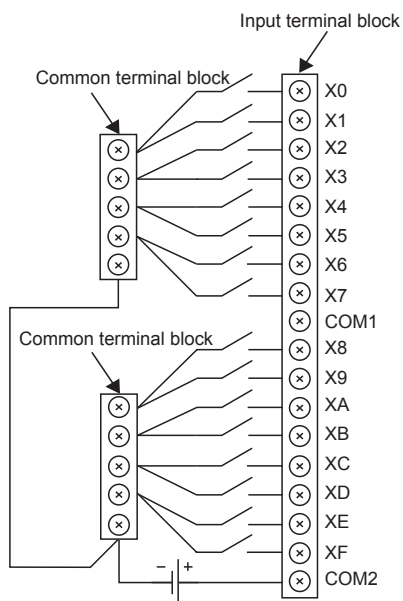
## 7.11 Common Terminal Block

| Item                | Model                                                                            |
|---------------------|----------------------------------------------------------------------------------|
|                     | A2CCOM-TB                                                                        |
| Mountable module    | AJ65DBTB1-32D, AJ65DBTB1-32T1, AJ65DBTB1-32R,<br>AJ65DBTB1-32DT1, AJ65DBTB1-32DR |
| External dimensions | 125mm (4.92 inches) × 64mm (2.52 inches) × 13mm (0.51 inches)                    |
| Weight              | 0.12kg                                                                           |

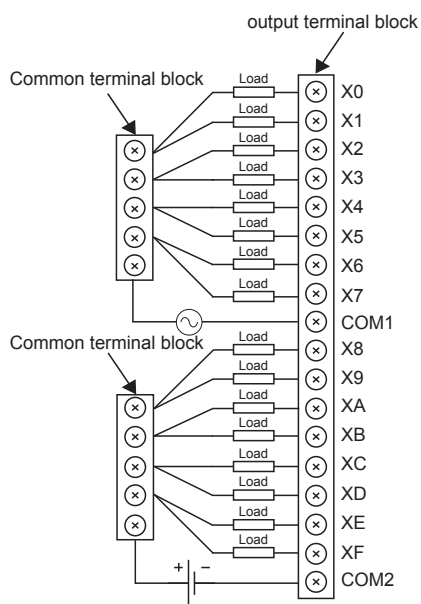


## (1) Usage example of common terminal block

## (a) Example of usage for input module, AJ65DBTB1-32D



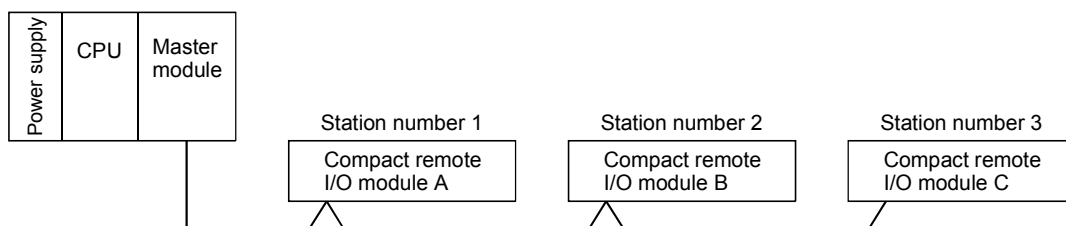
## (b) Example of usage for output module, AJ65DBTB1-32R



## 8 TROUBLESHOOTING

## 8.1 Verifying Errors from LED Status

The following table lists causes and corrective actions for errors indicated by LEDs on the compact remote I/O module when the SW, M/S and PRM LEDs are all off (i.e. the master module is set properly) in the system configuration example shown below.



| LED status                                 |                             |                             |                             | Cause                                                                                                                                                                                                             | Corrective action                                                                                               |
|--------------------------------------------|-----------------------------|-----------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Master module                              | Remote I/O module           |                             |                             |                                                                                                                                                                                                                   |                                                                                                                 |
|                                            | A                           | B                           | C                           |                                                                                                                                                                                                                   |                                                                                                                 |
| TIME ○<br>LINE ○<br>or<br>TIME ●<br>LINE ● | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ○ | Normal                                                                                                                                                                                                            | —                                                                                                               |
|                                            | PW ○<br>L RUN ○<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ○ | Since the LEDs on the compact remote I/O module A are all off, the 24V power is not supplied or voltage is low.                                                                                                   | Check the voltage of the 24V power supply, and supply the proper power to the compact remote I/O module.        |
|                                            | PW *<br>L RUN *<br>L ERR. * | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ○ | The compact remote I/O module A is malfunctioning and the LEDs are unstable (all lights are off, in many cases).                                                                                                  | Exchange the compact remote I/O module.                                                                         |
|                                            | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ○<br>L ERR. ○ | PW ●<br>L RUN ○<br>L ERR. ○ | The L RUN lights on the compact remote I/O module B and beyond are off, indicating the transmission cable between the compact remote I/O module A and B has been disconnected or removed from the terminal block. | Identify the disconnected point by referring to the LED status, and correct it.                                 |
|                                            | PW ●<br>L RUN ○<br>L ERR. ○ | PW ●<br>L RUN ○<br>L ERR. ○ | PW ●<br>L RUN ○<br>L ERR. ○ | The transmission cable is shorted.                                                                                                                                                                                | Find the shorted cable among the three transmission cables and repair it.                                       |
|                                            | PW ●<br>L RUN ○<br>L ERR. * | PW ●<br>L RUN ○<br>L ERR. * | PW ●<br>L RUN ○<br>L ERR. * | The transmission cable is wired incorrectly.                                                                                                                                                                      | Verify wiring in the terminal box of the compact remote I/O module and correct.                                 |
|                                            | PW ●<br>L RUN ○<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ○<br>L ERR. ○ | The L RUN lights on the compact remote I/O modules A and C are off, indicating the station numbers for A and C are overlapping.                                                                                   | Restart the power supply after the overlapped station numbers for the compact remote I/O modules are corrected. |

● : lit, ○ : unlit, ◎ : flashing, \* : lit, flashing or unlit

| LED status                                 |                             |                             |                             | Cause                                                                                                                                                                                                                 | Corrective action                                                                                                                                       |
|--------------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| Master module                              | Remote I/O module           |                             |                             |                                                                                                                                                                                                                       |                                                                                                                                                         |
|                                            | A                           | B                           | C                           |                                                                                                                                                                                                                       |                                                                                                                                                         |
| TIME ○<br>LINE ○<br>or<br>TIME ●<br>LINE ○ | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ○<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ○ | The L RUN light on the compact remote I/O module B is off, indicating the transmission speed setting for module B is invalid within the setting range (0 to 4).                                                       | Restart the power supply after the transmission speed is set correctly.                                                                                 |
|                                            | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ◎ | The L ERR. of the compact remote I/O module C is flashing at fixed intervals, indicating the setting switch for module C has been changed during normal operation.                                                    | Return the setting switch of the compact remote I/O module to the original position.                                                                    |
|                                            | PW ●<br>L RUN ○<br>L ERR. ● | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ○ | The L RUN of the compact remote I/O module A is off and L ERR. of the same module is lit, indicating the setting switch for module A is set out of range (transmission speed: 5 to 9, station number: 65 or greater). | Correct the setting switch of the compact remote I/O module, and restart the power supply.                                                              |
| TIME ●<br>LINE ●<br>or<br>TIME ○<br>LINE ● | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ● | PW ●<br>L RUN ●<br>L ERR. ○ | The L ERR. of the compact remote I/O module B is lit, indicating that module B is being affected by noise. (L RUN may be off.)                                                                                        | Correctly perform grounding of the FGs for the master module and all compact remote I/O modules.                                                        |
|                                            | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ● | PW ●<br>L RUN ●<br>L ERR. ● | The L ERR. lights on the compact remote I/O module B and beyond are lit, indicating the transmission cable is affected by noise in the area between modules A and B. (L RUN may be off.)                              | Verify the grounding of the SLD of the transmission cable.<br>Separate the wire from the power cable as much as possible (100mm (3.94 inches) or more). |
|                                            | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ○ | PW ●<br>L RUN ●<br>L ERR. ● | A terminal resistor is not attached. (L RUN may be off.)                                                                                                                                                              | Check if a terminal resistor is attached.                                                                                                               |

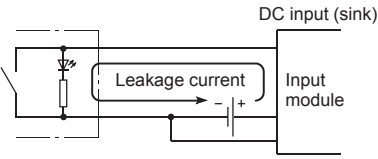
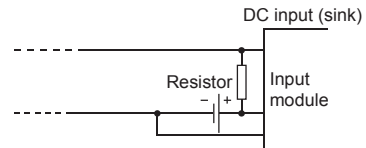
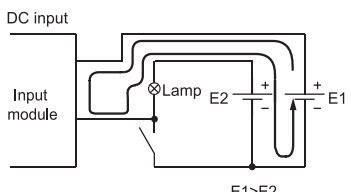
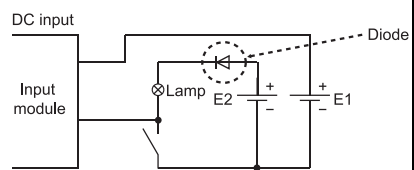
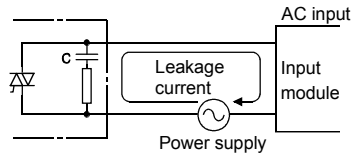
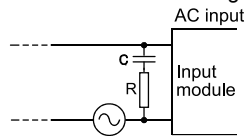
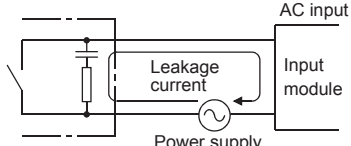
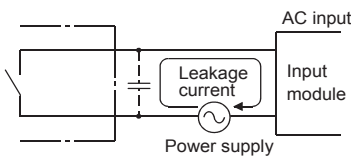
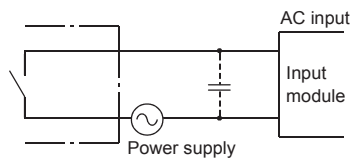
●: lit, ○: unlit, ◎: flashing, \*: lit, flashing or unlit

## 8.2 Examples of Errors for Compact Remote I/O Modules

This section explains examples of errors that occur in the input circuit, and the appropriate corrective actions.

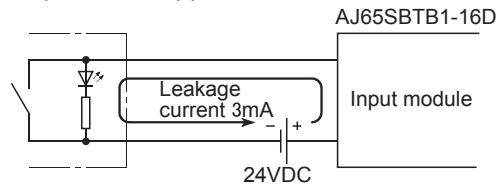
## 8.2.1 Errors occurring in the input circuit and corrective actions

Examples of errors that occur in the input circuit and corrective actions are explained below:

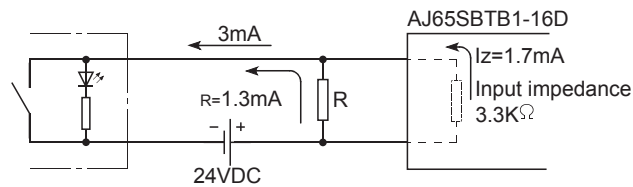
|           | Error status                   | Cause                                                                                                                                                                                                                                                                   | Corrective action                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example 1 | Input signals do not turn off. | <ul style="list-style-type: none"> <li>Activation via the LED display switch.</li> </ul>                                                                                               | <ul style="list-style-type: none"> <li>Connect an appropriate resistor as shown below so that the current flowing along the input module becomes lower than OFF current.</li> </ul>  <p>* A calculation example used to obtain the resistance value to be connected is shown on the following page.</p> |
| Example 2 | Input signals do not turn off. | <ul style="list-style-type: none"> <li>Sneak current due to the use of two power supplies</li> </ul>                                                                                 | <ul style="list-style-type: none"> <li>Use only one power supply.</li> <li>Connect a diode to prevent a sneak current as shown below.</li> </ul>                                                                                                                                                      |
| Example 3 | Input signals do not turn off. | <ul style="list-style-type: none"> <li>Input switch leakage current (driving with a contactless switch).</li> </ul>                                                                  | <ul style="list-style-type: none"> <li>Connect the appropriate resistor so that the terminal-to-terminal voltage of the input module is below the OFF voltage value.</li> </ul>  <p>0.1 to 0.47μF + 47 to 120Ω (1/2W) is recommended for the CR constant.</p>                                         |
| Example 4 | Input signals do not turn off. | <ul style="list-style-type: none"> <li>Driving using a limit switch with neon lamp.</li> </ul>                                                                                       | <ul style="list-style-type: none"> <li>Same as Example 3.</li> <li>Or, create a completely separate display circuit.</li> </ul>                                                                                                                                                                                                                                                            |
| Example 5 | Input signals do not turn off. | <ul style="list-style-type: none"> <li>Leakage current due to line capacity of the wiring cable.</li> </ul> <p>The line capacity "C" of a twisted pair wire is about C=100PF/m.</p>  | <ul style="list-style-type: none"> <li>Same as Example 3.</li> <li>However, this problem will not occur if the power supply as shown below is provided at the input device side.</li> </ul>                                                                                                           |

<Sample calculation for Example 1>

When a switch with LED indicator, giving leakage current of 3mA at maximum when 24VDC power is supplied to the AJ65SBTB1-16D



- (1) 1.7mA or less OFF current of the AJ65SBTB1-16D is not satisfied. Hence, connect a resistor as shown below.



- (2) Calculate the resistance value R as shown below.

To satisfy 1.7mA or less OFF current of the AJ65SBTB1-16D, connect a resistor which flows 1.3mA or more.

$I_R: I_Z = Z$  (Input impedance): R

$$R \leq \frac{I_Z}{I_R} \times Z \text{ (Input impedance)} = \frac{1.7}{1.3} \times 3.3 = 4.31 [\text{k}\Omega]$$

Supposing that the resistance R is 3.9kΩ, the power capacity W of resistor R is:

$$W = (\text{Input voltage})^2 \div R = 26.42 \div 3900 = 0.179 \text{ (W)}$$

- (3) Connect a resistor of 3.9 (kΩ) and 1 to 2 (W) to a terminal which may cause an error, since the power capacity of a resistor is selected so that it will be 3 to 5 times greater than the actual power consumption.

- (4) Also, OFF voltage when resistor R is connected will be as follows.

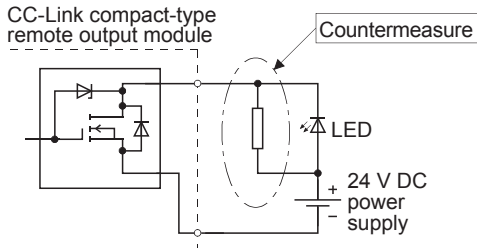
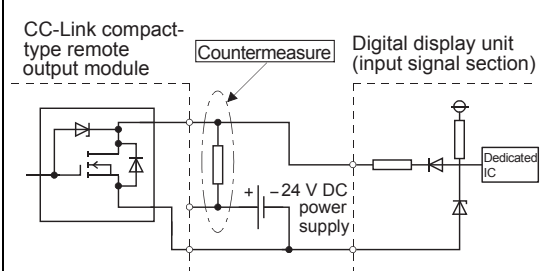
$$\frac{1}{\frac{1}{3.9 [\text{k}\Omega]} + \frac{1}{3.3 [\text{k}\Omega]}} \times 3 [\text{mA}] = 5.36 [\text{V}]$$

This satisfies 6V or less OFF voltage of AJ65SBTB1-16D.

## 8.2.2 Errors occurring in the output circuit and corrective action

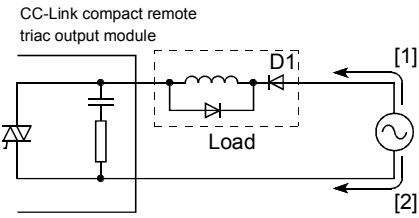
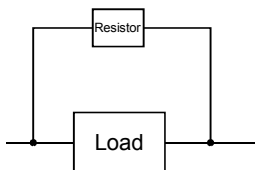
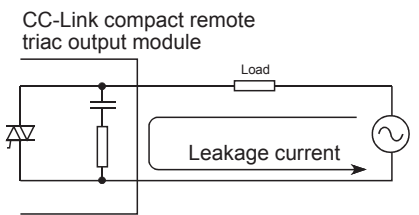
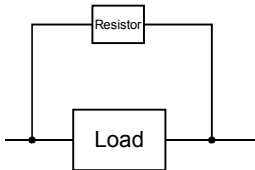
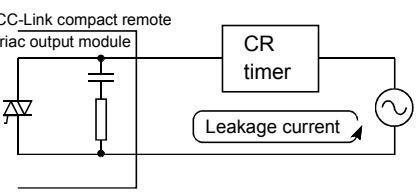
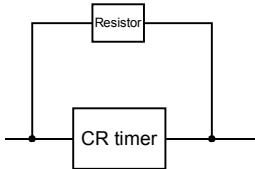
Examples of errors that may occur in the output circuit and the respective corrective action are described below.

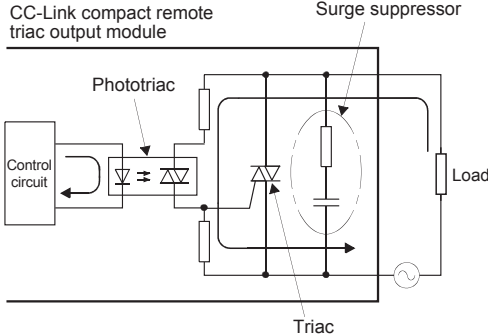
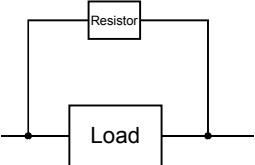
## (1) When AJ65SBTB1-16T or AJ65SBTB1-32T is used

|           | Condition                                                                                                                                                                                                                                                                                         | Cause                                                                                                                                                                                                                                                                                                            | Corrective action                                                                                                                          |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Example 1 | <p>When an LED is connected as a load, sometimes the LED dimly lights up even when the output module is turned off.<br/>(Example) LED push button by Izumi Electric, Co.: ALFN22211DNR</p>                      | <p>For the output modules listed below, the output module specification and the leak current specification value during OFF are 24VDC 0.5A and 0.25mA, respectively (the leak current during OFF is specified as above since an MOS with a built-in protection function and PET transistor output are used.)</p> | <p>Connect a resistor with 5 to 50k<math>\Omega</math> in parallel to the load LED.</p>                                                    |
| Example 2 | <p>When a segment LED display device is connected as a load, the display contents sometimes become incorrect.<br/>(Example) M7E digital display unit (height of character 14mm) by Omron, Co.: M7E-01DBN2</p>  | <p>&lt;Applicable modules&gt;<br/>AJ65SBTB1-16T,<br/>AJ65SBTB1-32T</p>                                                                                                                                                                                                                                           | <p>Connect a pull-up resistor with 5 to 50k<math>\Omega</math> and 0.5(W) between the 24VDC power supply and the output module output.</p> |

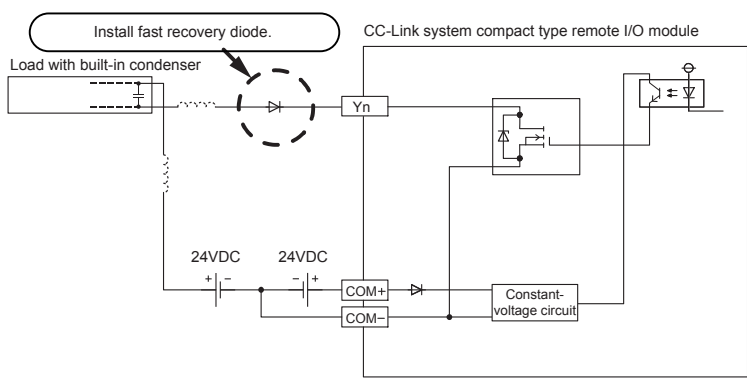


## (2) When AJ65SBTB2(N)-8S or AJ65SBTB2(N)-16S is used

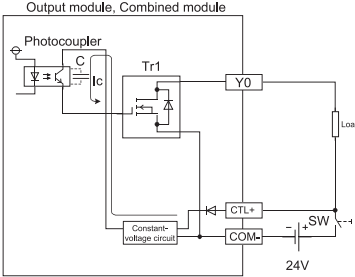
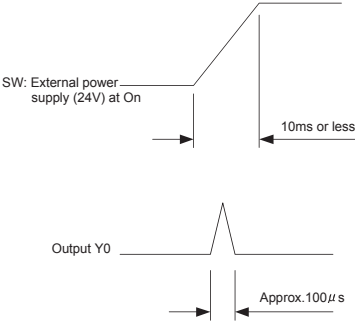
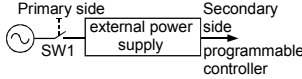
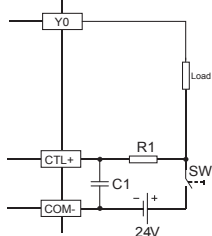
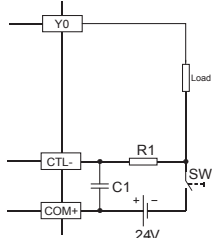
|           | Condition                                                           | Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Corrective action                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example 1 | Excessive voltage is applied to the output OFF load.                | <ul style="list-style-type: none"> <li>The load is half-wave rectified internally. (Some solenoids do this process.)</li> </ul>  <ul style="list-style-type: none"> <li>When the polarity of the power supply is [1], C is charging. When the polarity is [2], the voltage charged in C + power supply voltage is applied to both ends of D1. The maximum value of the voltage is about 2.2E.</li> </ul> | <ul style="list-style-type: none"> <li>Connect a resistor of several tens KΩ to several hundreds KΩ to both ends of the load.</li> </ul> <p>When this type of method is used, no problems will occur in the output elements, but the diode that is built in the load may deteriorate and may be damaged.</p>                   |
| Example 2 | The load is not turned OFF. (Triac output)                          | <ul style="list-style-type: none"> <li>Leakage current due to built-in surge suppressor.</li> </ul>                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>Connect a resistor to both ends of the load.</li> </ul> <p>Caution is required when the wiring distance from the output card to the load is long, since there may be leakage current due to the line capacity.</p>                                                                    |
| Example 3 | Time limit changes when the load is a CR type timer. (Triac output) |                                                                                                                                                                                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Drive the relay first, and then drive the CR type timer at that contact.</li> </ul> <p>Caution is required as indicated in Example 1 since the internal circuit may be half-wave rectified depending on the timer.</p>  <p>Calculate the resistor constant according to the load.</p> |

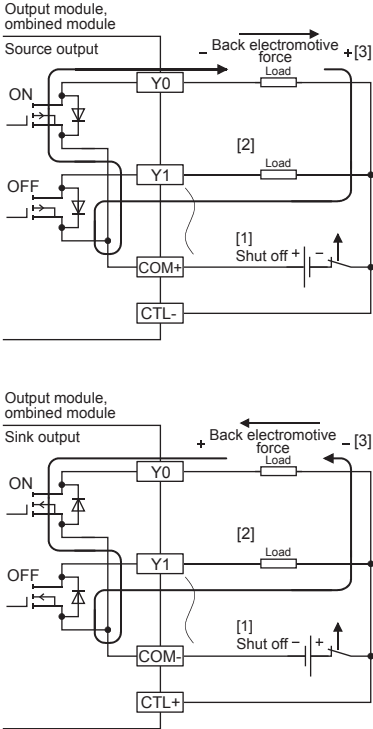
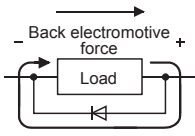
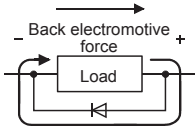
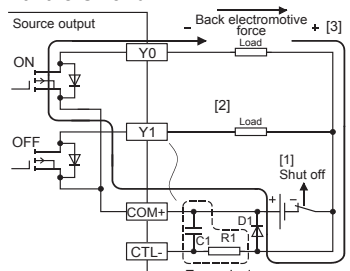
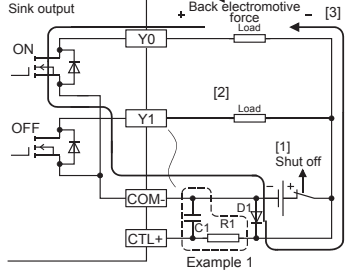
|           | Condition                                     | Cause                                                                                                                                                                                                                                                                                                                                                                                                                                          | Corrective action                                                                                                                                                                                                                               |
|-----------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example 4 | The load is not turned OFF.<br>(Triac output) | <ul style="list-style-type: none"><li>If the load current is insufficient (lower than 25mA), the triac does not operate, causing the load current to flow into a phototriac as shown below.</li><li>If an inductive load is connected in this condition, the load may not turn off because surge at the time of off is applied to the phototriac.</li></ul>  | <ul style="list-style-type: none"><li>Connect a resistor to both ends of a load so that the load current is higher than the minimum load current.</li></ul>  |

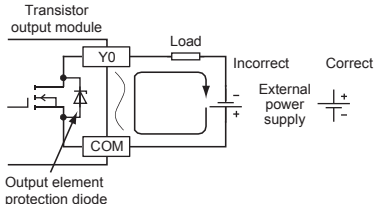
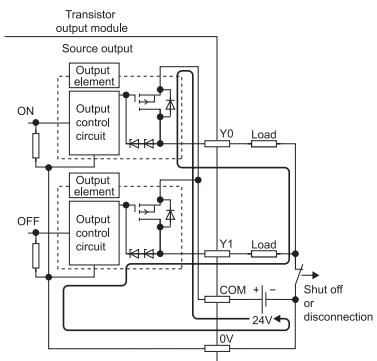
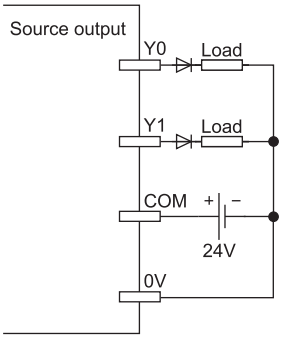
- (3) When AJ65AJ65SBTB1-8T, AJ65SBTB2-8T, AJ65SBTB1-16T, AJ65SBTB2-16T, AJ65SBTB1-32T, AJ65SBTC1-32T, AJ65SBTB32-8DT, AJ65SBTB1-16DT, AJ65SBTB1-16DT1, AJ65SBTB32-16DT, AJ65SBTB1-32DT, AJ65SBTB1-32DT1, AJ65SBTC4-16DT, AJ65SBTC1-32DT, AJ65SBTC1-32DT1, or AJ65SBTW4-16DT is used

|           | Condition                   | Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Corrective action                                                                                                                  |
|-----------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Example 1 | The load does not turn Off. | <p>When the load built into the capacitor is connected to the external load, a resonance may occur due to the inductor of the wiring and the load of the capacitor. This may lead to reverse current in output transistor. Due to the reverse current, the protection circuit for output transistor might operate, and the outputs might not be turned on.</p> <p>Note: Such as SSR (Solid state relay) may incorporate a capacitor for countermeasures against noise, etc. When the situation above occurs, confirm if a capacitor is incorporated to the manufacturer.</p>  | <ul style="list-style-type: none"> <li>Install fast recovery diode (1A, 100V or more) in series with the external load.</li> </ul> |

## (4) When output module, combined module is used

|           | Condition                                                                | Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Corrective action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example 1 | When the external power supply turns on, the load turns on for a moment. | <p>Erroneous output due to the stray capacitance (C) between collector and emitter of photocoupler.</p> <p>There is no erroneous output at normal road. An erroneous output may occur at high sensitivity load (such as solid state relay)</p>  <p>(1) If the external power supply is turned on precipitously, Ic current flows due to the stray capacitance (C) between collector and emitter of photocoupler.</p> <p>(2) Ic current flows to the next stage of transistor Tr1 gate and Y0 output turns on by 100μs</p>  | <p>(1) When the external power turns ON/OFF, check that the external power supply rising edge must be 10ms or more, and switch the SW1 to the primary side of external power supply.</p>  <p>(2) When switching to the secondary side of the external power supply is required, the external power supply rising edge connected a condenser must be slow, and measured 10ms or more.</p> <p><b>Sink output</b></p>  <p><b>Source output</b></p>  <p>* The measures are ineffective in the following modules due to the characteristic of the external power supply circuit</p> <ul style="list-style-type: none"> <li>• AJ65SBTB1-8TE</li> <li>• AJ65SBTB1-16TE</li> </ul> <p>R1: Several tens of ohms</p> <p>Power capacity <math>\geq (\text{external power supply current}^{*1})^2 \times \text{resistance value} \times (3 \text{ to } 5)^{*2}</math></p> <p>C1: several hundreds of microfarads 50V</p> <p>*1 Refer to consumption current of the external power supply for modules used in this manual.</p> <p>*2 Select the power capacity of resistance to be 3 to 5 times larger than the actual power consumption.</p> <p>(Example)</p> <p>R1=40 Ω, C1=300 μF</p> <p>Use the below expression to calculated a time constant</p> <p><math>C1 \times R1 = 300 \times 10^{-6} \times 40</math></p> <p><math>= 12 \times 10^{-3} \text{s}</math></p> <p><math>= 12 \text{ms}</math></p> |

|           | Condition                                                                                 | Cause                                                                                                                                                                                                                                   | Corrective action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example 2 | The load which was turned OFF is turned ON for a moment at power-off. (Transistor output) | <p>The load [2] which was turned OFF may be turned ON due to back electromotive force at the time of power-off [1] if an inductive load is used.</p>  | <p>Take action in the following (1) or (2).</p> <p>(1) To prevent the generation of the back electromotive force, connect diode in parallel with load where the back electromotive force has been generated.</p> <p>Source output [3]</p>  <p>Sink output [3]</p>  <p>(2) Install a diode between the positive and negative external power supply to allow an electric current to pass another current path.</p> <p>When the corrective action shown in the example 1 is taken simultaneously, the diode must be installed in parallel with the C1 and R1.</p>  <p>Example 1</p> <p>* The measures are ineffective in the following modules due to the characteristic of the external power supply circuit</p> <ul style="list-style-type: none"> <li>• AJ65SBTB1-8TE</li> <li>• AJ65SBTB1-16TE</li> </ul>  <p>Example 1</p> <p>D1: Reverse voltage VR (VRM)...*1,<br/>Forward current IF (IFM)...*2</p> <p>*1 Approximately 10times higher than the rated voltage in the specifications<br/>Example: 24VDC→Approximately 200V</p> <p>*2 More than twice as much as the maximum load current (common) in the specifications<br/>Example: 2A/1 common→4A or more</p> |

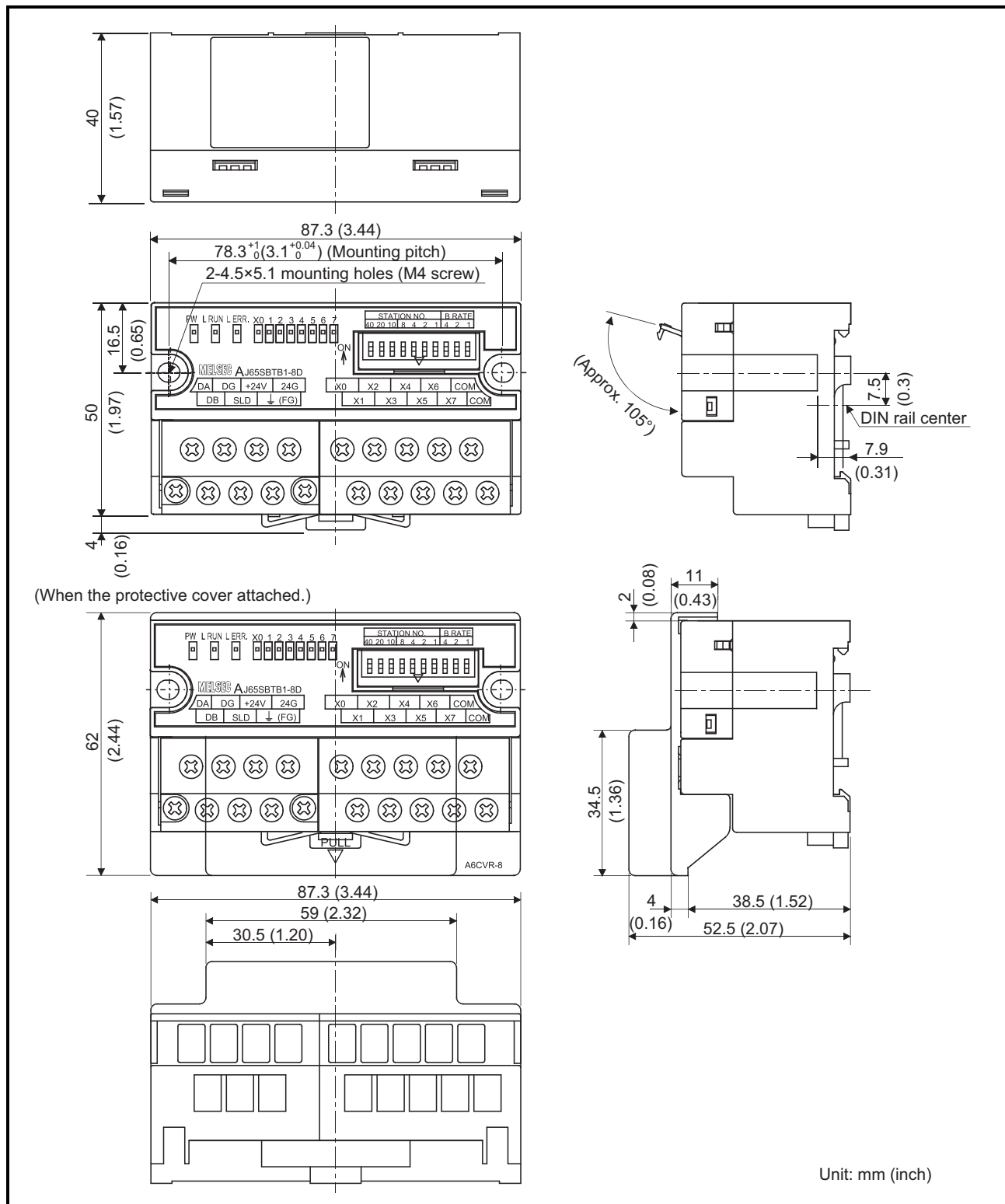
|           | Condition                                                                                                              | Cause                                                                                                                                                                                                                                                                                                                                                                                         | Corrective action                                                                                                                                                                                                                                          |
|-----------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Example 3 | The load operates due to powering on the external power supply. (transistor output)                                    | <p>The polarity of the external power supply is connected in reverse.</p>  <p>When the polarity is connected in reverse, current may flow across an output element protection diode.</p>                                                                                                                     | Connect the polarity correctly.                                                                                                                                                                                                                            |
| Example 4 | When an output is turned on, a load connected to the other output is also turned on. (transistor output (source type)) | <p>If the wire connecting 0V of an external power supply and a common of a load is cut off or disconnected, the load connected to Y1 is also turned on due to a parasitic circuit of the output element that is off.</p>  <p>If a current keeps flowing under the above condition, a failure may occur.</p> | <p>Connect the external power supply and loads correctly. To prevent the condition described on the left, connect a diode to each output terminal as shown below.</p>  |

## APPENDICES

## Appendix 1 External Dimensions

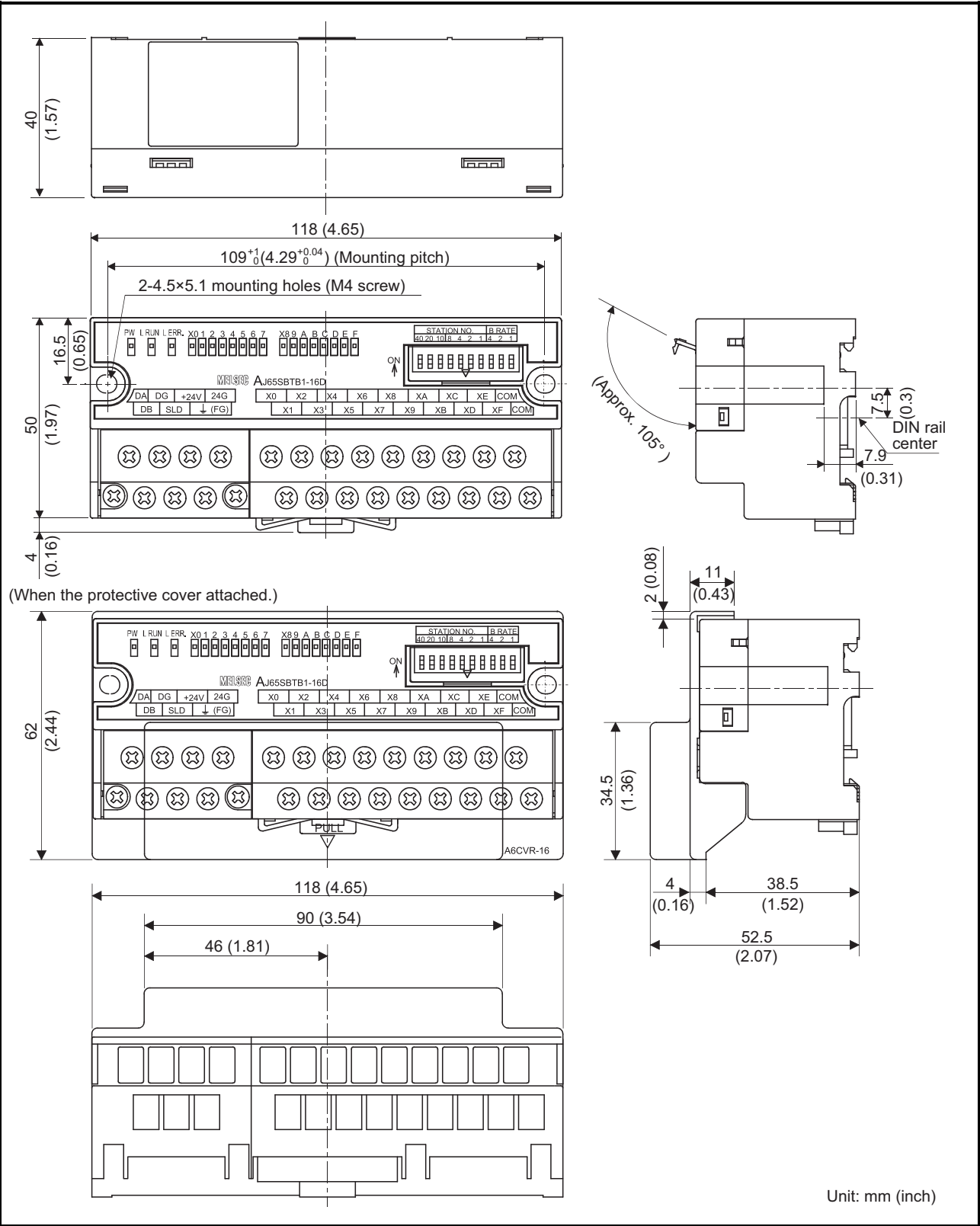
## Appendix 1.1 AJ65SBTB1-8□ remote I/O module

The external dimensions for the AJ65SBTB1-8□ remote I/O module are shown below.



Appendix 1.2 AJ65SBTB1-16□ remote I/O module

The external dimensions for the AJ65SBTB1-16□ remote I/O module are shown below.

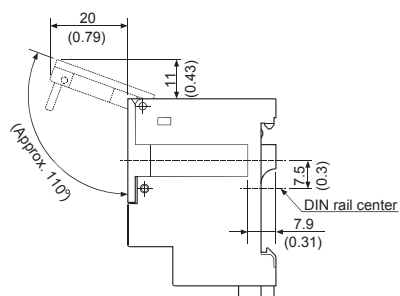


A



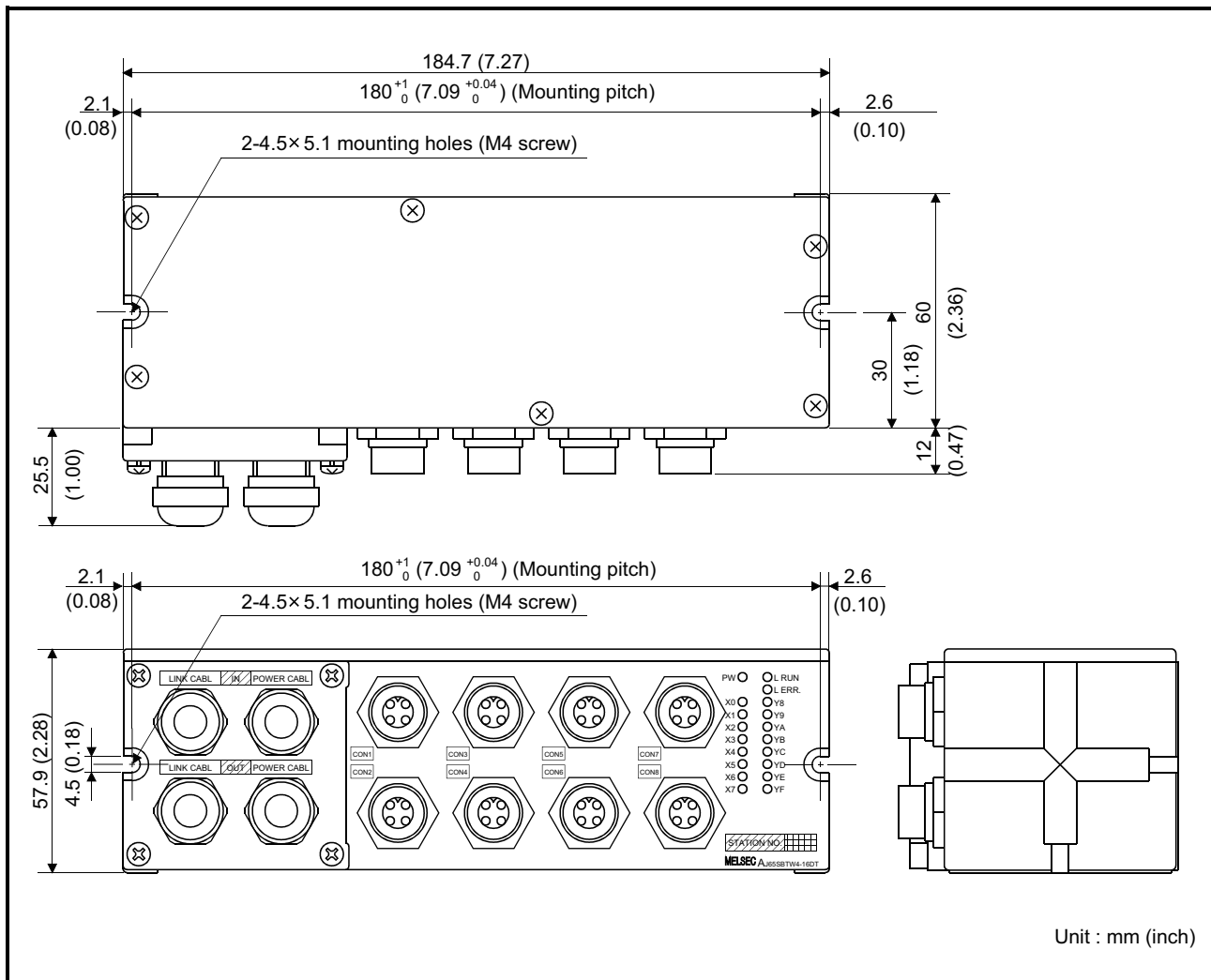
**Remark**

For AJ65SBTB1-16D, AJ65SBTB1-16T Remote I/O Module of hardware version D or before, side face diagram of the module is as follows.



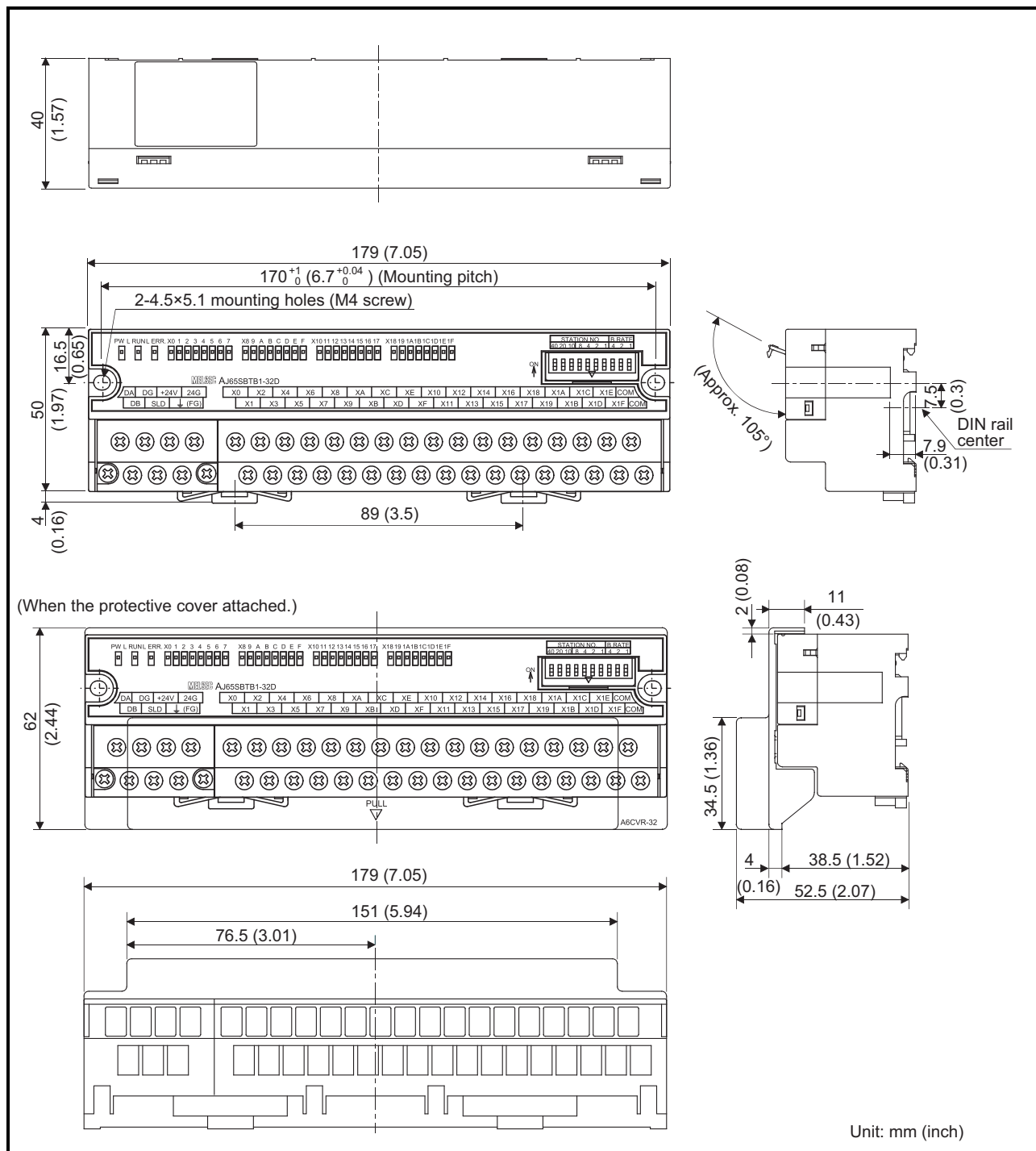
## Appendix 1.3 AJ65SBTW4-16□ remote I/O module

The external dimensions for the AJ65SBTW4-16□ remote I/O module are shown below.



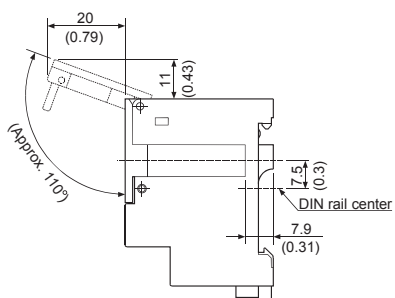
## Appendix 1.4 AJ65SBTB1-32□ remote I/O module

The external dimensions for the AJ65SBTB1-32□ remote I/O module are shown below.



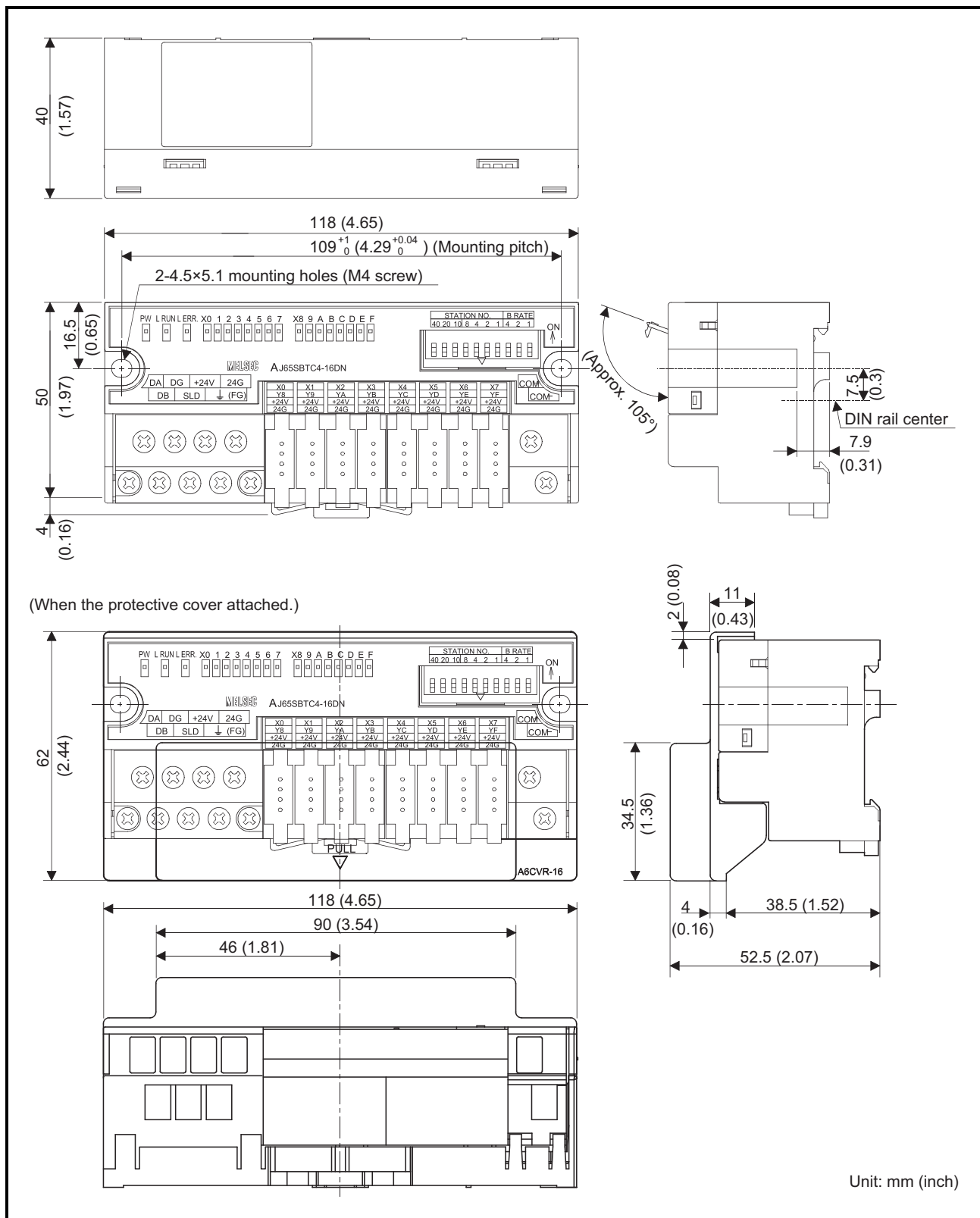
**Remark**

For AJ65SBTB1-32D, AJ65SBTB1-32T Remote I/O Module of hardware version D or before, side face diagram of the module is as follows.



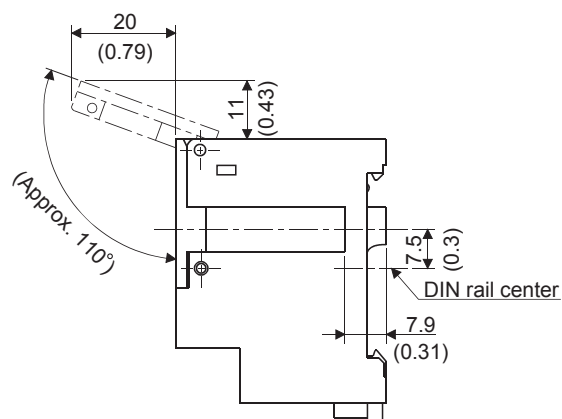
## Appendix 1.5 AJ65SBTC1-32□, and AJ65SBTC4-16□ remote I/O module

The external dimensions for the AJ65SBTC1-32□, and AJ65SBTC4-16□ remote I/O modules are shown below.



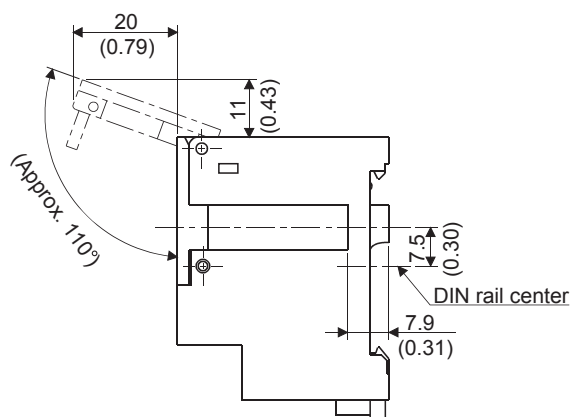
|        |
|--------|
| Remark |
|--------|

- (1) For the AJ65SBTC4-16D remote I/O module, the side view of the module is shown below.



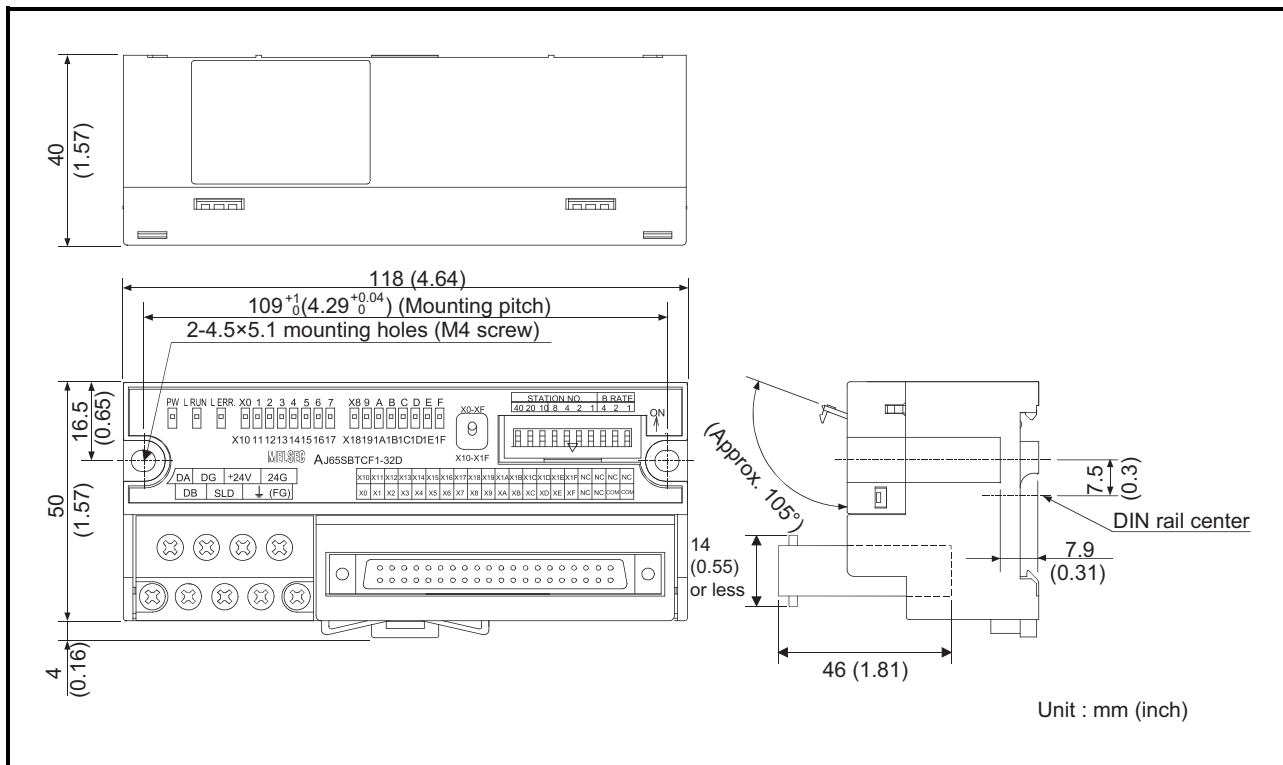
- (2) For the modules given in the following table, the side view is shown below.

| Model           | Hardware Version |
|-----------------|------------------|
| AJ65SBTC1-32D   | N or before      |
| AJ65SBTC1-32D1  | N or before      |
| AJ65SBTC1-32T   | Q or before      |
| AJ65SBTC1-32T1  | E or before      |
| AJ65SBTC1-32DT  | Q or before      |
| AJ65SBTC1-32DT1 | Q or before      |
| AJ65SBTC1-32DT2 | D or before      |
| AJ65SBTC1-32DT3 | D or before      |
| AJ65SBTC4-16DT  | J or before      |
| AJ65SBTC4-16DT2 | C or before      |



## Appendix 1.6 AJ65SBTCF1-32□ remote I/O module

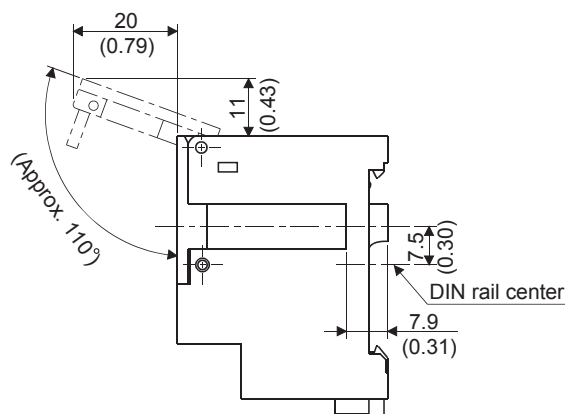
The external dimensions for the AJ65SBTCF1-32□ remote I/O module are shown below.



### Remark

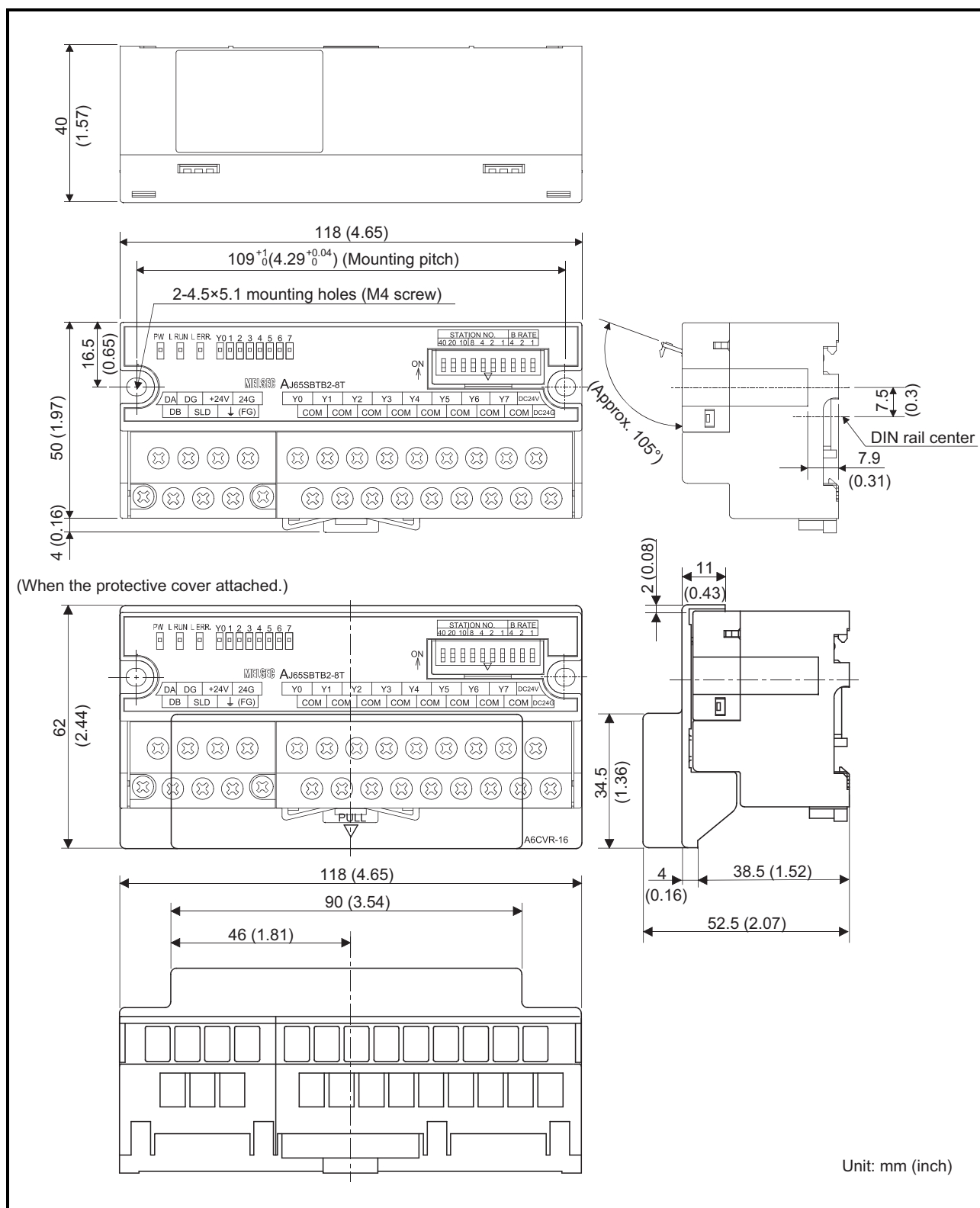
For the modules given in the following table, the side view is shown below.

| Model           | Hardware Version |
|-----------------|------------------|
| AJ65SBTCF1-32D  | F or before      |
| AJ65SBTCF1-32T  | F or before      |
| AJ65SBTCF1-32DT | F or before      |



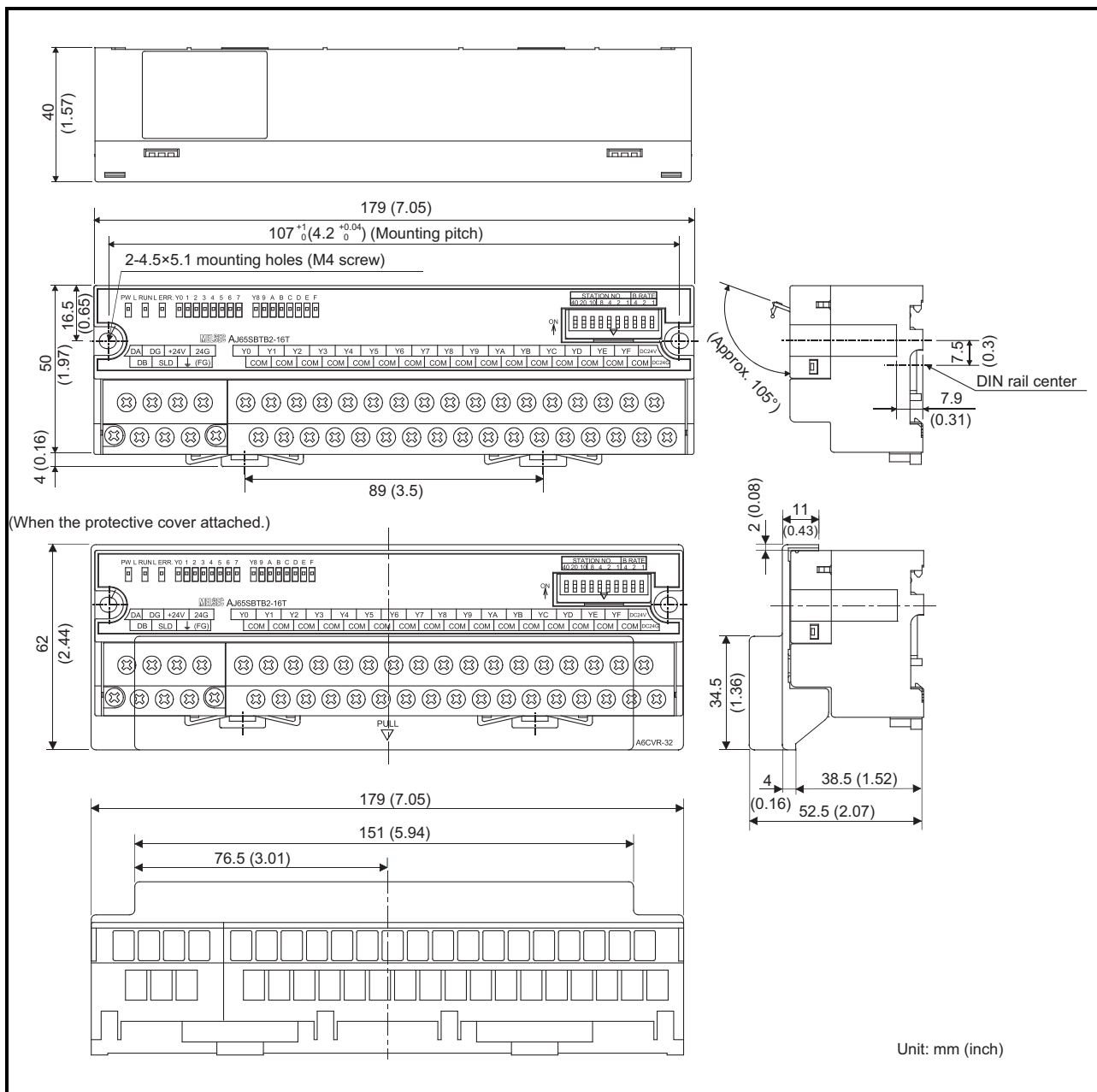
## Appendix 1.7 AJ65SBTB2-8□, AJ65SBTB3-8□, and AJ65SBTB32-8□ remote I/O module

The external dimensions for the AJ65SBTB2-8□, AJ65SBTB3-8□, and AJ65SBTB32-8□ remote I/O modules are shown below.

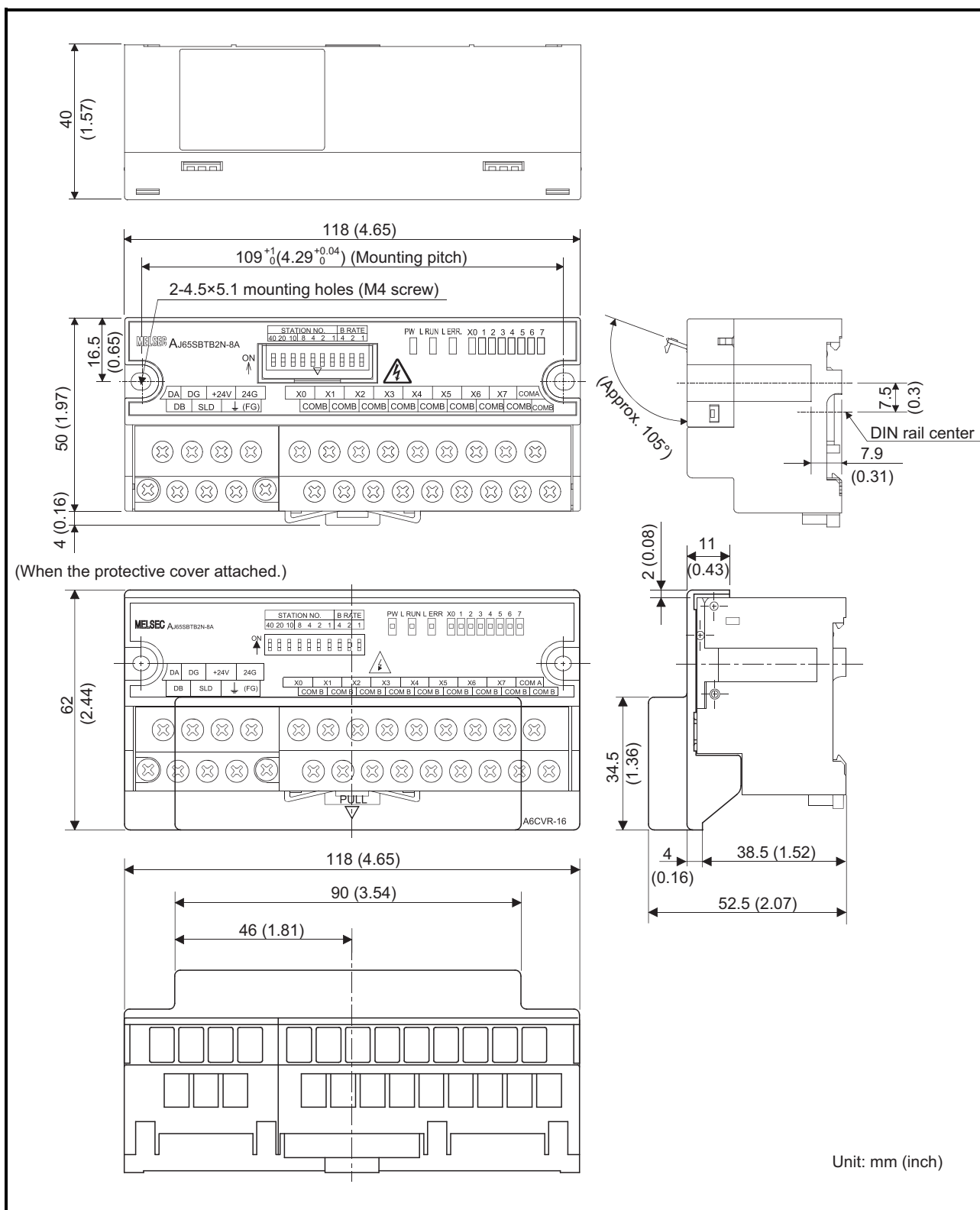




The external dimensions for the AJ65SBB1B-16□, AJ65SBB2-16□, AJ65SBB3-16□, and AJ65SBB32-16□ remote I/O modules are shown below.

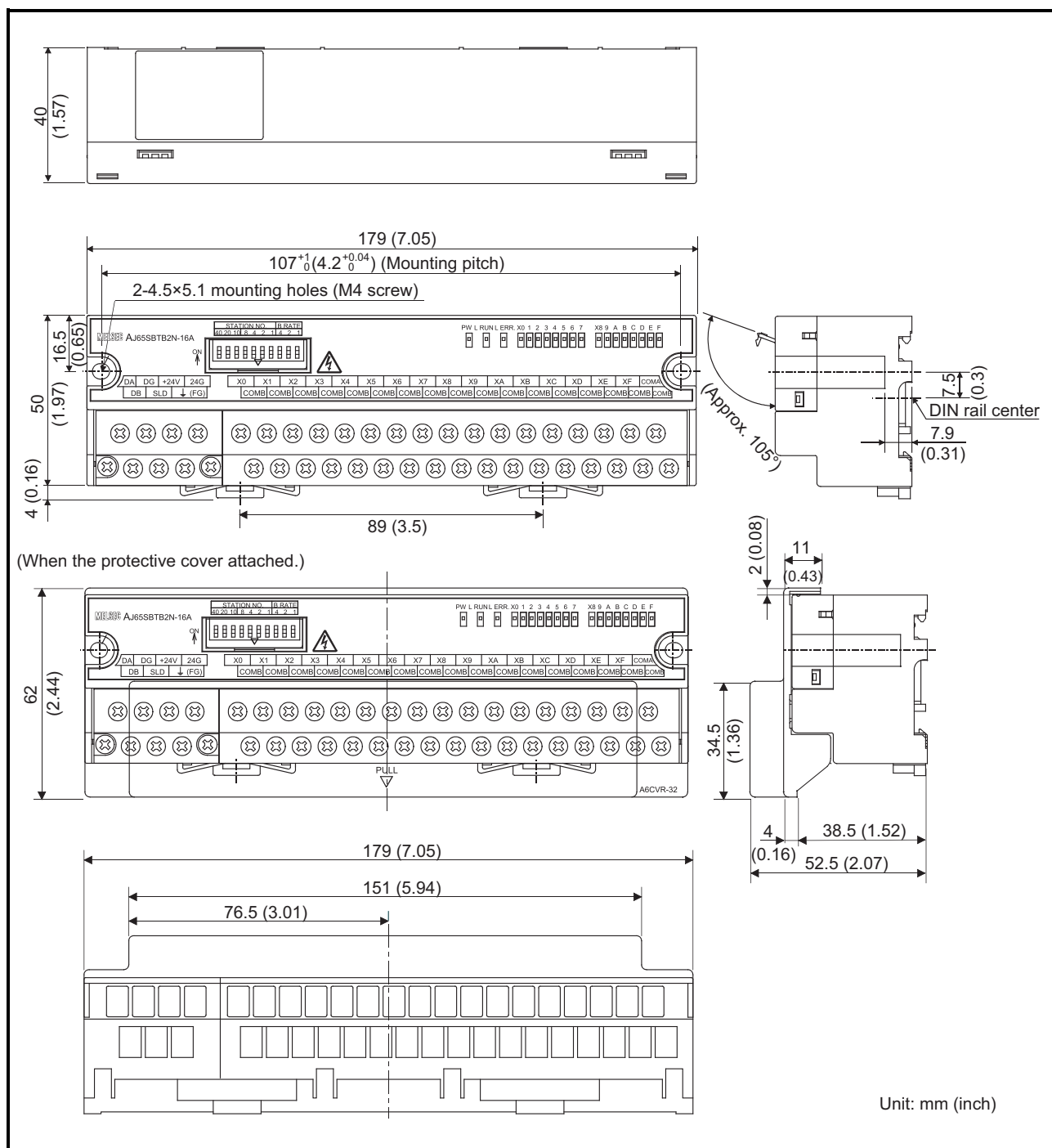


The external dimensions for the AJ65SBTB2N-8□ remote I/O module are shown below.



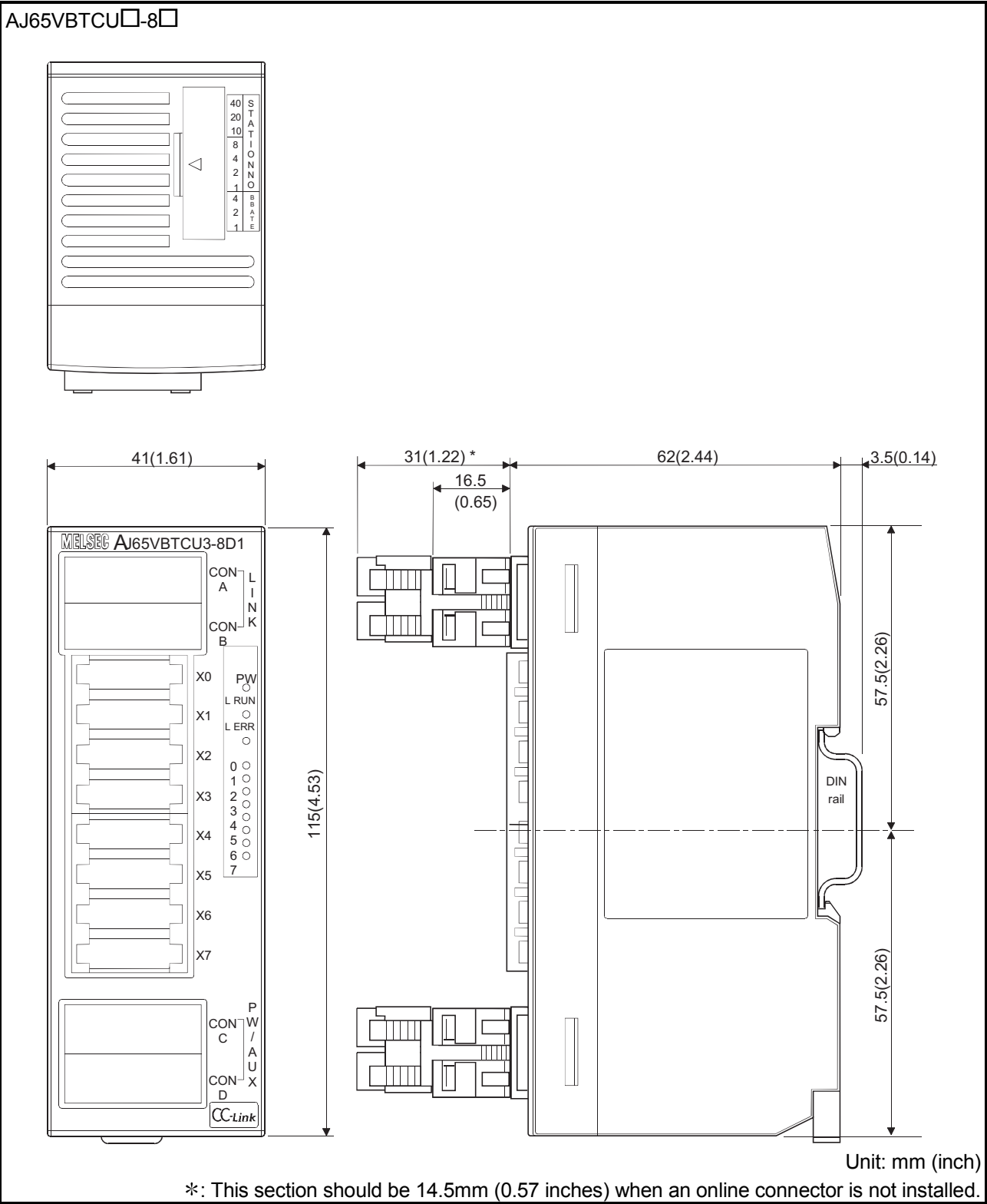
## Appendix 1.10 AJ65SBTB2N-16□ remote I/O module

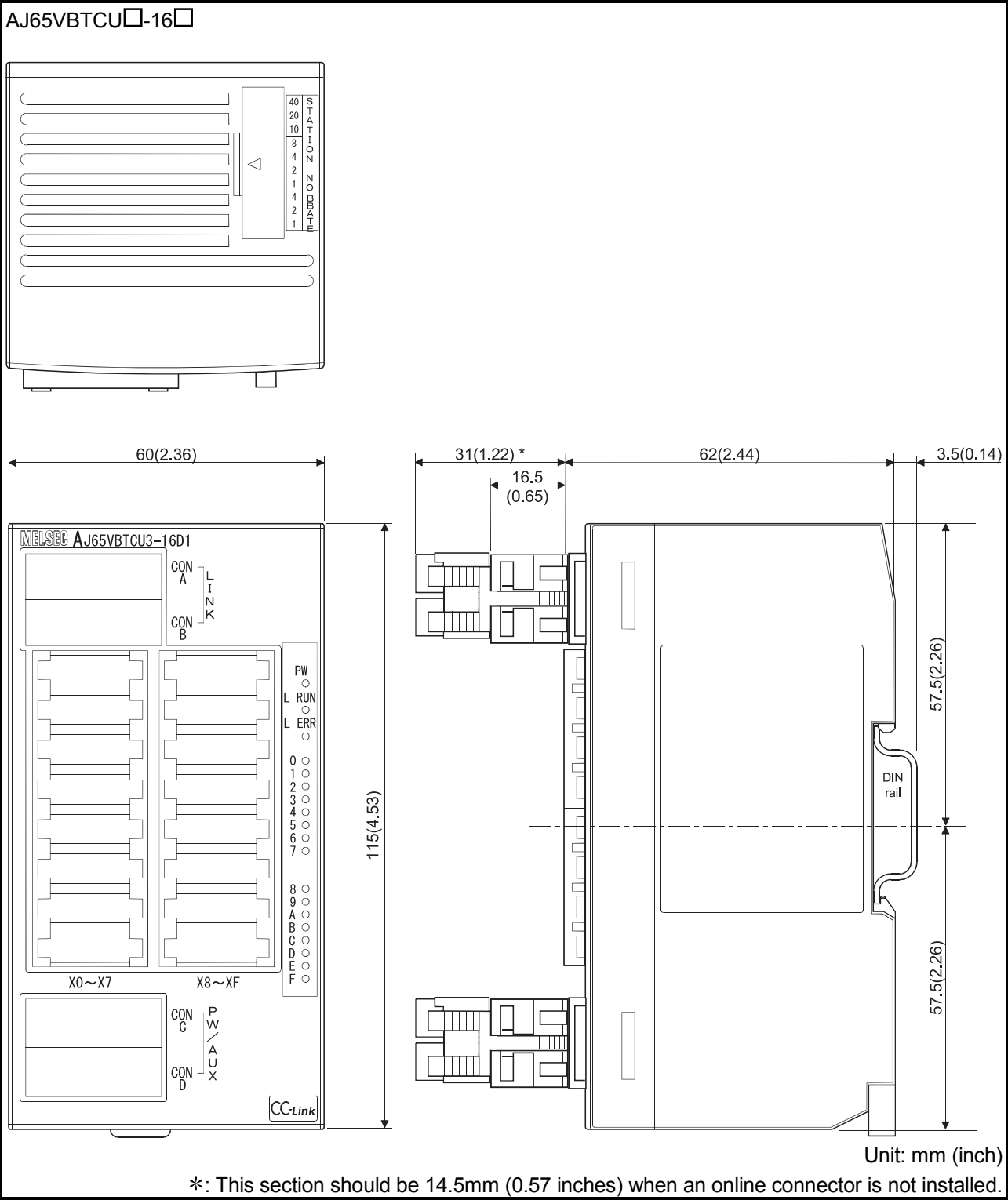
The external dimensions for the AJ65SBTB2N-16□ remote I/O module are shown below.

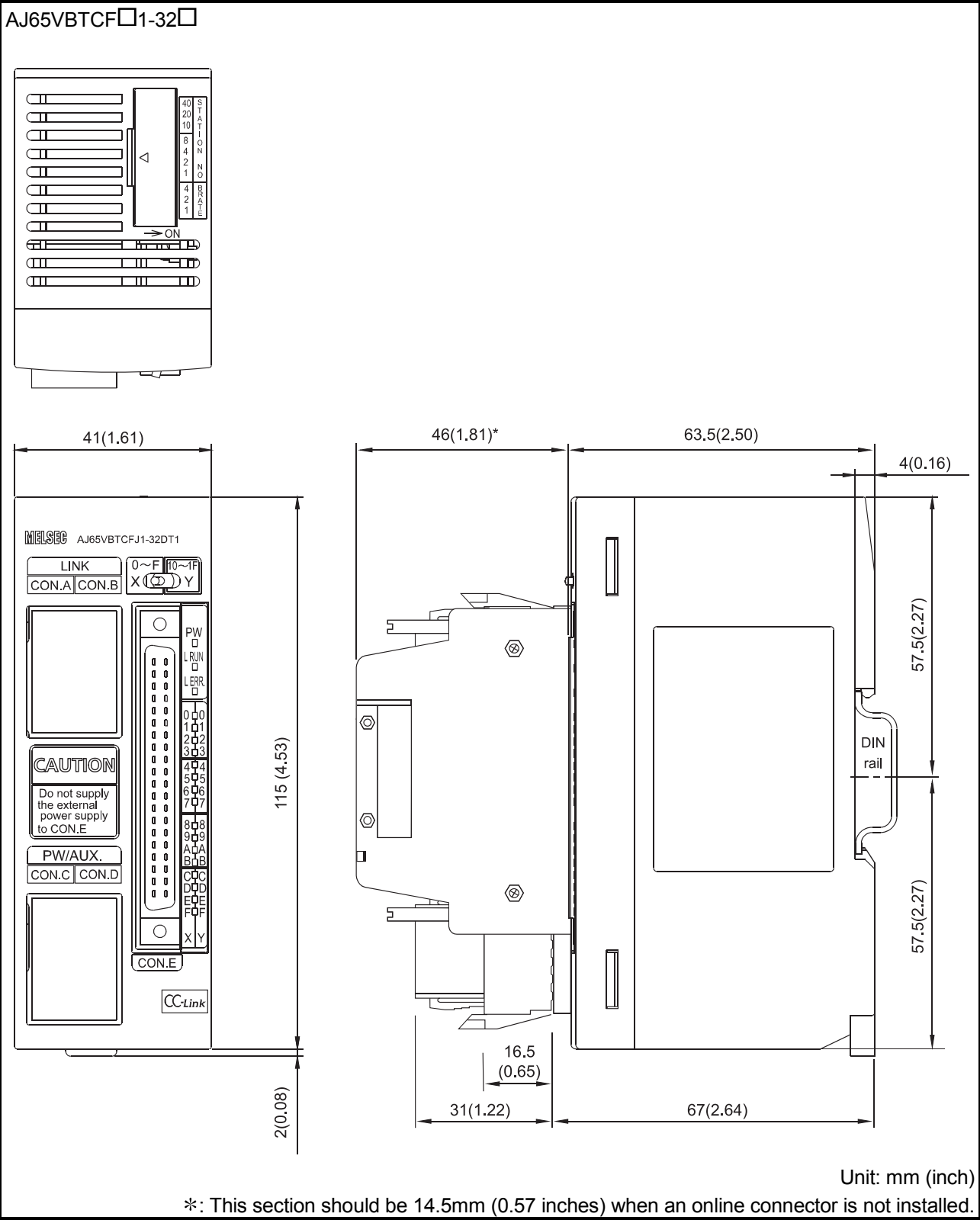


Appendix 1.11 AJ65VBTCU□-8□, AJ65VBTCU□-16□, and AJ65VBTCF1-32□ remote I/O module

The external dimensions for the AJ65VBTCU□-8□, AJ65VBTCU□-16□, and AJ65VBTCF1-32□ remote I/O modules are shown below.

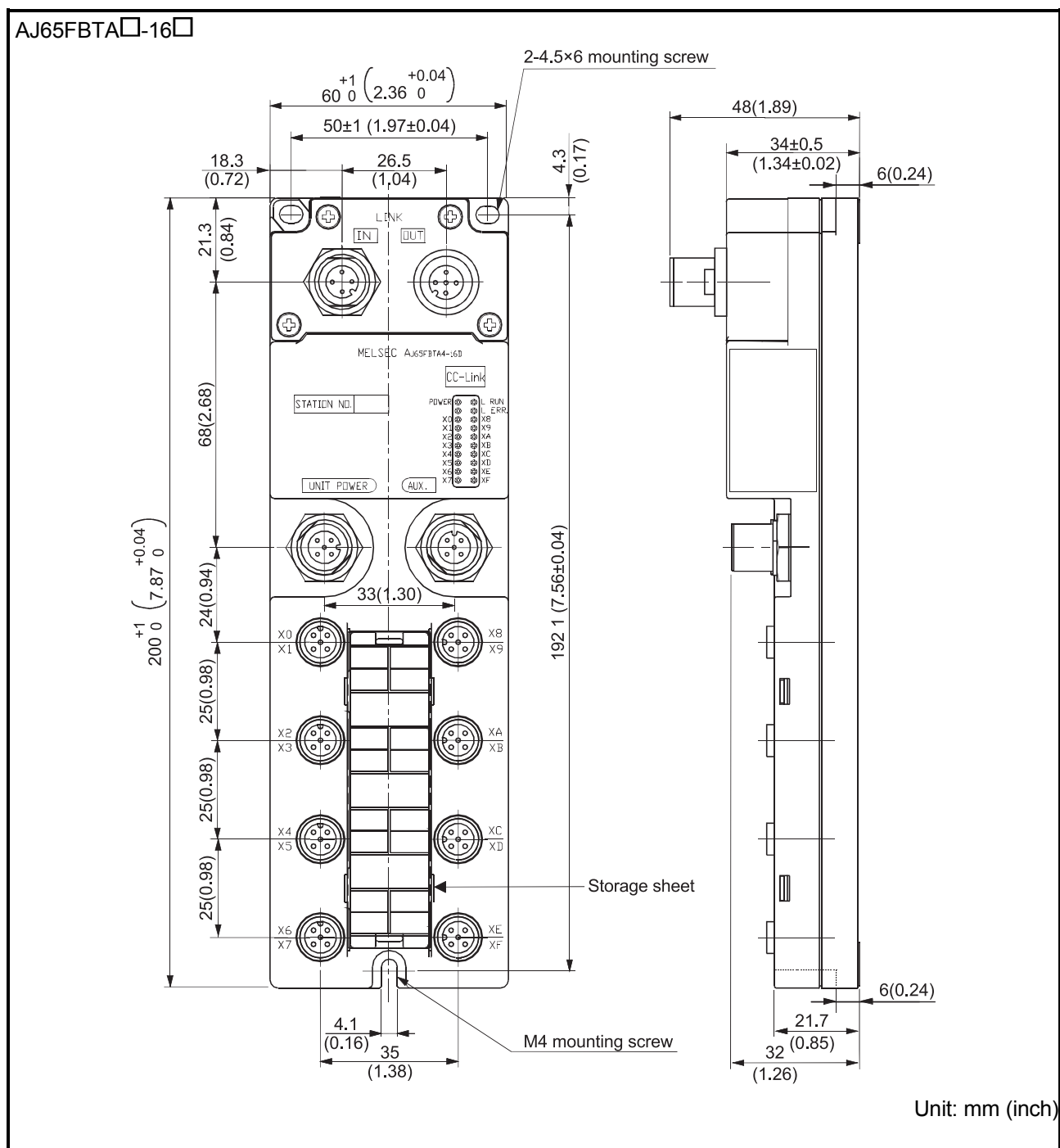






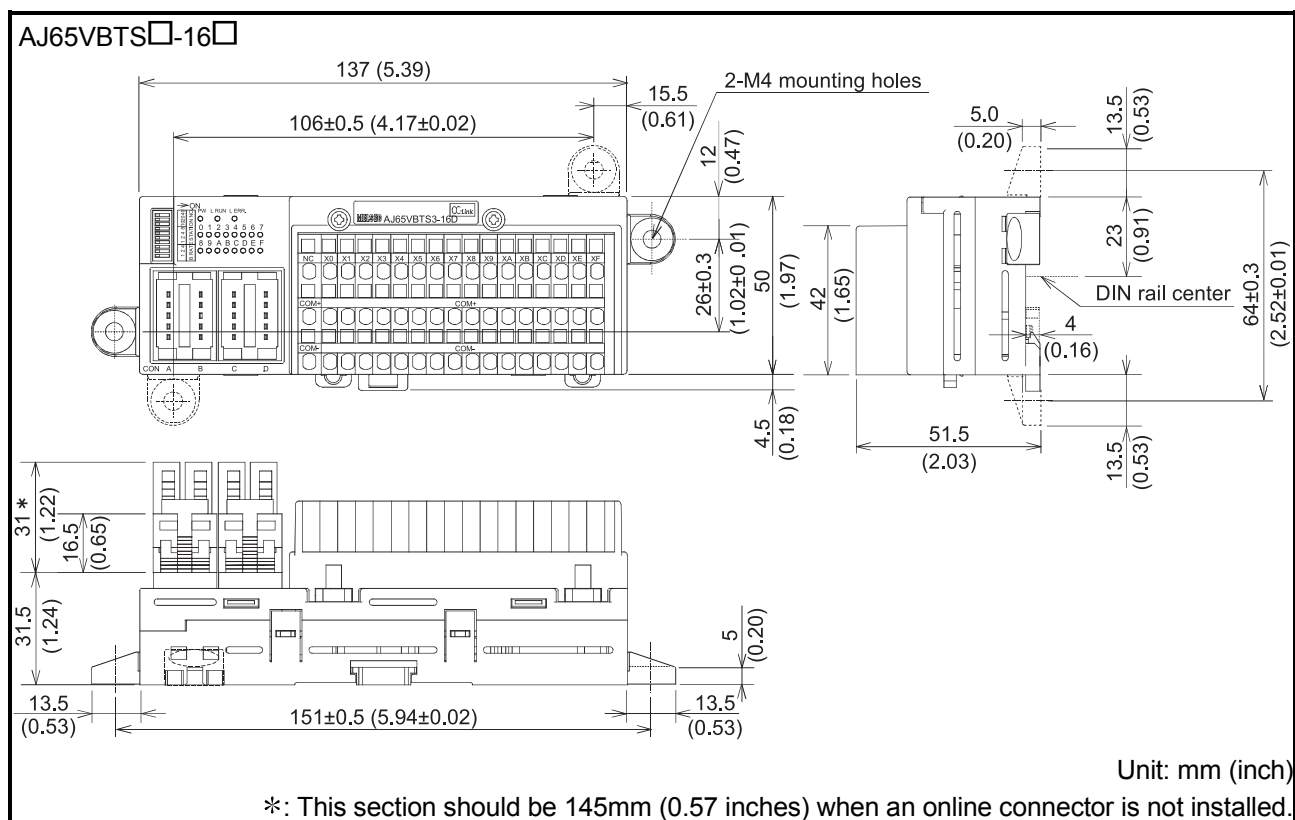
## Appendix 1.12 AJ65FBTA□-16□ remote I/O module

The external dimensions for the AJ65FBTA□-16□ remote I/O modules are shown below.

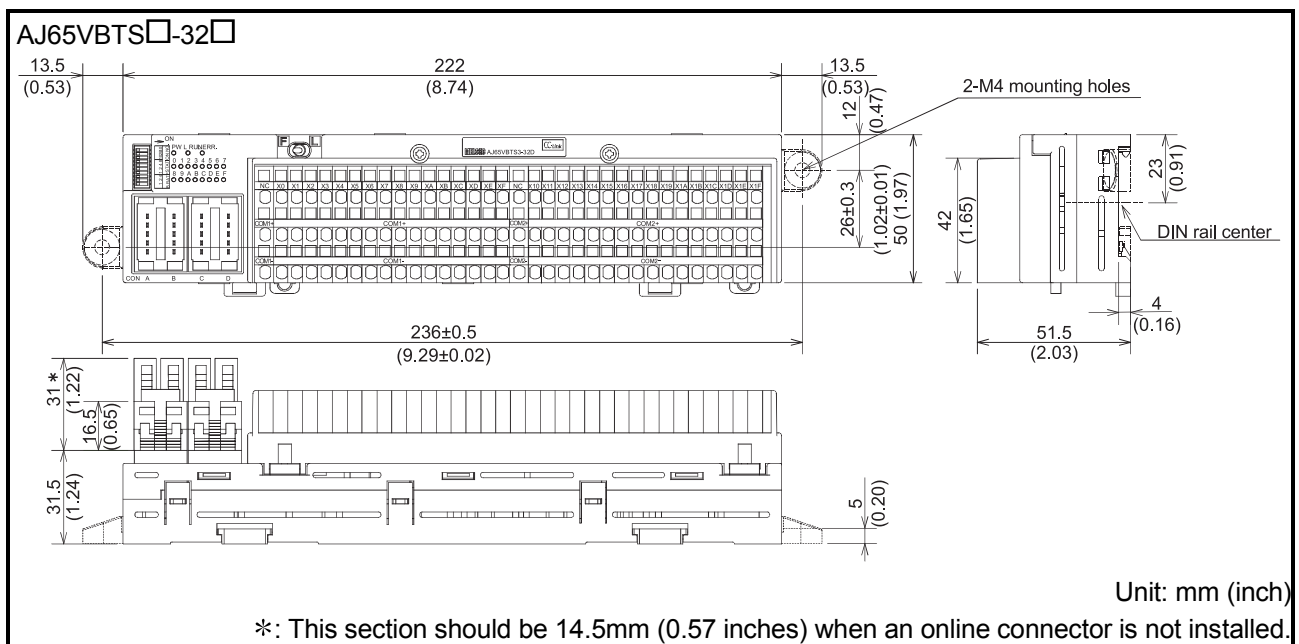


## Appendix 1.13 AJ65VBTS□-16□, and AJ65VBTS□-32□ remote I/O module

The external dimensions of the AJ65VBTS□-16□, and AJ65VBTS□-32□ remote I/O modules are shown below.

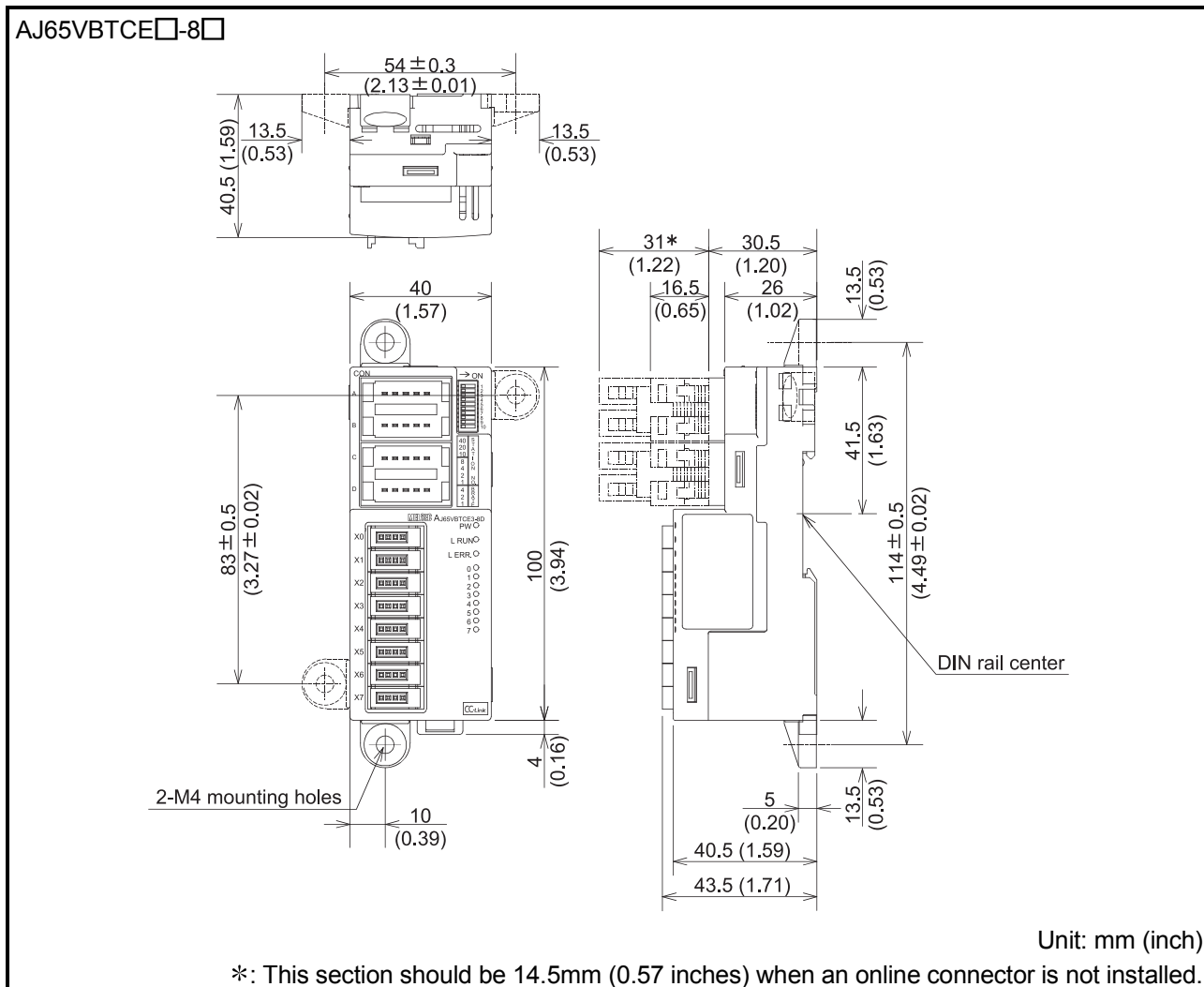






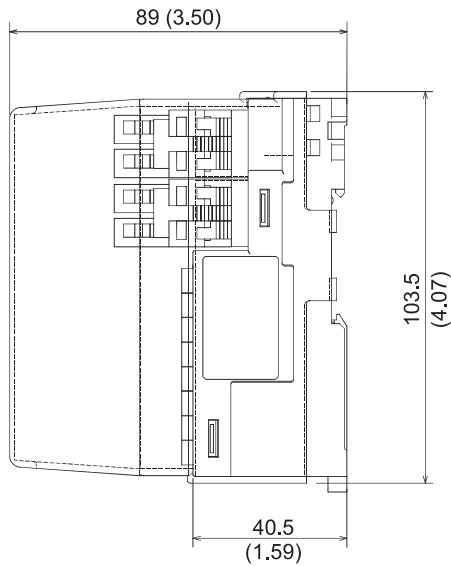
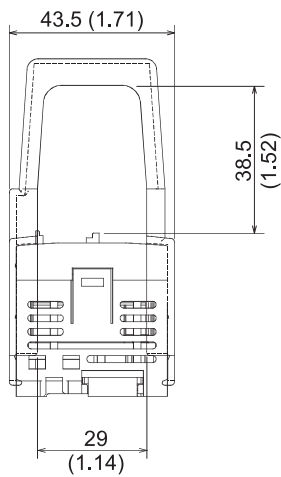
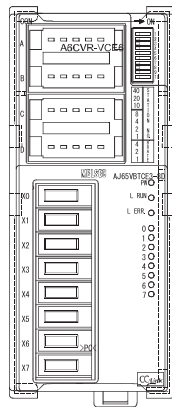
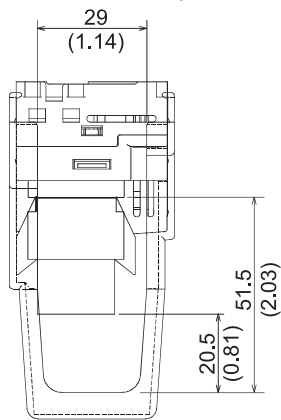
### Appendix 1.14 AJ65VBTCE□-8□, AJ65VBTCE□-16□, and AJ65VBTCE□-32□ remote I/O module

The external dimensions of the AJ65VBTCE□-8□, AJ65VBTCE□-16□, and AJ65VBTCE□-32□ remote I/O modules are shown below.



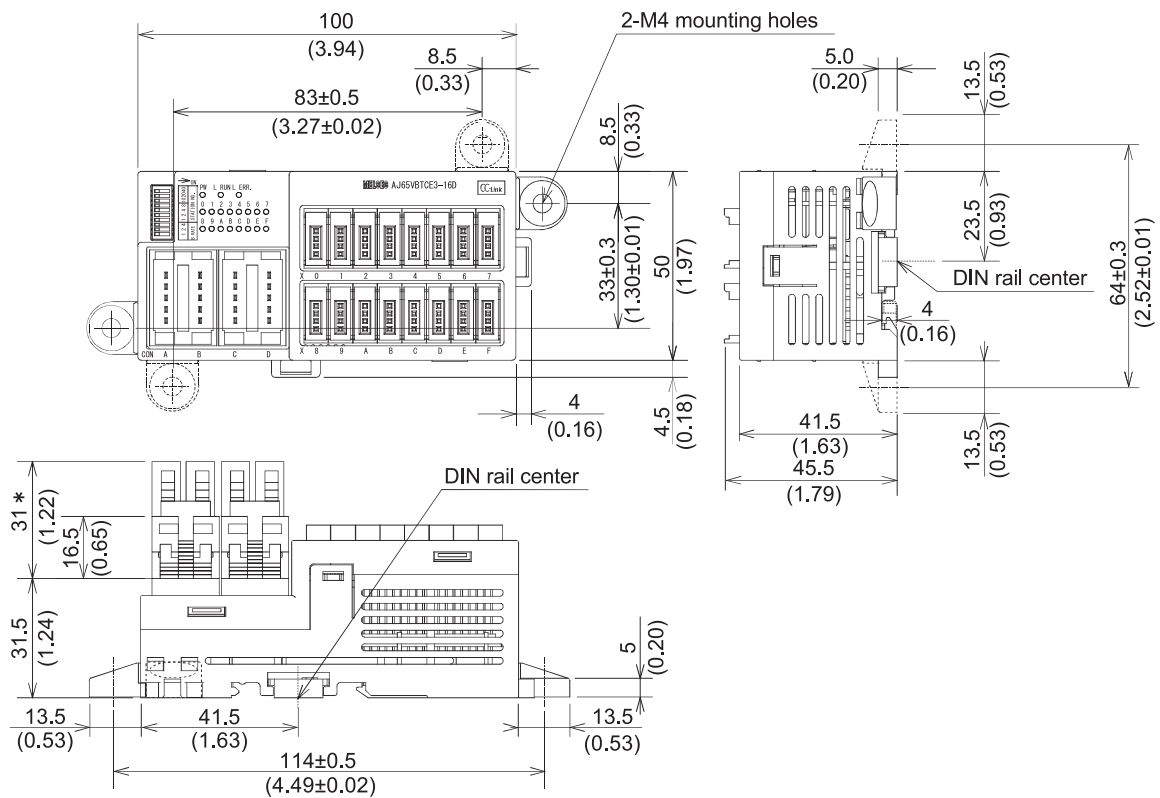
AJ65VBTCE□-8□

(When the protective cover attached.)



Unit: mm (inch)

## AJ65VBTCE□-16□

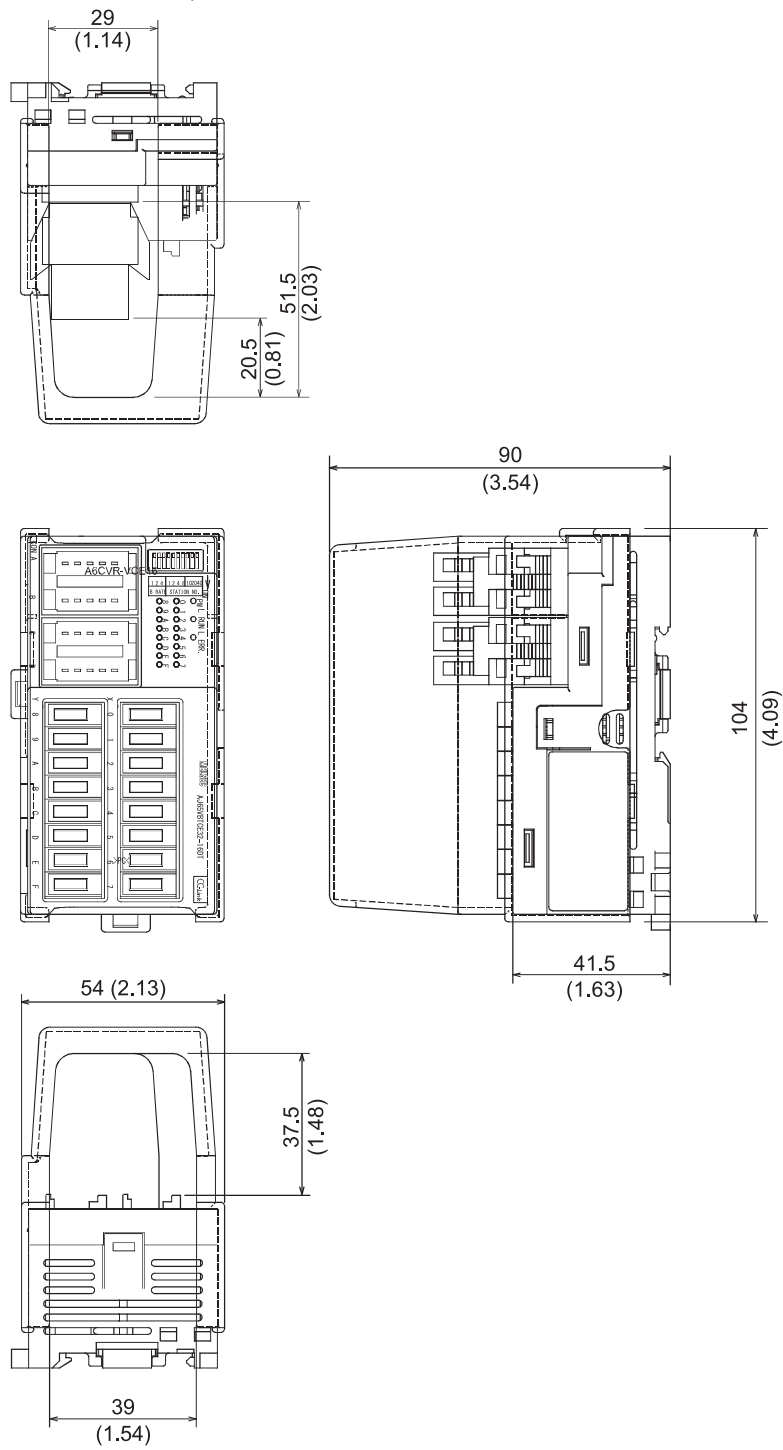


Unit: mm (inch)

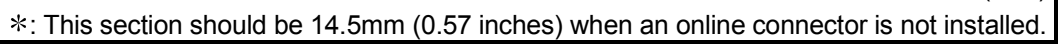
\*: This section should be 14.5mm (0.57 inches) when an online connector is not installed.

AJ65VBTCE□-16□

(When the protective cover attached.)

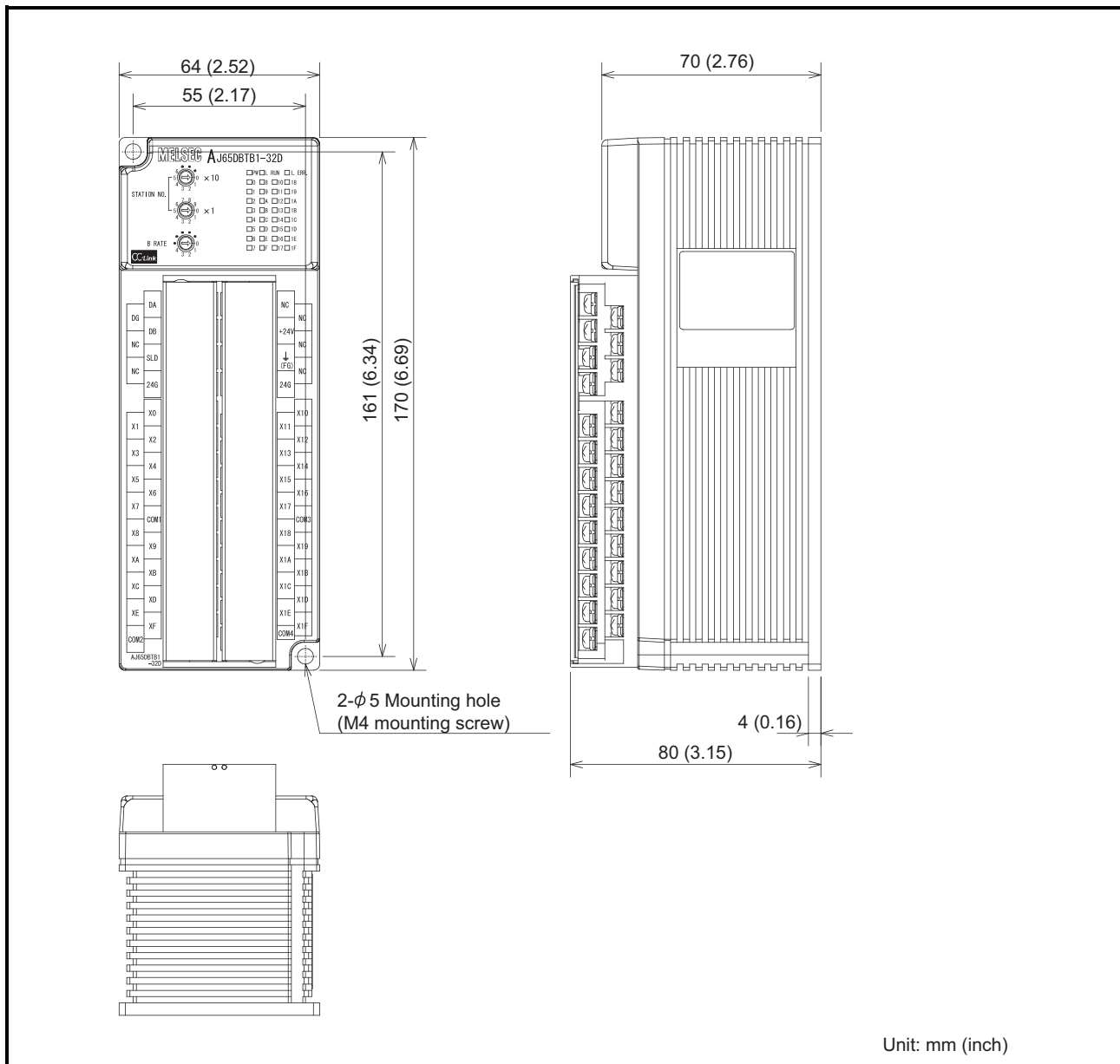


Unit: mm (inch)



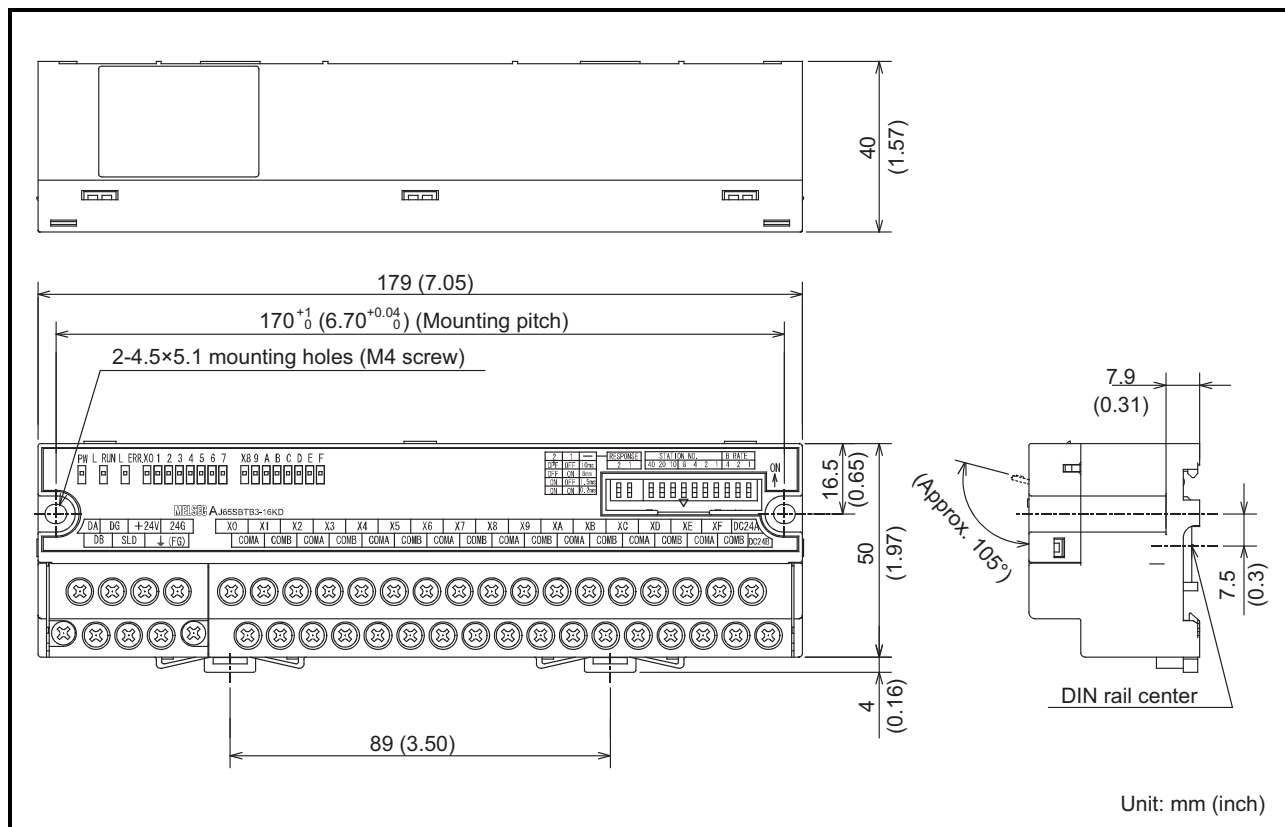
## Appendix 1.15 AJ65DBTB1-32 □ remote I/O module

The external dimensions of the AJ65DBTB1-32 □ remote I/O modules are shown below.



### Appendix 1.16 AJ65SBTB1-32K□, AJ65SBTB3-16KD, and AJ65SBTB32-16K□ remote I/O module

The external dimensions of the AJ65SBTB1-32K□, AJ65SBTB3-16KD, and AJ65SBTB32-16K□ remote I/O modules are shown below.





## Appendix 2 CC-Link Versions

There are two versions for CC-Link: Ver.1.00 and Ver.1.10.

### (1) Difference between Ver.1.00 and Ver.1.10

The original CC-Link version is Ver.1.00 and there are restrictions on the station-to-station cable length. The improved version is Ver.1.10 and there is no restriction on the station-to-station cable length (20cm or longer, in any case). For the maximum overall cable distance of Ver.1.10, refer to the user's manual for the master/local module used.

To enable the station-to-station cable length of 20cm or longer, the following conditions must be met.

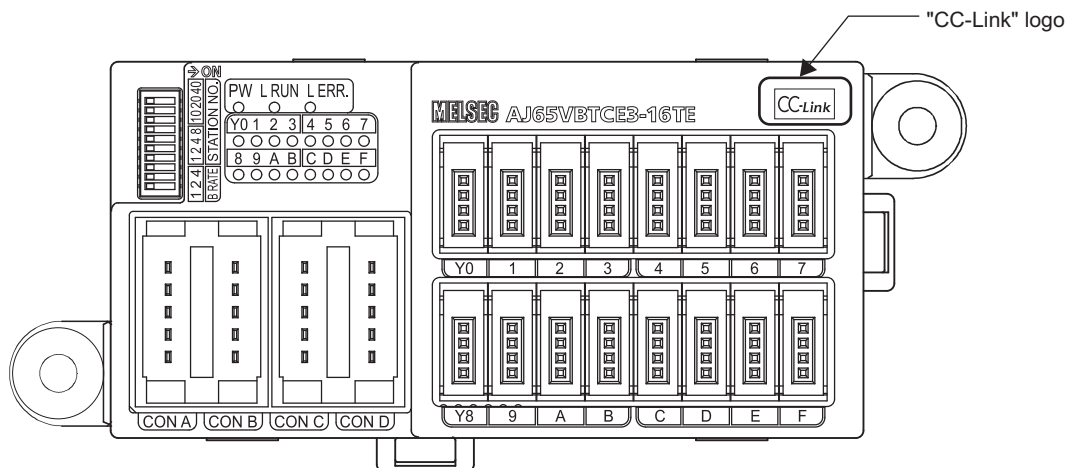
- All modules connected in the CC-Link system are Ver.1.10-compatible modules.
- Ver.1.10-compatible CC-Link dedicated cables are used in the entire system.

| POINT                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| In a system where both Ver.1.00- and Ver.1.10-compatible CC-Link modules are connected, the specifications of Ver.1.00-compatible module are applied for the maximum overall cable distance and station-to-station cable length.<br>For the maximum overall cable distance and station-to-station cable length of Ver.1.00, refer to the user's manual for the master/local module used. |

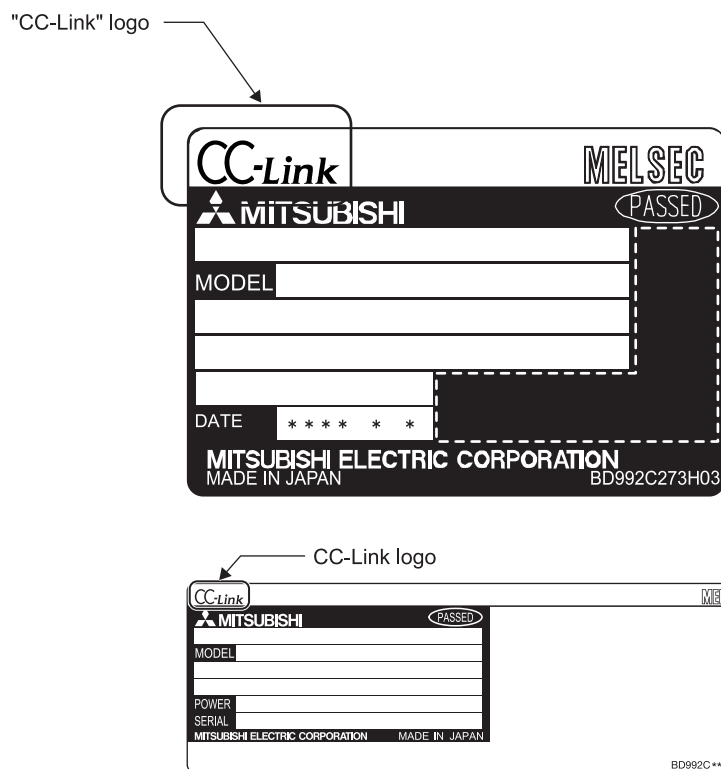
## (2) Checking a version

Ver.1.10-compatible modules have a "CC-Link" logo on the front of the module or on the rating plate.

## (a) On the front of the module



## (b) On the rating plate



# MEMO

[illegible]

# WARRANTY

Please confirm the following product warranty details before using this product.

## 1. Gratis Warranty Term and Gratis Warranty Range

If any faults or defects (hereinafter "Failure") found to be the responsibility of Mitsubishi occurs during use of the product within the gratis warranty term, the product shall be repaired at no cost via the sales representative or Mitsubishi Service Company.

However, if repairs are required onsite at domestic or overseas location, expenses to send an engineer will be solely at the customer's discretion. Mitsubishi shall not be held responsible for any re-commissioning, maintenance, or testing on-site that involves replacement of the failed module.

### [Gratis Warranty Term]

The gratis warranty term of the product shall be for one year after the date of purchase or delivery to a designated place. Note that after manufacture and shipment from Mitsubishi, the maximum distribution period shall be six (6) months, and the longest gratis warranty term after manufacturing shall be eighteen (18) months. The gratis warranty term of repair parts shall not exceed the gratis warranty term before repairs.

### [Gratis Warranty Range]

- (1) The range shall be limited to normal use within the usage state, usage methods and usage environment, etc., which follow the conditions and precautions, etc., given in the instruction manual, user's manual and caution labels on the product.
- (2) Even within the gratis warranty term, repairs shall be charged for in the following cases.
  1. Failure occurring from inappropriate storage or handling, carelessness or negligence by the user. Failure caused by the user's hardware or software design.
  2. Failure caused by unapproved modifications, etc., to the product by the user.
  3. When the Mitsubishi product is assembled into a user's device, Failure that could have been avoided if functions or structures, judged as necessary in the legal safety measures the user's device is subject to or as necessary by industry standards, had been provided.
  4. Failure that could have been avoided if consumable parts (battery, backlight, fuse, etc.) designated in the instruction manual had been correctly serviced or replaced.
  5. Failure caused by external irresistible forces such as fires or abnormal voltages, and Failure caused by force majeure such as earthquakes, lightning, wind and water damage.
  6. Failure caused by reasons unpredictable by scientific technology standards at time of shipment from Mitsubishi.
  7. Any other failure found not to be the responsibility of Mitsubishi or that admitted not to be so by the user.

## 2. Onerous repair term after discontinuation of production

- (1) Mitsubishi shall accept onerous product repairs for seven (7) years after production of the product is discontinued. Discontinuation of production shall be notified with Mitsubishi Technical Bulletins, etc.
- (2) Product supply (including repair parts) is not available after production is discontinued.

## 3. Overseas service

Overseas, repairs shall be accepted by Mitsubishi's local overseas FA Center. Note that the repair conditions at each FA Center may differ.

## 4. Exclusion of loss in opportunity and secondary loss from warranty liability

Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation of damages caused by any cause found not to be the responsibility of Mitsubishi, loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products, special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products, replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.

## 5. Changes in product specifications

The specifications given in the catalogs, manuals or technical documents are subject to change without prior notice.



SH(NA)-4007-AG(1703)MEE

MODEL: CC-LINK-S-I/O-U-E

MODEL CODE: 13JL72

## **mitsubishi electric corporation**

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When exported from Japan, this manual does not require application to the  
Ministry of Economy, Trade and Industry for service transaction permission.

Specifications subject to change without notice.