



Instruction Manual

VIBTRONIC® Controller for Magnetic Vibrators and Compact Feeder Drives

Digital control SDE...-2



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2 About these instructions

2.1 Introduction and purpose

These instructions contain descriptions and important information for the safe and efficient use of the frequency control unit SFA...-3. The instructions are an integral part of the control unit and must be kept in the immediate vicinity of the place of use and accessible to personnel at all times. The instructions must be kept in a legible condition.

Personnel must have carefully read and understood these instructions before starting any work. The basic prerequisite for safe working is compliance with all safety and warning notices and instructions in this manual.

In addition to the instructions in this manual, the local accident prevention regulations and national health and safety regulations apply.

Illustrations are for basic understanding and may differ from the actual design of the control unit.

Original version - The original operating instructions are the German version. This is legally binding in all legal matters.

Equipment - When you purchased the control unit, you opted for a model with customised equipment. These operating instructions describe special equipment also offered by AViTEQ Vibrationstechnik GmbH and selected special accessories.

Actuality - The high level of safety and quality of AViTEQ

Vibrationstechnik GmbH is guaranteed by continuous further development of the design, equipment and accessories.

This may result in possible deviations between these operating instructions and your device. Errors cannot be ruled out either.

Therefore, no claims can be derived from the information, illustrations and descriptions.

2.2 Target group

These operating instructions are intended for the control system manufacturer who installs the control system and makes the electrical connection, as well as for the technician who commissions the installed magnetic vibrator.

Operator - any natural or legal person who uses the control system or on whose behalf the control system is used. The operator is responsible for ensuring that the operating instructions have been handed over to qualified personnel. The operator must ensure that the instructions have been read and understood by the personnel carrying out the work.

Qualified personnel - are persons who, on the basis of their training, experience, instruction and knowledge of relevant standards and regulations, accident prevention regulations and operating conditions, have been authorised by the person responsible for the safety of the system to carry out the required activities and are able to recognise and avoid potential hazards (definition for skilled workers in accordance with IEC 364).

2.3 Applicable documents

The following documents apply in addition to these instructions. Observe the information and instructions contained in and comply with them at all times:

- Dimension sheet
- Circuit diagram

2.4 Definition of terms

Term	Description
Control system	Digital phase control unit for electric solenoid drives in the alternating current network
Magnetic vibrator (MV)	Electromagnetic drive, freely positioned, which introduces a linear oscillating vibration into an elastically mounted working unit for the purpose of conveying/dosing bulk material
Small-parts conveyor drive (KF)	Electromagnetic compact drive, elastically mounted, which introduces a linear oscillating vibration into a working unit for the purpose of conveying/dosing bulk material
Working unit	Construction (channel, pipe, sieve, etc.) without mounted drive
Vibration unit	Working unit with drive (MV or KF)

Tab. 1: Definition of terms

2.5 Warning notes

Warnings are introduced by signal words that express the extent of the hazard. The signal words DANGER, WARNING and CAUTION characterise personal hazards. Personal hazards are also labelled with the general danger sign. . These warnings must be followed to avoid injury or death.

The signal word CAUTION indicates risks of material damage. The NOTICE for property damage is not preceded by a symbol..

Classification according to the severity of the hazard:

DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation which, if not avoided, could result in injury.

ATTENTION

Indicates measures to prevent damage to property.

INFORMATION

Indicates information on proper handling of the product.

2.6 Disclaimer

The information, data and notes contained in these operating instructions were up to date at the time of printing. The information, illustrations and descriptions in these operating instructions do not constitute a warranty for control units of the SDE...-2 series already supplied. The procedural instructions and circuit sections shown are suggestions whose applicability to the respective application must be checked. AViTEQ Vibrationstechnik GmbH assumes no liability for the suitability of the specified procedures and circuit suggestions.

No liability is accepted for damage and malfunctions caused by:

- Disregarding these operating instructions
- unauthorised modifications to the control unit
- operating errors
- improper work on and with the control unit

Report warranty claims to the manufacturer immediately after discovering the fault. The warranty is void in the event of

- improper use of the control unit
- improper work on and with the control unit

3 Safety

3.1 General safety information

The control unit corresponds to the state of the art at the time of delivery and is generally considered safe to operate. The control unit poses a risk if:

- unqualified personnel work on and with the control unit,
- the control unit is used improperly.

Then there is danger to:

- persons
- the control unit
- other property of the operator.

The control units must be designed in such a way that they fulfil their functions when properly installed and used as intended in fault-free operation and do not cause any danger to persons. This also applies to the interaction of the control unit with the overall system.

Take additional measures to limit the consequences of malfunctions that could cause danger to persons:

- Other independent devices that safeguard against possible malfunctions of the control unit.
- Electrical or non-electrical protective devices (e.g. interlocking or mechanical locks)
- System-wide measures

Take suitable measures to ensure that no material damage occurs if the control unit malfunctions.

DANGER

When mains voltage is present, there is a life-threatening voltage inside the control unit. Touching live components can be fatal! Before switching on the mains, make sure that there is no possibility of touching live parts! Check that all cable feeds and insulation are undamaged!

DANGER

Explosions can lead to life-threatening injuries and cause major damage to property! The controls of type: SD(E)...-2 must not be operated in areas in which explosive atmospheres in the form of dust, mist or gas-air mixtures can form.

WARNING

Observe the following points in particular to prevent potentially fatal injuries:

- Disconnect the supply voltage before assembly or disassembly work and when changing fuses or making changes to the system.
- Observe the accident prevention and safety regulations applicable to the specific application.
- Before commissioning, check that the rated voltage of the appliance matches the local mains voltage.
- Emergency stop devices must remain effective in all operating modes. Unlocking the emergency stop devices must not lead to an uncontrolled restart.

-
- The electrical connections must be covered!

Protective conductor connections must be checked for proper function after installation.

⚠ CAUTION

Risk of damage to the drive and/or the control unit!

With the controls described here, it is possible to set the resonance frequency of the connected oscillating device. In this case, even a low setpoint setting can lead to an impermissibly high oscillation amplitude on the oscillating device, so appropriate care must be taken. Stop operation of the magnet is not permitted, as this will damage and destroy the drive.

NOTICE

In order not to impair the effectiveness of the internal switch-on damping, a waiting time of 5 seconds must be observed after switching off the operating voltage before switching on again.

3.2 Intended use

The control units described here are electrical equipment for use in industrial systems. They are designed and intended for the operation and control of magnetic and small-parts conveyor drives for vibratory equipment (vibrating equipment). Operating conditions other than those described in this manual in chapter 4.3 are considered improper.

3.3 Operator obligations

The operator or his safety officer is obliged to

- to monitor compliance with all relevant regulations, instructions and laws,
- to ensure that only qualified personnel work on and with the control unit,
- to ensure that personnel have the operating instructions available for all relevant work and
- prohibit unqualified personnel from working on and with the control unit.

3.4 Personnel requirements

Only instructed and qualified personnel may work on and with the control unit. Minimum requirement: Qualified electrician or electrotechnically instructed person in accordance with **DIN EN 60204-1 (VDE 0113-1):2019-06**.

3.5 Hazard potential and residual risks

Only operate the control unit when it is in perfect condition. The permissible operating conditions and performance limits must be observed.

DANGER

The control device is a piece of equipment for use in industrial systems. During operation, this equipment has dangerous, live parts. All covers must therefore be fitted during operation to ensure protection against accidental contact.

CAUTION

The control unit generates heat during operation. There may be a risk of burns when touching the housing, depending on the operating conditions. Maintain sufficient safety distance from flammable materials.

NOTICE

Retrofitting, modifications or conversions of the control unit are generally prohibited. In any case, they require consultation with the manufacturer.

3.6 Directive Conformity

The SDE...-2 control units were developed in accordance with

- Machinery Directive 2006/42/EU;
- Low Voltage Directive 2014/35/EU and
- EMC Directive 2014/30/EU

developed and meet the requirements of the

- EN 60204-1:2019-06
- EN 61010-1:2020-03
- EN IEC 61000-6-2:2019
- EN IEC 61000-6-4:2019
- EN IEC 61326-1.

4 Product description

4.1 Function

VIBTRONIC® controllers of the SDE...-2 series are AC voltage controllers and operate according to the phase angle control principle. They were developed to operate magnetic vibrators (MV...) and compact feeder drives (KF...) from AViTEQ Vibrationstechnik GmbH. MV and KF, which together with a specific working unit form a vibration unit, are tuned to a basic frequency, see (output frequency Table 3). The control unit supplies the electromagnet with alternating voltage at the corresponding base frequency. The size of the voltage controls the drive power and is infinitely variable from 0...100%. The reduction in power is achieved by cutting the respective sine wave at the corresponding phase angle.

4.2 Features

- 4 sizes depending on the current consumption of the drive to be controlled. Grading according to max. current consumption: 6, 15, 25 and 50 amps
- SDE06: Plastic housing for direct mounting rail attachment
- SDE15/25/50: Metal housing with plug connectors for electrical connection
- AViTEQ actuators for direct selection stored completely parameterised
- Mains frequency-dependent output frequency (Tab. 3)
- Constant delivery rate with mains voltage fluctuations
- AC/DC wide-range power supply for all common mains voltages
- Real-time clock with power reserve of at least 7 days (168 h)
- Setpoint specification: 0...10 (24) V, 0 (4) ...20 mA
- 100BaseT Ethernet RJ45 interface for operation via web interface
- Master/slave mode for special operating modes parallel and reverse operation
- AViCAN field bus interface for linking up to 11 control units
- USB interface for firmware updates and parameter import/export

4.3 Operating conditions

Parameter	Value for all controller types
Installation position	Hanging vertically – Ventilation openings at the top and bottom
Ambient temperature Installation version	- 5... + 60°C (Use enclosure heating against moisture from condensation during operation < 5°C and pressure equalisation device against accumulated moisture)
Ambient temperature Housing design	- 5... + 40°C (Switch cabinet heating during operation < 5°C and do not expose to direct sunlight)
Storage temperature	-25 ... + 65°C
Humidity	max. 80% , non-condensing
Installation height	max. 2.000m üNN (>1.000m Power reduction from 1% /100m)
Contamination category	Contamination degree 2 according to EN 61010-1 (normal ambient conditions) Switch box min. IP 54
Overvoltage category	Category II according to EN 61010-1 - Devices for direct connection or connection with mains cable, but not for installation in power distribution systems
Condition of surroundings	No potentially explosive atmosphere! Operation in the vicinity of mists, vapours, gas or dust/air mixtures is not permitted.

Tab. 2: Operating conditions

4.4 General view

4.4.1 SDE06/01-2 and SDE06/GW-02



Fig. 1: View SDE06/GW-2 left and SDE06/01-2 right

4.4.2 SDE25/...-2



Fig. 2: View SDE25...-2 left: Front side | right: Bottom side

4.5 Scope of delivery

The scope of delivery includes:

- Control unit(s) SD(E).../-2
- Potentiometer set 1k Ω with scale and knob (art. no. 36051)
- Accessories if required (chapter 4.6)

NOTICE

Scope of delivery and defects

Check immediately upon receipt of the delivery whether the scope of delivery corresponds to the accompanying documents. The manufacturer accepts no liability for defects that are subsequently claimed.

4.6 Accessories

Accessories for the size 06:

- Gateway SDE06/GW-2 incl. T-BUS connector set Item no. 36050
- T-BUS connector set, item no. 36050, for AViCAN networking with gateway
NOTE: 1 connector set per controller in master/slave mode plus one additional set as a placeholder after every second controller.

Accessories for the sizes 15/25/50:

- Mounting rail assembly set Art.-Nr. 36053
- AViCAN connection cable set Art.-Nr. 36052 for AViCAN networking

5 Technical data

5.1 Performance data

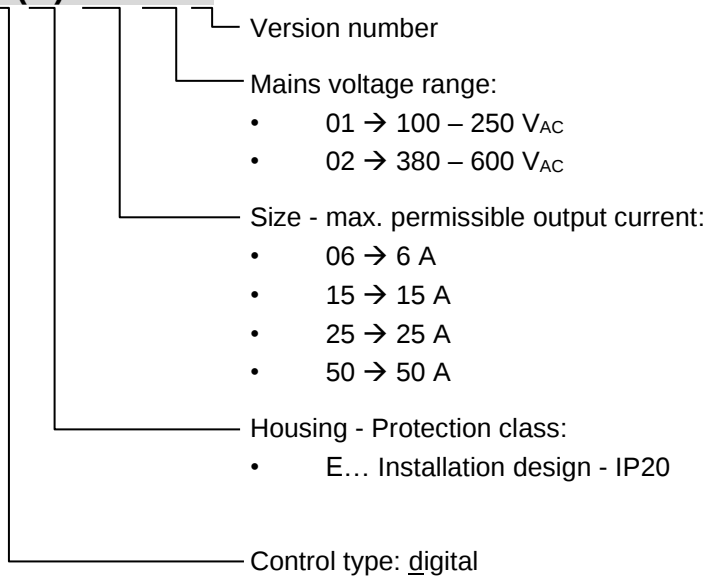
Parameter	SDE06/01-2	SDE15/01-2	SDE25/01-2	SDE15/02-2	SDE25/02-2	SDE50/02-2
Mains frequencies	50 / 60 Hz +/-0,5%					
Output frequencies in 50 Hz mains	25 / 33 ⅓ / 50 / 100 Hz					
Oscillation frequencies in the 50 Hz network	1500 / 2000 / 3000 / 6000 min-1					
Output frequencies in 60 Hz mains	30 / 40 / 60 / 120 Hz					
Oscillation frequencies in the 60 Hz network	1800 / 2400 / 3600 / 7200 min-1					
Input voltage	100 (-15%) ...250 (+6%) V _{AC}			380 (-15%) ...600 (+4%) V _{AC}		
Rated current	6 A	15 A	25 A	15 A	25 A	50 A
Max. Power loss in the switch cabinet	14 W	31 W	35 W	45 W	50 W	95 W
Leakage current (DGUV V3)	0,25 mA at 240 V _{AC}	0,90 mA at 240 V _{AC}	1,30 mA at 240 V _{AC}	1,60 mA at 400 V _{AC}	2,60 mA at 400 V _{AC}	5,00 mA at 400 V _{AC}
Short-circuit current	3,5 kA	5,1 kA	19,1 kA	5,9 kA	22,5 kA	30,5 kA
Standby power consumption	< 5,0 W			< 8,0 W		

Tab. 3: Technical data - Performance data

5.2 Type code

The control units are available in different sizes and versions. The type designation contains the following information.

SD(E) 25/01-2



5.3 Type plate

The type plate (e.g. Fig. 3) is located on the side housing of the control unit.



INFORMATION

- QR code on the left:
Operating instructions
- QR code on the right:
Serial number display

Fig. 3: Type plate

5.4 Dimensions

5.4.1 SDE06/01-2

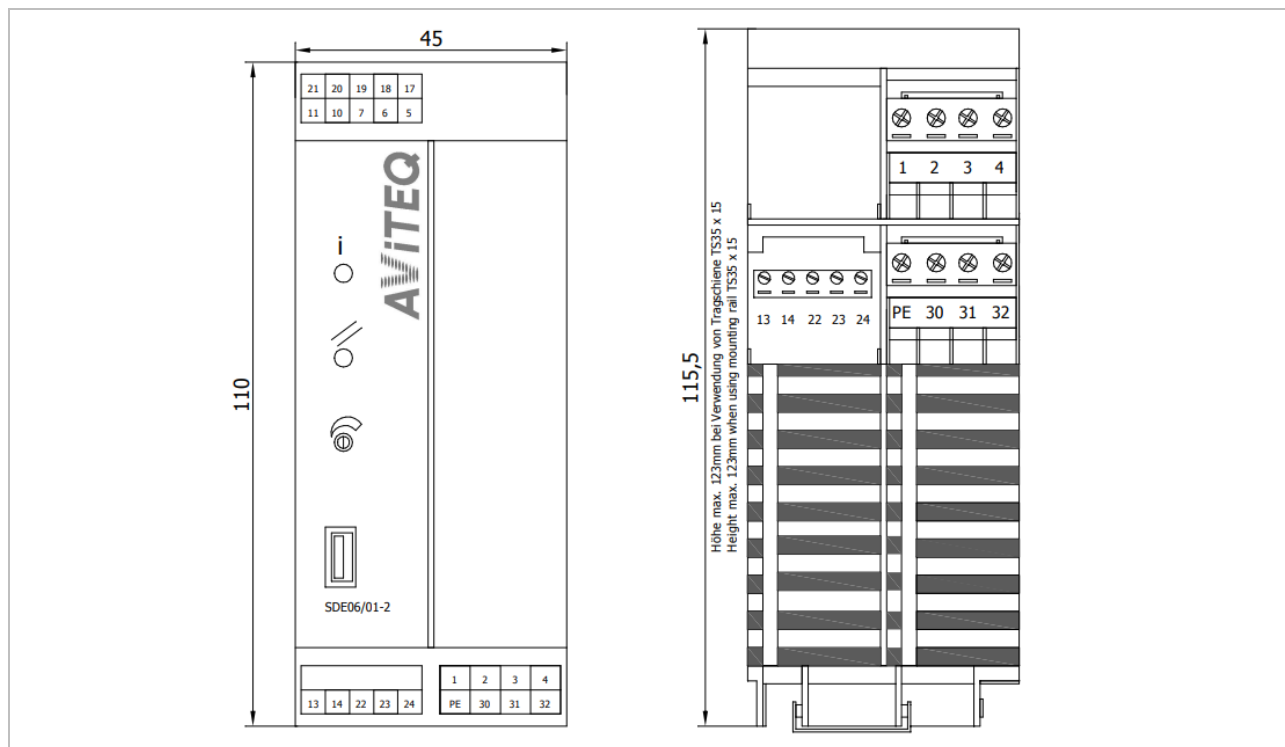


Fig. 4: Dimensions SDE06/01-2 – left front view - right bottom view

5.4.2 SDE06/GW-2

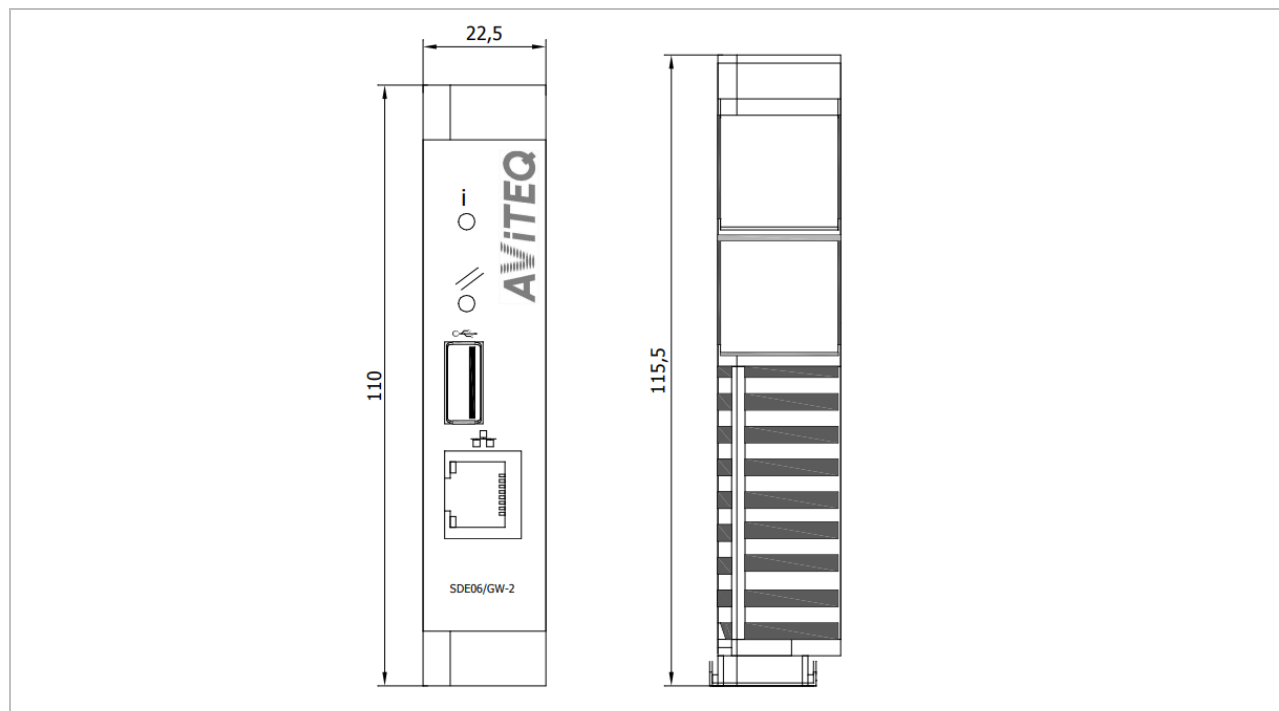


Fig. 5: Dimensions SDE06/GW-2 – left front view - right bottom view

5.4.3 SDE15/...-2

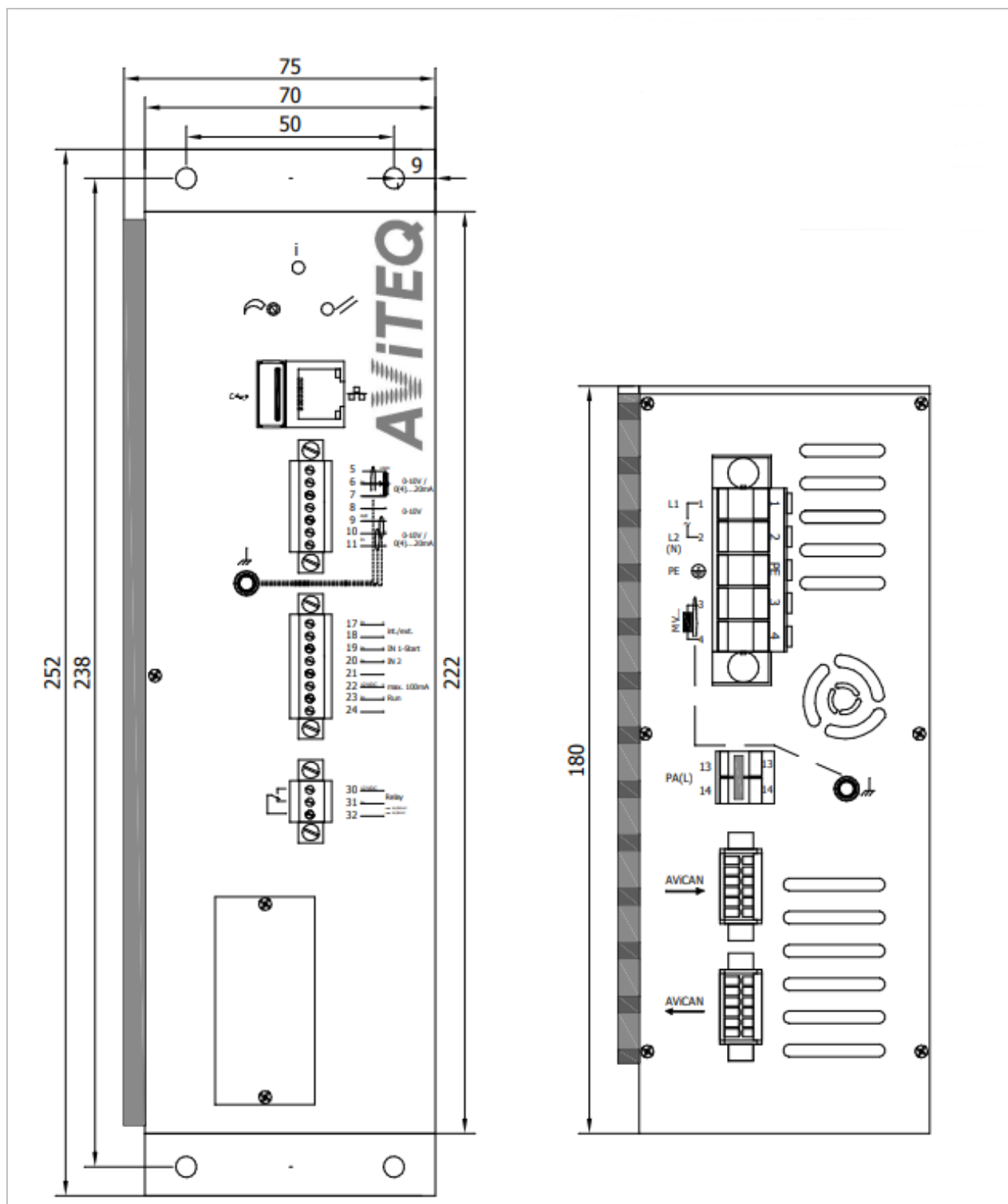


Fig. 6: Dimensions SDE15/...-2 – left front view - right bottom view

5.4.4 SDE25/...-2

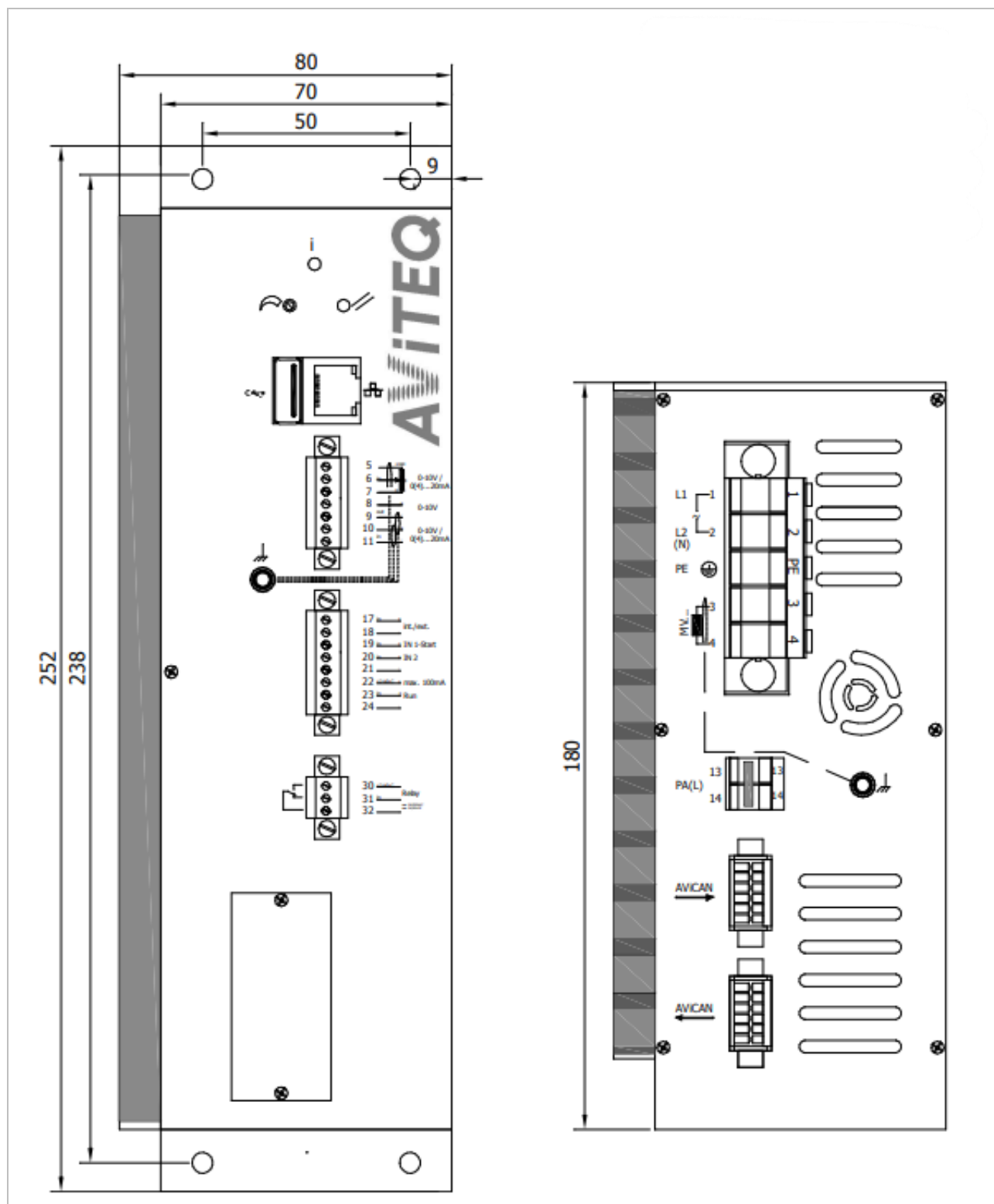


Fig. 7: Dimensions SDE25/...-2 – left front view - right bottom view

5.4.5 SDE50/...-2

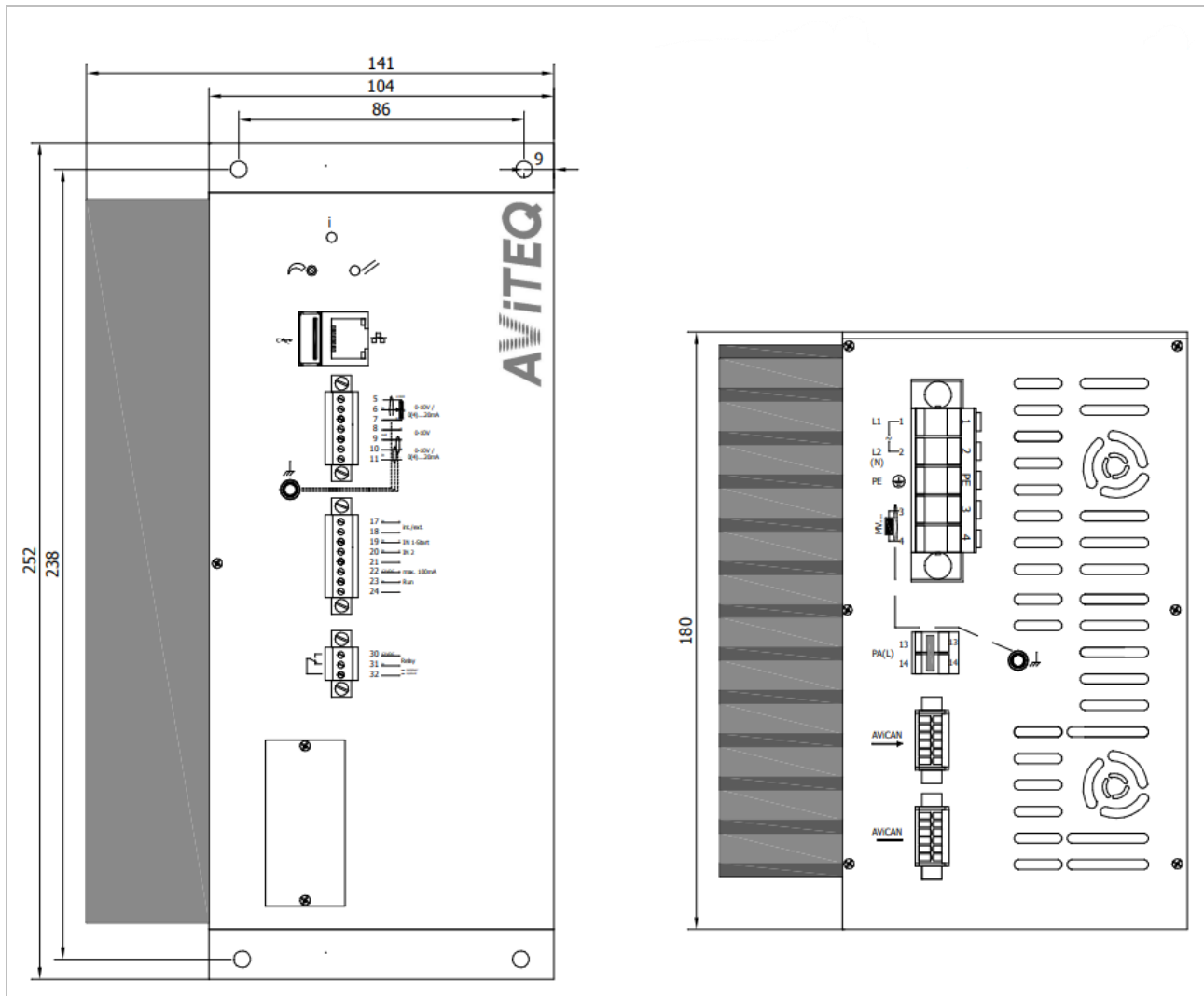


Fig. 8: Dimensions SDE50/...-2 – left front view – right bottom view

6 Transport and Storage

6.1 Transport

Delivery: The control units and their accessories are delivered by us in appropriate packaging so that they reach their destination undamaged.

NOTICE

If the outer packaging shows signs of severe damage that indicate damage to the contents, please contact the carrier! When proceeding further, please observe the terms and conditions of the forwarding agent so as not to lose the right to claim compensation due to formal errors.

6.2 Storage

If no separate agreements have been made regarding packaging and storage, the devices must be stored and transported, with or without packaging, under 'normal' conditions. This means: only in closed rooms, at temperatures between -25°C and

+65°C, relative humidity maximum 80% (no condensation), and free from shock and vibration.

⚠ CAUTION

The devices may be permanently damaged if stored and transported under unauthorised conditions. The damage may not be recognisable from the outside. AViTEQ Vibrationstechnik GmbH rejects the warranty in this case and is not liable for the consequences.

7 Assembly and Commissioning

7.1 Assembly

In the built-in version, the control unit must be installed inside a switch cabinet housing.

Check that the local mains voltage matches that of the device (rating plate information) and that the connected load of the vibratory drive is within the permissible power range.

⚠ CAUTION

Risk of damage to the control unit! During installation, ensure that the devices are mounted on a surface that is as vibration-free as possible. Also ensure that there is sufficient air circulation to prevent the control unit from overheating.

ATTENTION

- Do not exceed the permissible range of the operating ambient temperature (Chap. 4.3)
- The control unit contains electrostatically sensitive components. Before carrying out installation and service work in the area of the connection terminals, personnel must discharge themselves of electrostatic charges. The discharge can be discharged by touching an earthed metal surface beforehand.
- A corresponding line protection fuse is required to protect the supply line
- Setpoint inputs must be laid with shielded cables.
- Generously dimension the cable cross-sections accordingly!
- Observe local safety regulations!

NOTICE

Installation and electrical connection may only be carried out by a qualified electrician or appropriately trained and instructed person.

7.1.1 Installation version SDE06

Size 06 is mounted by clamping it onto a mounting rail (TS35x7.5 according to EN 60175) and securing it on both sides with end holders. Mounting rail and end holders are not included in the scope of delivery.

The T-BUS connector set is required for networking the gateway and control unit(s) (chapter 4.6 Accessories).

Minimum distances:

- 25 mm upwards and downwards
- 22,5 mm laterally after two controls → T-bus adapter as placeholder

Installation sequence for AViCAN networking:

1. Snap all T-BUS connectors onto the mounting rail. Number of BUS connectors: No. of SDE06 + 1 (GW) + X placeholders (after every 2nd control)
2. Push together to establish electrical contact
3. Engage and fix the end clamp on the left-hand side so that the contact area of the first BUS connector is covered.
4. Engage and secure the right-hand end bracket
5. Left-hand engagement of the SDE06/GW-2
6. Snap the control unit(s) into the T-bus slots, connect electrically and configure in sequence via the web interface, as per chapter 9.4.2.15.

NOTICE

Installation sequence for master/slave setup (AViCAN)

Integration and configuration is carried out via the web interface. This requires the Ethernet setup and connection to a computer (chapter 9.1).

NOTICE

Proper earthing

The control units may only be installed on metallic mounting rails. These must be earthed directly or indirectly (to PE).

7.1.2 Installation version SDE15/25/50

For mounting sizes 15, 25 and 50, use the mounting holes specified in chapter 5.4 and 4 M5 threaded washers according to DIN 125 and spring washers according to DIN 127.

An optional mounting rail bracket can be used as a mounting aid see chapter 4.6 Accessories). This allows the control unit to be easily positioned for marking the mounting holes.

NOTICE

Incorrect installation of sizes 15, 25 and 50

The mounting rail bracket serves exclusively as a mounting aid. Fastening the control units via the mounting rail bracket without screwing the four fastening points is not permitted.

** DANGER**

Danger of short circuit

No metal chips may enter the housing. The control unit must be removed from the mounting rail before drilling and tapping!

NOTICE

Power loss

The minimum clearances for switch cabinet installation must be observed and the ventilation slots must be kept clear. The ambient temperature at the control unit must be limited to max. 60°C, if necessary with an active cooling system.

Minimum distances for mounting in the switch cabinet:

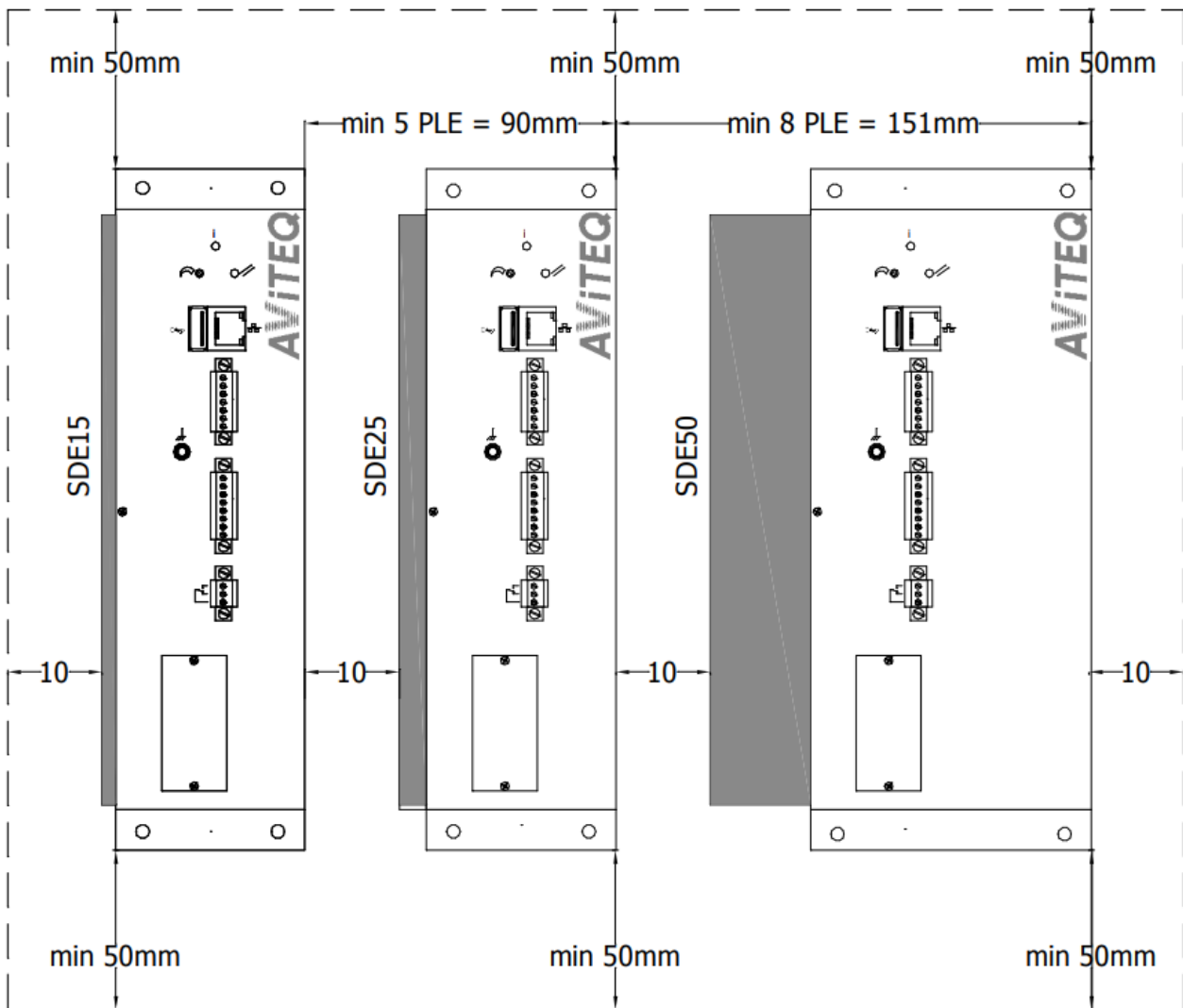


Fig. 9: Mounting controls SDE15/25/50: Min. dist. for switch cabinet installation

7.2 Electrical connection

7.2.1 EMC-compliant connection

To ensure electromagnetic compatibility (EMC) in your enclosures in electrically harsh environments, the following EMC rules must be observed during design and installation:

NOTICE

- All metal parts of the switch cabinet must be connected to each other with good conductivity. (Not paint on paint!) If necessary, use contact or scratch discs. The enclosure door must be connected to the enclosure as briefly as possible via the earth straps (top, centre, bottom).
- Signal cables and power cables must be laid separately from each other to avoid coupling distances. Minimum distance: 20 cm.
- Unshielded cables in the same circuit (outgoing and return conductors) should be twisted if possible.
- Contactors, relays and solenoid valves in the cabinet, if necessary in neighbouring cabinets, must be wired with extinguishing combinations; e.g. with RC elements, varistors, diodes.
- The shields of shielded cables must be connected to earth¹⁾ on both sides (source and destination), over a large area and with good conductivity. If there is poor potential equalisation between the shield connections, an additional equalising conductor of at least 10 mm² must be laid parallel to the shield to reduce the shield current.
- Do not route wiring freely in the enclosure, but as close as possible to the enclosure housing or mounting plates. This also applies to spare cables. These must be connected to earth at least at one end, preferably at both ends (additional shielding effect).
- Unnecessary cable lengths should be avoided. This keeps coupling capacitances and inductances to a minimum.
- The shielding of supply cables must be connected to the housing earth. In the area where cables are routed into the housing, the insulation must be removed to expose the braided shield. The braided shield must not be damaged during exposure. The cable must be routed through terminals or clamps connected to earth at the exposed point.
- Use high-quality cables with low shielding capacitance.
- Lay shielded cables without interruption. Avoid unnecessary terminal points and connectors. Ensure continuous shielding even with plug connectors.

¹⁾ Earth is generally defined as all metallically conductive parts that can be connected to a protective conductor, e.g. enclosure housing, motor housing, foundation earth, etc.

7.2.2 Mains connection

Connection requirements:

- Mains voltage and frequency according to the specifications of the control unit used
- Mains with separate PE - Mains type TNS or TNC-S
- On-site mains fuse protection

Check the control unit data before connecting.

The technical data can be found

- the type plate of the control unit
- the performance data specified in chapter 5.1
- the additional information in the wiring diagram

The mains connection is located on the underside of the control units. The SDE15/25/50 types are equipped with plug-in terminal strips that must be locked after connection and plugging in.

NOTICE

Loosening the plug connection

The PCB connectors must be locked after connection:

- SDE15: Rocking lever
- SDE25/50 Screw connection

The mains connection may only be made using suitable core conductors; please refer to the relevant standard (e.g. DIN VDE 0298-4:2023-06) for the required connection cross-section for the device size.

The cable ends must be fitted with wire end ferrules with anti-kink collars. If two cores are clamped together, a double wire end ferrule must be used. Check in advance whether two cores can be accommodated in the screw terminal.

The maximum clampable cross-sections are:

- | | |
|----------|---------------------|
| • SDE06: | 2.5 mm ² |
| • SDE15: | 2.5 mm ² |
| • SDE25: | 6 mm ² |
| • SDE50: | 16 mm ² |

ATTENTION

Damage to the semiconductors

As semiconductor protection, the control units **must be** protected on site with a suitable fuse. **The tripping characteristic 'gRL(gS)' of the fuses must be observed.**

Recommendation: Fuse holder for top-hat rail mounting from SIBA, URZ series, with fuse cartridges 10x38mm or 22x58mm, with the tripping characteristic 'gRL(gS)' and a max. operating voltage of 690V (suitable type specification in the wiring diagram).

All control units must be connected with a separate fuse. The neutral conductor must **NOT** be fused.

If several control units are installed, ensure even load distribution.

Exception: Special operating modes synchronous/reversing operation: In this case, it is **IMPERATIVE** to ensure that all control units involved (up to 11 units) are connected in phase. In this case, check the resulting unbalanced load.

Example Germany: Maximum permissible unbalanced load on the public power grid: 4.6kVA.

NOTICE

No emergency shutdown system

The control units in the SDE series do **not** have an emergency shutdown system that fulfils the higher requirements for an EMERGENCY STOP system (DIN EN 60204-1 and others).

If required by local safety requirements, an emergency shutdown system must be installed on site.

7.2.3 Magnetic connection

The cable cross-section must be designed in the same way as the mains connection. The PE protective conductor of the mains and solenoid connection can be combined using a double-wire end sleeve.

Special feature SDE06: Return conductor (V) - terminal 5 - internally connected to neutral conductor mains - terminal 2 - via current measuring resistor.

NOTICE

Signal interference

Cable lengths should be kept as short as possible, maximum 30 m.

For cable lengths greater than 30 m (MV, PAL), shielded cables must be used and confirmed by additional measurements at the destination.

 CAUTION

When using a shielded cable, the braided shield must not be used as a protective earth conductor (PE).

NOTICE

Special case: If several magnetic vibrators are connected in parallel to one control unit, they must each be protected against overload by a separate fuse. To do this, connect terminal (4) to the fuses and from there to the magnetic vibrator. The fuse must be dimensioned according to the rated current and rated mains voltage of the magnetic vibrator.

7.2.4 Terminal assignment

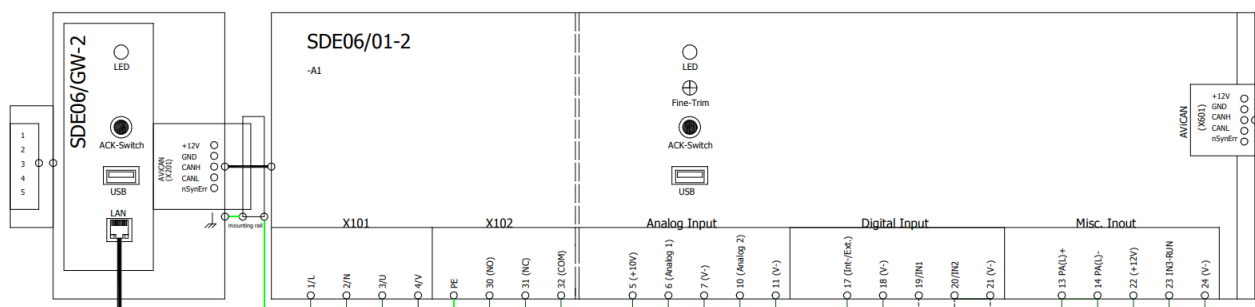


Fig. 10: Pin assignment SDE06/01-2 with SDE06/GW-2

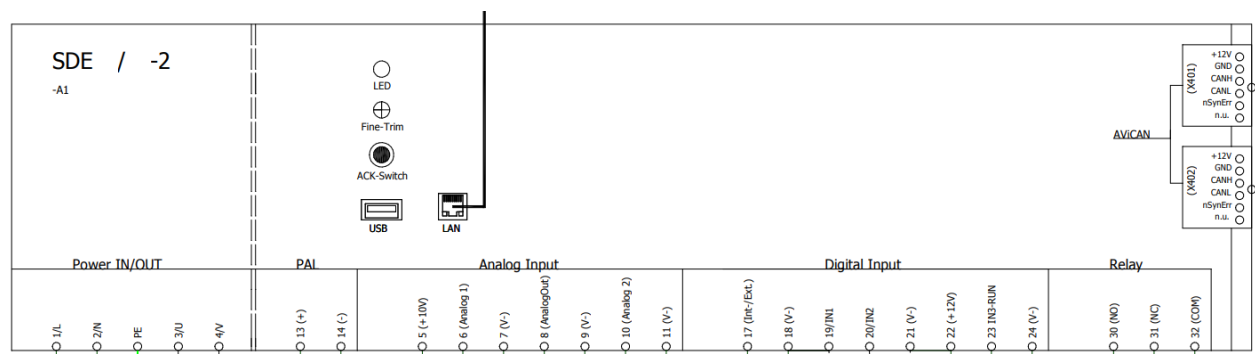


Fig. 11: Pin assignment SDE15/25/50...-2

Pin assignment		
Clamp	Function	Comment (Cxx - Website parameter)
1 / 2 / PE	Power input	Mains connection (C59; C60)
3 / 4 / PE	Power output	Magnetic connection (C14; C22)
5 / 6 / 7	Analogue input 1 (internal)	Reference variable Potentiometer (C10; C41)
8 / 9	Analogue output	External display or signal processing SPS
10 / 11	Analogue input 2 (external)	Reference variable (C10; C13; C41)
13 / 14	Analogue input PAL	Sensor vibration amplitude limitation (C19; C68)
17 / 18	Digital input (int./ext.)	Analogue input circuit 1 or 2 (C10)
19 / 21	Digital input IN1	START/STOP
20 / 21	Digital input IN2	Release (C09)
22 / 23 / 24	Digital input IN3	Proximity sensor / light barrier (C11; C12)
30 / 31 / 32	Signalling relay output	Message states Inactive / Error / Operation (C62)

Tab. 4: Pin assignment

Mains connection SDE.../01-2		
Clamp	Function	Comment
1 (L)	Netz 100 – 250 V _{AC}	Mains input secure with 6/16/32/63 A-690 V gRL(gS)
2 (N)		Neutral conductor
PE	Grounding	Mains protective conductor

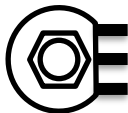
Tab. 5: Mains connection 100-250 V

Mains connection SDE.../02-2		
Clamp	Function	Comment
1 (L)	Netz 380 – 600 V _{AC}	Mains conductor 1 secure with 6/16/32/63 A-690 V gRL(gS)
2 (L)		Mains conductor 2 secure with 6/16/32/63 A-690 V gRL(gS)
PE	Grounding	Mains protective conductor

Tab. 6: Mains connection 380-600 V

Magnetic connection		
Clamp	Function	Comment
3 (U)	Phase angle signal	Magnetic connection (BN)
4 (V)	Return conductor	Magnetic connection (BU)
PE	Grounding	Earth conductor magnet

Tab. 7: Connection Magnetic vibrator

Analogue input 1 (internal)					
Clamp	Function	Comment			
5	Supply	10 V		3 - E	Potentiometer 1 kΩ
6	Signal input	Analogue 1		2 - S	
7	GND	(-)		1 - A	

Tab. 8: Connection Analogue input 1 - Potentiometer

Analogue output SDE15/25/50...-2		
Clamp	Function	Comment
8	Setpoint output	0-10 V (loadable up to max. 50 mA)
9	GND	Reference potential

Tab. 9: Connection Analogue output 0-10 V

Analogue input 2 (external)		
Clamp	Function	Comment
10	Signal input	0 – 10 V or 0 (4) – 20 mA
11	GND	Reference potential

Tab. 10: Connection Analogue input 2 – 0-10 V / 0(4)-20 mA

Analogue input PAL		
Clamp	Function	Comment
13	Signal output	6 V DC (BK)
14	Signal input	AC / DC (GY)

Tab. 11: Connection Analogue input PAL

Digital input int./ext.		
Clamp	Function	Comment
17	Signal input	Circuit analogue input 1 or 2 (active low) • 1: Potentiometer – Internal, terminals 5-6-7 • 2: PLC – External, terminals 10-11
18	GND	Reference potential

Tab. 12: Connection Digital input Int/Ext

Digital input IN1		
Clamp	Function	Comment
19	Signal input IN1	Release input START (active low)
21	GND	Reference potential

Tab. 13: Connection Digital input IN1 – START/STOP

Digital input IN2		
Clamp	Function	Comment
20	Signal input IN2	Utilisation: STOP/ EMERGENCY STOP/ Reverse
21	GND	Reference potential

Tab. 14: Connection Digital input IN2 - Release

Digital input IN3		
Clamp	Function	Comment
22	Supply	Operating voltage output 12 V _{DC} / 100 mA (BN)
23	Signal input IN3	Proximity sensor or light barrier (BK)
24	GND	Reference potential (BU)

Tab. 15: Connection Digital input IN3 - Sensor

Signalling relay output			
Clamp	Function	Comment	
30	NO*	Normally open	Circuit max. 3 A – 30 V _{DC} / 250 V _{AC}
31	NC*	Normally closed	
32	COM	Together	

Tab. 16: Connection of signalling relay Inactive / fault / operating states

*... NO and NC functionally invertible via website parameter C26; see chapter 9.4.2.5

7.3 Commissioning

7.3.1 Notes on commissioning

Commissioning of the control unit in conjunction with a vibration system with magnetic vibration drive requires proper installation of all components involved in the process. The operating instructions for the drive and the vibration device must have been read and understood in advance. The tuning of the vibration system according to the characteristic curve and its elastic mounting are of particular importance:

NOTICE

The operation of the control unit by parameterising the relevant values is described in chapter 9.4.2.

7.3.2 Commissioning AViTEQ magnetic vibrator

For the commissioning of AViTEQ magnetic vibrators, the settings for all drives are stored in the operating software (website). The selection list can be found under parameter C92.

When commissioning with an AViTEQ magnetic vibrator, follow the commissioning steps in the corresponding chapter in the operating instructions for the magnetic vibrator.

7.3.3 Commissioning external drive

In the case of magnetic vibrators and/or vibratory feeders not supplied by AViTEQ Vibrationstechnik, consistent behaviour of the control system cannot be guaranteed within the scope of these operating instructions. AViTEQ Vibrationstechnik accepts no responsibility for the proper functioning of the control unit.

For commissioning, please refer to the operating instructions for the third-party drive. The following instructions should also be observed:

Requirement: Completed assembly of the vibratory bowl feeder with magnetic vibrator and EMC-compliant electrical connection of the control unit.

NOTICE

Defect possible

Before switching on the control unit, the correct parameters must be entered in the basic settings. See chapter 9.4.2.3

NOTICE

Risk of electrical or mechanical overload when switching on

The setpoint for the vibrator voltage must be set to the lowest value, regardless of the source. Only then should the control unit be switched on.

NOTICE

Risk of electrical or mechanical overload during adjustment

Increase the oscillation amplitude by gradually turning the potentiometer or by increasing the external reference variable until the maximum value (right stop or scale value '10' on the potentiometer or maximum external reference value) is reached.

NOTICE

Danger before stop operation

If the vibrator voltage is too high, the pole surfaces of the armature and magnet will hit each other with a loud, hammering noise. Reduce the setpoint until the noise disappears. Then additionally turn back the fine correction potentiometer on the control unit by half a turn.

NOTICE

Limits of the electrical characteristic values

Measurement of vibrator voltage, current consumption and vibration amplitude (chapter 7.3.4) and comparison with the default values of the external drive.

The permissible measured values for vibrator current and voltage according to the rating plate must not be exceeded!

If the manufacturer's specified vibration amplitude is not achieved, the natural frequency of the vibrator may need to be checked.

7.3.4 Measurements

A check measurement of the vibrator voltage and current consumption must be carried out during commissioning. We also recommend measuring the vibration amplitude and comparing it with the characteristic curve of the magnetic vibrator. AVITEQ recommends the following measuring devices for this purpose:

Measurement output voltage magnetic vibrator:

- Digital multimeter with true rms measurement (True RMS)
- Bandwidth 500 Hz in the AC voltage measuring range
- Measurement at terminal 3 and 4
- Setting to nominal vibrator voltage U_{VN}

Measurement of current consumption of magnetic vibrator:

- Current clamp with measuring range AC+DC (True-RMS)
- Bandwidth 500 Hz
- Measuring range 10A / 20A switchable to 100A / 200A
- Set the zero value correctly before measuring
- Measurement on power cable magnetic vibrator

Measurement of amplitude

- Electronic vibration amplitude measuring device ESM200

NOTICE

Display inaccuracy Website

The display for the output voltage on the website is for information purposes and is not a substitute for the measurement to be carried out. It is a calculated value that is subject to certain inaccuracies.

8 Operating and Display elements

8.1 Installation version SDE

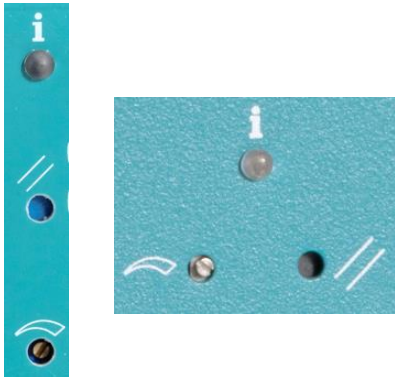


Fig. 12: Operating and display elements

The illustration on the left shows the operating and display elements on the SDE06 and SDE15/25/50, which are each located on the front and are labelled as follows:

1. (⤿) Fine correction potentiometer
2. (//) ACKnowledge Button (Acknowledge button)
3. (i) LED display for various operating statuses

The function and application are described below.

8.1.1 Fine correction - potentiometer



The fine correction potentiometer with +/- 4.5 turns allows the solenoid voltage to be adjusted by a factor of 1 - 15% of the set value. The factor can be changed in parameter C41 - Chapter 9.4.2.9 - 'Additional settings' - and is set to 5% (corresponds to 1.11% per revolution) at the factory. Recommended tool: small screwdriver.

NOTICE

The setting of the fine correction potentiometer affects all setpoint sources, analogue input 1, analogue input 2 and web address C30.

8.1.2 ACKnowledge Button



The ACKnowledge button is slightly reset so that it cannot be pressed accidentally. It is labelled with the adjacent symbol and fulfils the following two functions:

1. Acknowledgement of an error in the highest category after it has been rectified
2. Firmware updates without web interface (see chapter 9.6.3)

ATTENTION

Avoidance of damage

To operate the button, you will need a screwdriver with a maximum blade width of 2.5 mm or a biro. Only apply light pressure to the button to avoid damaging the control unit.

8.1.3 HMI LED operating status display

The HMI LED informs the operator about various operating statuses. The LED is labelled with the letter 'i'. The following two tables provide information on the colour and flash coding in operating and bootloader mode (USB interface chapter 9.6):

Operating mode			
Code		Information	Instruction for action
	flashing alternately	Initialisation after switching on the control unit	Wait until  lights up permanently
	glowing	Control unit on standby	Start command required
	glowing	Control ready but stopped by setpoint specification 0% or control inputs	Setpoint greater than 0%, or enable control inputs
	pulsating	Operation - Activation of magnetic vibrator with setpoint greater than 0%	none
	fast flashing	Low category error Magnetic vibrator continues to be activated	Errors can disappear automatically
	flashing alternately	Medium category error Magnetic vibrator is stopped	Correct error and restart No acknowledgement required
	glowing	High category error Magnetic vibrator is stopped	Correct and acknowledge error (ACK button) Restart control unit
	flashing alternately	Error in the programme memory Occurs directly after switching on	Troubleshooting not possible Contact AVITEQ Service
	flashing	SLAVE control on standby	Control command expected from MASTER control unit

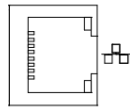
Tab. 17: Display HMI LED Operating statuses Operating mode

Bootloader mode (USB interface)			
Code		Information	Instruction for action
	flashing alternately	Bootloader mode	Automatic query for valid BIN file on USB stick
	glowing	Deleting the internal programme memory	Wait a few seconds, automatic process
	flashing	Firmware update is performed	Wait a few seconds, automatic process
	glowing	Firmware update successful	Wait until  lights up permanently
	glowing	Problem occurred during firmware update	Check the file and file name on the UBS stick according to chapter 9.6.2

Tab. 18: Display HMI LED Operating states Bootloader mode (USB)

9 Operation

9.1 Access web interface



The control unit is configured using operating software that can be accessed as a web interface via a PC with the latest operating system. For this purpose, an Ethernet connection must be set up using a network cable. The control unit is equipped with a corresponding RJ45 Ethernet connection on the front (Fig. left).

Requirement: Properly installed and connected control unit.

NOTICE

The SDE06/...-2 control unit also requires the **SDE06/GW-2** gateway module, which is equipped with a network connection, for configuration. The control unit and the gateway are connected to each other via the AViCAN fieldbus.

9.1.1 Ethernet setup

Connect the computer and the controller with a network cable and configure the computer's network adapter, here using Windows® 10 as an example:

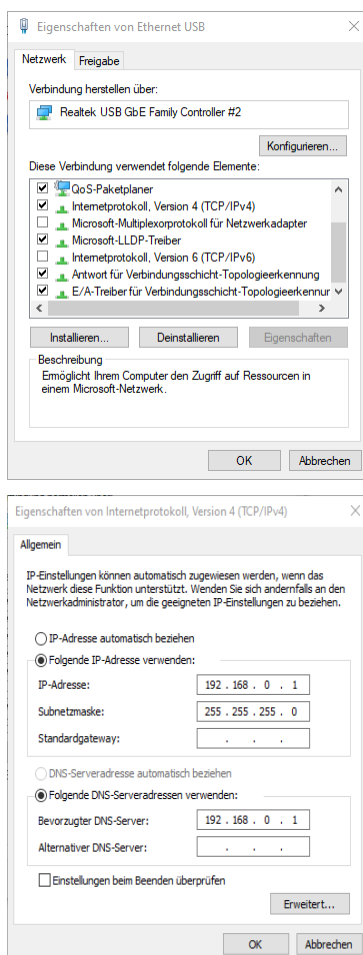


Fig. 13: Network configuration

1. Accessing system settings
→ 'Network and Internet'
2. Then under 'Advanced network settings'
→ "Change adapter" options.
3. Click on the relevant network adapter
→ Right mouse button → Select 'Properties'.
View window as shown in the image above left.
4. Deactivating 'Internet Protocol, version 6 (TCP/IPv6)'
5. Activate 'Internet protocol, version 4 (TCP/IPv4)'
6. Call up the administration page via the 'Properties' button
View window as shown in the image above left.
7. Enter the following digits:
 - IP-adress: **192.168.0.1**
 - Subnet mask: **255.255.255.0**
 - DNS-Serveradresse: **192.168.0.1**
8. Finalise by clicking the button 'OK'

The web interface is now called up as follows:

Enter the URL 'http://192.168.0.10' in the address bar of a browser

After opening the web interface, the control device can be configured directly or integrated into your network first (see chapter 9.1.2).

NOTICE

„Access to URL with IP addresses blocked“,

If messages from an antivirus solution with web protection module or a company-wide firewall/security solution appear in the web browser, please contact your IT system administrator.

NOTICE

The control units can only be reached via the manually assigned IP address or the IP address assigned by a DHCP server. If DHCP is used, the name must be assigned manually in your DNS server.

9.1.2 Integration into existing network

Log in to the web interface as 'User Admin' (see chapter 9.3).

Then edit the parameters in the 'Ethernet network settings' block, see chapter 9.4.2.14, in the 'Settings' subpage.

You have two options here:

1. Activate the DHCP client with parameter C101.
Advantage: The control unit can still be accessed with the default parameters if the direct connection to the computer is repeated.
2. Manual IP assignment of the parameters C102, C103 und C104

NOTICE

If the DHCP client is deactivated, the 30-second waiting time for using the stored IP data is omitted.

TIP: Make a note of the assigned IP address on the respective control unit.

When the control unit is restarted, the data is used directly. Restarting the device: via Mains OFF/ON or the 'Restart device' button in the 'System info' menu.

To do this, the control unit must be connected to your network and access to the web interface must be available. The computer used must be connected to this network.

In this case, you can only access the control unit by entering „<http://www.xxx.yyy.zzz>“ in the address bar of the web browser.

NOTICE

If you have activated the DHCP client, you must now check your DNS server to see which IP address has been assigned to the control device. The device does not currently register with a DNS name - you must then manually assign this to the device in your DNS system.

Please note the special characters possible in the DNS. For example, the type designation of the control units cannot be adopted directly. The '/' character is not supported in the DNS.

You can only access the device in your web browser after manually assigning a name with „<http://devicename>“.

Repeat this procedure for all devices of sizes SDE15/25/50.

Control units of size SDE06: The procedure is almost identical, but here you first integrate only one Ethernet AViCAN gateway SDE06/GW-2 into the Ethernet network for a maximum of 11 devices of type SDE06/0.-2.

9.2 Start page

After calling up the web interface, the following start page appears. The elements and functions are described in the following chapters.

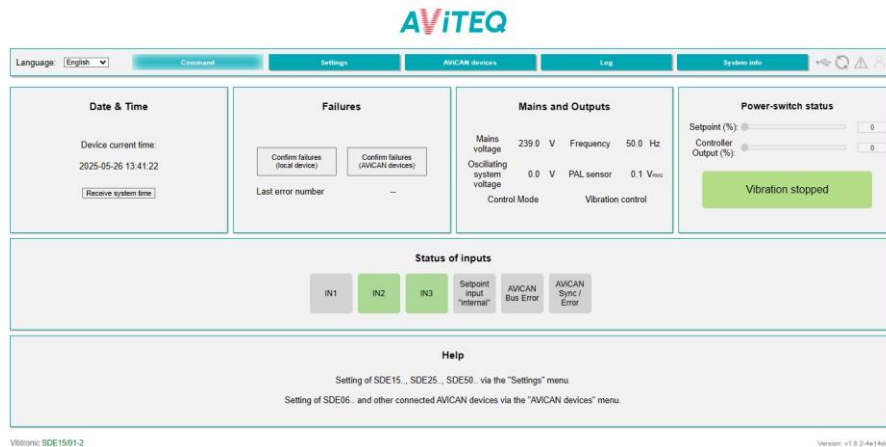


Fig. 14: Home page web interface

9.2.1 Elements of the web interface

1. AViTEQ Logo → link to www.aviteq.com
2. Menu bar – Language setting, menu buttons, status icons
3. Display and control panel of the menu functions
4. Display: type of control and version status Firmware SDE15/25/50 and -06/GW-2. Version status SDE06/01-2 can be called up via parameter C64.



Fig. 15: Web interface elements

9.2.2 Menu bar

The menu bar consists of the following elements:

1. Language setting
2. Menu buttons
3. Status icons



Fig. 16: Elements of the menu bar

9.2.2.1 Language

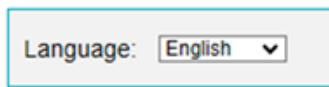


Fig. 17: Language setting

Setting the language in the drop-down menu:

- German
- English
- French

9.2.2.2 Menu buttons

The menu buttons for navigating the software and configuring the control unit are located in the centre of the menu bar:

- Operation (Homepage)
- Setting (parameterisation)
- AViCAN devices (networking of control systems)
- Log (recording error)
- System info (service)

The operation of the menus is described in chapter 9.4.

9.2.2.3 Four status icons



Fig. 18: Status icons
Menu bar

- **USB** symbol appears **blue**, when the USB stick is inserted and recognised
- The **semi-circle arrow** symbol appears **green**, if a valid FW version is available on the USB memory stick. During the search, the symbol appears in **orange**.
- **Attention** symbol appears in **red**, when an error message is active.
- **User** symbol - Click to access user administration (chapter 9.3).

9.3 User administration



User administration is used for the user-related specification of read and write authorisations in the control configuration. Clicking on the user icon in the menu bar opens the 'User login' dialogue:

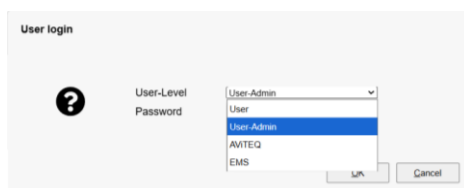


Fig. 19: User administration: „User login“

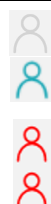
User level

- **User**
- **User-Admin**
- **AViTEQ**
- **EMS**

Registration

- User without password
- User with password
- AViTEQ Service
- Development level

Symbol colour



Login: Enter the supplied password and confirm with 'Next'. After successful login, the user icon changes colour.

Log out: Select user level 'User' and confirm with 'Next'.

NOTICE

Data protection notice:

For security reasons, changes to parameters are documented in the log lists with a time stamp, user level, parameter number and the newly entered value. This is for quality assurance and traceability purposes, e.g. in the event of misuse of the 'User Admin'. AViTEQ Vibrationstechnik GmbH reserves the right to delete log data.

⚠ WARNING

Risk of injury and destruction: Misuse as 'User-Admin'

The 'User-Admin' password is supplied in a separate document. This may only be passed on to trained and authorised specialist personnel in order to prevent accidental or deliberate misuse.

Under no circumstances may the password be noted in a freely accessible location!

9.4 Operation menus

9.4.1 Operation

Fig. 20 shows the 'Operation' button menu on the start screen. It contains six input and information blocks:

- Block 1 – Date and time
- Block 2 – Error
- Block 3 – Mains voltage and outputs
- Block 4 – Status display
- Block 5 – Status of the inputs
- Block 6 – Help

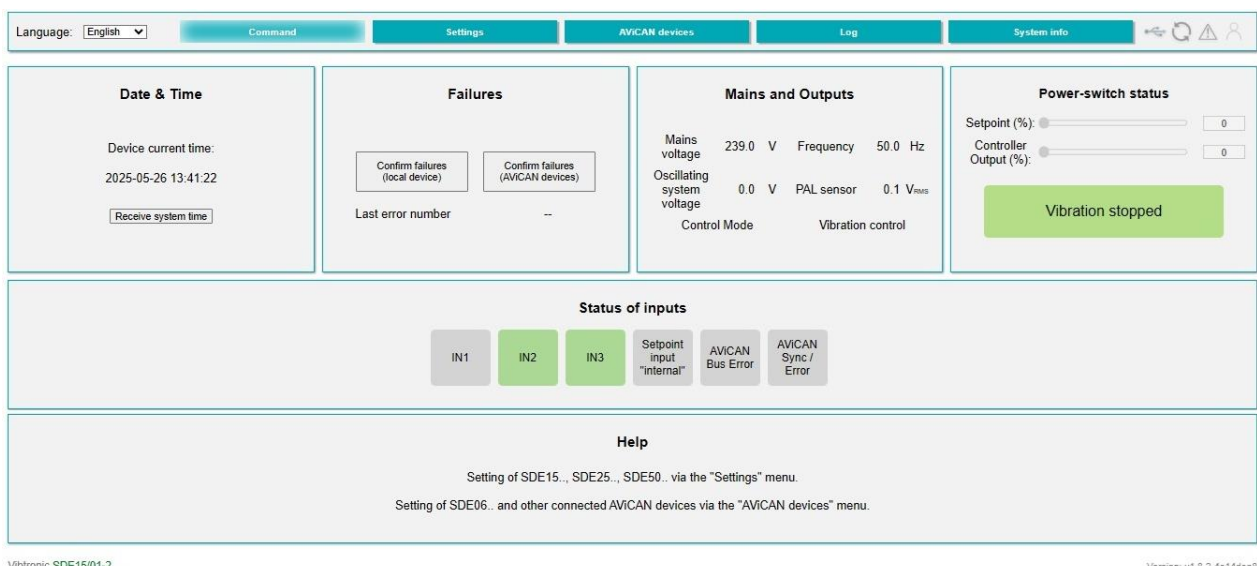


Fig. 20: Menu Operation

9.4.1.1 Block 1 – Date and time

Display of date and time of the control unit.

- Click on the 'Apply system time' button to synchronise the time of the computer used with the time on the control unit

9.4.1.2 Block 2 – Error

In the case of error status (Attention symbol in menu line appears **red**), the current error number '**Mxx**' (chapter 10.2) is displayed here with a time stamp.

- "**Acknowledge error**" button: High category errors are acknowledged after rectification using this button.

9.4.1.3 Block 3 – Mains voltage and outputs

Display of the most important operating data, permanently updated:

- Mains voltage
- Mains frequency
- Oscillating system voltage (calculated value)
- Operating modes
- PAL - Sensor (actual value voltage of the amplitude)

9.4.1.4 Block 4 – Status display

Bar display of the output power and numerical value 0...100 %.

Operating status display panel:

- „Vibration OFF“
- „**Vibration ON**“

9.4.1.5 Block 5 – Status of the inputs

Status display of the digital inputs. Fields appear **GREEN**, if input is active:

- IN1 (Start/Stop)
- IN2 (Release)
- IN3 (Light barrier/proximity sensor)
- Int/Ext (Default analogue input1 „Local“ oder 2 „Remote“)

Error status display of the AViCAN network. Fields appear **RED** at:

- Status AViCAN bus error
- Status AViCAN Sync / error (display for error messages M30-M34, see chapter 10.2)

9.4.1.6 Block 6 – Help

Display of relevant help texts.

9.4.2 Setting

Use the 'Settings' menu button to carry out the technical configuration of the control unit. A list of 14 configuration blocks is displayed in the main field, the operation of which is described in the following chapters.

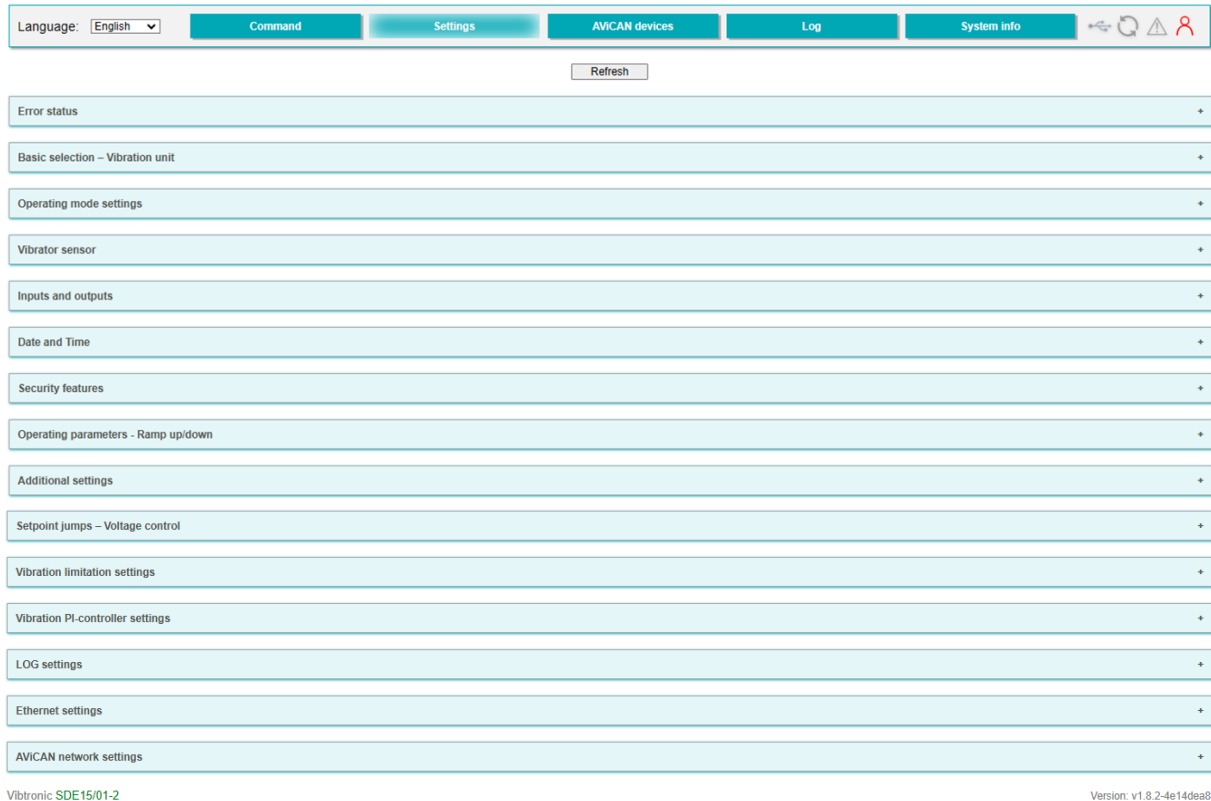


Fig. 21: Menu Settings

Instructions for use:

- "Refresh" button in the top centre - Reloads the menu page. All open blocks are closed.
- After entering/changing a value, the „**Apply**“ button is highlighted in turquoise blue. Click on this button to apply the value.
- The „**Reset**“ button highlighted in turquoise blue indicates that the currently stored value does NOT correspond to the default value.
- Both buttons are marked **GREY** : the respective parameter has not been changed and corresponds to the factory default value of the control unit.
- Values in **bold** in the block tables correspond to the default setting.

9.4.2.1 Error status

This block is functionally identical to block 2 from the 'Operation' menu, chapter 9.4.1.2.

Error status					
<i>ID</i>	<i>Name</i>	<i>Description</i>	<i>Value</i>	<i>Unit</i>	<i>Notes</i>
C36	Current failure status	Indicates the current failure level	Field		- No error - Failure status low / medium / high
C37	Time of last stored failure	Time stamp and error number Mxx	Value		Here you can see when the error condition occurred.
C38	Failure acknowledge	Acknowledge of the current failure	Set / click field		Apply by clicking on the now active button „Apply“

Tab. 19: Setting „Error status“

9.4.2.2 Basic selection - Vibration unit

In this block, select the **AVITEQ magnetic vibrator** that is operated with this control unit. If a drive is not listed, please contact AVITEQ.

Basic selection - Vibration unit					
<i>ID</i>	<i>Name</i>	<i>Description</i>	<i>Value</i>	<i>Unit</i>	<i>Notes</i>
C92	Drive unit type selection	Selection of vibration units - type	List		The list is limited to drives that can be driven with this control unit.

Tab. 20: Setting „Basic selection - Vibration unit“

9.4.2.3 Operating mode settings

All settings relevant to operation are set in the Operating mode settings block. These must always be checked and adjusted if necessary. When selecting an AViTEQ magnetic vibrator via ID C92, these settings are set automatically.

Operating mode settings					
ID	Name	Description	Value	Unit	Notes
C04	Operating type	Control / pilot control / regulation operating mode	Voltage control Vibration amplitude control		Voltage regulation: Compensation of mains voltage fluctuations for constant amplitude. - Oscillation amplitude control: Limiting the oscillation amplitude with sensor "PAL"
C06	Operating mode	Operating mode when several controllers are connected via the AViCAN fieldbus	Synchronised operation Reversing operation		Special operating mode Definition of device function (see chapter 9.5.2)
C05	Operating role	Operating role in parallel or reversing mode	Standalone Master Slave		- Select Standalone if the control device is not to work in conjunction with others. - Master/slave in special operating mode (see chapter 9.5)
C60	Mains nominal voltage	Mains nominal voltage for error monitoring	100-600 (230/250)	V _{AC}	- Input nominal/nominal value of the mains voltage - not the real/measured value - Required for fault monitoring and oscillation amplitude correction in the event of mains voltage fluctuations
C59	Mains nominal frequency	Mains nominal frequency for error monitoring	50 60	Hz	Be sure to enter the correct value!
C14	Maximum value control range	Maximum value of the control range of the output voltage, related to the analogue input	50 (0-600)	-	For the nominal maximum voltage value for the magnetic vibrator, refer to the technical data for the magnetic vibrator.
C22	Vibration frequency drive	2F - 100 Hz / 120 Hz - F - 50 Hz / 60 Hz 2F/3 - 33.3 Hz / 40 Hz - F/2 - 25 Hz / 30 Hz	Selection list		Setting the magnetic vibrator oscillation frequency CAUTION: Incorrect setting can cause the MV to malfunction.

Tab. 21: Setting „Operating mode settings“

9.4.2.4 Vibrator sensor

The PAL sensor is calibrated to 100% ex works. This means that the maximum amplitude corresponds to 100% of the actual value signal - either 8V or 10V.

C68 allows the maximum amplitude to be reduced as a percentage in PAL mode:

Vibrator sensor					
ID	Name	Description	Value	Unit	Notes
C19	PA/L vibration sensor	Select the characteristics of the vibration sensor	PA or PAL - 10V / PA or PAL - 8V		- PA without-, PAL with temperature switch 8V / 10 V Nominal output voltage of the signal at nominal amplitude
C68	PA/L Maximum double amplitude vibration sensor	Sets the limit of vibration amplitude to C68 x C19	80	%	Only valid for vibration amplitude control. PAL sensor required!

Tab. 22: Setting „Vibrator Sensor“

9.4.2.5 Inputs and outputs

The setting and (de)activation of the inputs and outputs of the control unit is organised in this block as follows:

Inputs and outputs					
ID	Name	Description	Value	Unit	Notes
C10	Setpoint source	Setpoint defined via analogue input 1/2 or web-parameter C30	Internal / External Website		Internal / External: Setpoint via analogue input 1 (potentiometer) OR analogue input 2 (setpoint remote control) - Website: Parameters C30 (Chapter 9.4.2.9)
C09	Enable input IN2	Defines the behaviour linked to the Enable (IN2) input	Input deactivated		Input deactivated
			Interrupt vibration		- Oscillating unit is stopped (soft stop) - Restart if this input is inactive and the START (IN1) signal is reissued
			Reverse function		Causes phase shift of the horizontal drive by 180°
			Emergency stop function		Same as stop function without soft stop Input NPN switching
C11	Light barrier / proximity-switch input IN3	Defines the behaviour linked to the Light barrier / proximity-switch input (IN3) input	Input deactivated		Similar C09 But: Input is PNP switching
			Interrupt vibration		
			Reverse function		
			Emergency stop		
C12	Light barrier / proximity switch polarity	Polarity of the Light barrier / proximity switch input	Active high		Input active when voltage is present.
			Active low		Input active when no voltage is present.
C13	Analog input 2	Setpoint input 2 - operating mode Failure detection enabled on 4-20mA	0-10 V 0-20 mA 4-20 mA		Before configuring to current input (...mA), check that the signal is present.
C62	Potential-free relay contact	Assign a function to the potential-free relay	OFF Failure Operation		Relay reacts to.....
C26	Reverse relay polarity	Polarity of the potential-free relay output	set not set		If polarity has been reversed (☒ set), the relay is energised at rest.
C55*	Control curve setpoint input (ASE)	Kink point of the characteristic curve	10 (10-30)	%	Define inflection point of the setpoint characteristic 1st value: Setpoint input (ASE)
C56*	Control curve setpoint output (ASA)	Kink point of the characteristic curve	10 (5-95)	%	Define inflection point of the setpoint characteristic 2nd value: Setpoint output (ASA)

Tab. 23: Setting „Inputs and outputs“

***...C55 und C56:** These parameters are used to set a higher setpoint resolution of the vibrator voltage in the medium and upper power range for drives **without PAL control**.

The linear setpoint input characteristic curve is divided into a new control curve with two regions by defining an inflection point:

- Region 1: increased gradient to reach the process-relevant upper output range in region 2 more quickly
- Region 2: reduced gradient for finer adjustment of the throughput.

Example (Fig. 22): Default C55/C56 = 10/35.

NOTICE: The highest resolution is achieved with the 30/95 setting.

NOTICE: For **PAL** actuators (oscillation amplitude control) default setting **10/10**.

NOTICE: When selecting an AViTEQ drive, C56 is set automatically.

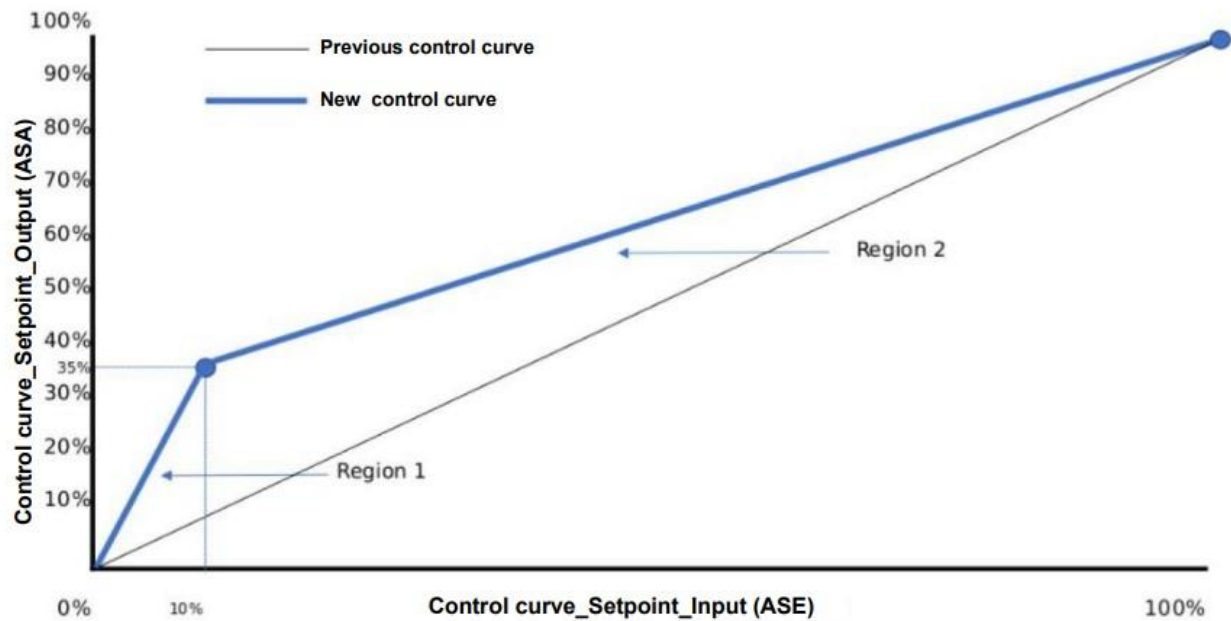


Fig. 22: Exampel Parameter C55=10, C56=35

9.4.2.6 Date and time

NOTICE

The time must be set in order to obtain real entries in the log lists.
Otherwise, it runs starting from the start date 2000.01.01.

For directly networked control units, the time can be set via the button in block 1, Operation menu (see chap. 9.4.1). For AViCAN-networked control units, the time can only be set via parameter C83.

C83: To set the date and time, enter numbers in the specified format (including hyphens and spaces), then click on „[Apply](#)“ to write them to the control unit.

Date and time					
ID	Name	Description	Value	Unit	Notes
C83	Date and time	Devices date and time	5 2024-08-02 12:04:53		Format: W YYYY-MM-DD hh:mm:ss
					• W Weekday 1...7 (1 = monday) • YYYY Year (20YY) • MM Month (00...12) • DD Day (01...31) • hh Hour (00...23) • mm Minute (00...59) • ss Second (00...59)

Tab. 24: Setting „Date and time“

9.4.2.7 Security features

The values of Security features are set ex works. The values **cannot** be changed by the user admin:

Security features					
ID	Name	Description	Value	Unit	Notes
C20	Overload detection (Ampere)	Maximum permissible load current	xx	A	Is set ex works based on the control unit size
C21	Overload action ON / OFF	Action when load current reached	Shutdown OFF		Value set in the standard
C15	Internal temperature limit	Limit value of the internal temperature for shutdown or limitation	80	°C	Temperature sensor
C16	Internal temperature limit action	Action when internal limit temperature reached	Shutdown OFF		Value set in the standard
C17	Heat-sink temperature limit	Limit value of the heat-sink temperature for shutdown or limitation	80	°C	Temperature sensor
C18	Heat-sink temperature limit action	Action when heat-sink limit reached	Shutdown OFF		Value set in the standard

Tab. 25: Setting „Security features“

ATTENTION

Changing the values of Security features can lead to the destruction of the appliance.

9.4.2.8 Operating parameters – Ramp up/down

Operating parameters – Ramp up/down					
ID	Name	Description	Value	Unit	Notes
C28	Soft start	Soft start Activate/deactivate	Active Inactive		Replaces switching time of analogue control
C29	Soft stop	Soft stop Activate/deactivate	Active Inactive		
C73	Soft -start / -stop step level	Increase / decrease PWM step value [%/step]	30	%	Soft -start / -stop percentage value
C74	Soft -start / -stop step duration	Step duration time [ms]	90	ms	Soft -start / -stop increment

Tab. 26: Setting „Operating parameters – Ramp up/down“

NOTICE

Short-term stop operation possible

Parameters C28 and C29 must always be set to active in order to prevent the solenoid and armature from striking mechanically when switching on or off. C73 and C74 define the shape of the start/stop ramp.

9.4.2.9 Additional settings

Additional settings					
ID	Name	Description	Value	Unit	Notes
C27	Fan speed monitoring	Fan control ON/OFF (activation with missing fan leads to error M87)	Active Inactive		- No fans are installed in the control units as standard. - Not configurable for user admin
C30	Software setpoint in percent	Software setpoint for control unit	Value	0.1%	C10 → „Website“ = C30 Value range 0-1000 equals 0.0 – 100.0%
C41	Fine tuning	Fine tuning trimmer range to adjust output voltage	5	%	Adjustment range fine trim potentiometer: - Setting range 1-15 (see chapter 8.1.1) - Default: +/-4.5 turns = +/- 5
C75	Reverse operation	Dead-time duration between stop and reversed restart	5	x 100 ms	For special operating mode 'Reverse operation' (chapter 9.5.2.2)
C93	Compensating factor	Multiplication factor Mains voltage correction	0.5		Pre-control for stabilizing the stroke in case of mains voltage deviations

Tab. 27: Setting „Additional settings“

9.4.2.10 Vibration limitation settings

The vibration limitation is automatically activated if an amplitude sensor PAL is connected and supplies an actual value signal. Parameters C69-C72 are used to configure the vibration amplitude limitation.

ATTENTION

Stop operation possible due to excessive overshoot
Select control parameters so that the drive does not overshoot.

NOTICE

Practical tip: reduce quickly if the target value is exceeded (C69 and C70) and increase slowly if the value falls below it (C71 and C72).

The values should be optimised empirically. The response time in particular quickly leads to a 'pump effect', i.e. an audible control oscillation, which should be avoided at all costs.

Vibration limitation settings					
ID	Name	Description	Value	Unit	Notes
C69	PA/L limitation step-down ratio	Driving-ratio step-down [%]	2	%	/
C70	PA/L limitation step-down duration	Step-down duration Factor of ½ period time of the mains frequency	20		20 x 10 ms at 50Hz
C71	PA/L limitation step-up ratio	Driving-ratio step-up [%]	1	%	/
C72	PA/L limitation step-up duration	Step-up duration Factor of ½ period time of the mains frequency	40		40 x 10 ms at 50Hz

Tab. 28: Setting „Vibration limitation settings“

9.4.2.11 Setpoint jumps – Voltage control

This block contains control parameters that are used to prevent stop operation in the event of sudden setpoint changes. The effectiveness of the respective parameter is explained in examples below the table.

Setpoint jumps - Voltage control					
ID	Name	Description	Value	Unit	Notes
C95	Threshold	Threshold value in [%]	10	%	Here: Effectiveness of this function for setpoint changes of more than 10 %. Setting range 1- 100 %
C96	Step ratio	Step ratio [%]	1	%	Setpoint level per time unit of the maximum range (100 %). Setting range 1 - 10 %
C97	Step duration	Step duration [ms]	40	ms	Setting range 20 – 200 ms

Tab. 29: Setting „Setpoint jumps - Voltage control“

- **Example 1:** C95 = 10%, C96 = 1%, C97 = 40ms
A setpoint jump of 5% occurs.
→ No control, as C95 > setpoint jump
- **Example 2:** C95 = 2%, C96 = 1%, C97 = 40ms
A setpoint jump of 5% occurs.
→ Regulation to ramp time $5 \times 40 \text{ ms} = 200 \text{ ms}$
- **Example 3:** C95 = 10%, C96 = 1%, C97 = 200ms
A setpoint jump of 100% occurs.
→ Regulation to ramp time $5 \times 100 \times 200 \text{ ms} = 100 \text{ s}$

Example 3 describes the maximum achievable ramp time, which is reduced by increasing C96 and decreasing C97.

NOTICE

Avoidance of stop operation

First reduce C97 before increasing C96 and avoid large setting steps for C95 and C96. Select small C95 and C96 and vary the ramp with C96.

9.4.2.12 Vibration PI-controller settings

This block is used to set the PID control parameters. The basic setting is adapted to most applications. Adjust only if necessary.

Vibration PI-controller settings					
ID	Name	Description	Value	Unit	Notes
C65	PI-controller Parameter K	Gain	0.14		Parameter K = amplification factor
C66	PI-controller Parameter Ti	Integration period	0.05		Parameter Ti = integration time

Tab. 30: Setting „Vibration PI-controller settings“

9.4.2.13 LOG settings

Manufacturer setting. Cannot be changed by 'User Admin'.

LOG settings					
<i>ID</i>	<i>Name</i>	<i>Description</i>	<i>Value</i>	<i>Unit</i>	<i>Notes</i>
C57	Short time log period	Short-term logging Period of log in seconds 0 disables logging	60	s	Log entry all 60 sec = 1 min
C58	Long time log period	Long-term logging Period of log in seconds 0 disables logging	900	s	Log entry all 900 sec = 15 min

Tab. 31: Setting „LOG settings“

9.4.2.14 Ethernet settings

Default settings allow a computer to access the control unit directly. After plugging in a network cable, the default values stored below are set if no IP data is supplied by a DHCP server in the network within 30 seconds.

For networking without DHCP function, your relevant network data for the control unit must be entered here. The DHCP client must be deactivated.

The control units only support IPv4.

IPv6 must be switched off for the network adapter.

If a computer is connected directly, it should be set to the standard IP address '192.168.0.1'.

Ethernet settings					
<i>ID</i>	<i>Name</i>	<i>Description</i>	<i>Value</i>	<i>Unit</i>	<i>Notes</i>
C101	DHCP Client	Enable/Disable DHCP client feature	Aktive Inaktive		/
C102	Static IP Address	Static IP address of the device	192.168.0.10		Only change the default value if the control unit is integrated into a network.
C103	Static IP Mask	-	255.255.255.0		/
C104	Static IP Gateway	-	192.168.0.1		/

Tab. 32: Setting „Ethernet settings“

9.4.2.15 AViCAN Network settings

This block is used to configure the AViCAN network for special operating modes and for web-based management of the control unit SDE06/01-2.

NOTICE

Operation not possible - error messages

Devices that are defined here must also be integrated in AViCAN. Otherwise operation is not possible.

AViCAN network settings					
ID	Name	Description	Value	Unit	Notes
C07	CANopen Node-ID	Devices – CANopen Node-ID	1 2 3 (4-12)		Defines the node ID of the control unit that is currently being configured: • 1: SDE06/GW-2 • 2 Default: SDE06/01-2 • 3 Default: SDE15/25/50...-2
C42	Main devices Node-ID	Main devices CANopen Node ID '0' if not available	0 (2)		• '2' defines the Master node ID • Entry of the parameter on all slave controllers (not on the master!)
C43	1. Slave Node-ID	1. Slave device CANopen Node ID	0 (3)		• '3....12' defines the Slave node ID • Entry on master control unit • '0', if not available
C44	2. Slave Node-ID	2. Slave device CANopen Node ID	0 (4)		
C45	3. Slave Node-ID	3. Slave device CANopen Node ID	0 (5)		
C46	4. Slave Node-ID	4. Slave device CANopen Node ID	0 (6)		
C47	5. Slave Node-ID	5. Slave device CANopen Node ID	0 (7)		
C48	6. Slave Node-ID	6. Slave device CANopen Node ID	0 (8)		
C49	7. Slave Node-ID	7. Slave device CANopen Node ID	0 (9)		
C50	8. Slave Node-ID	8. Slave device CANopen Node ID	0 (10)		
C51	9. Slave Node-ID	9. Slave device CANopen Node ID	0 (11)		
C52	10. Slave Node-ID	10. Slave device CANopen Node ID	0 (12)		
C61	CAN termination resistor	Enable CAN terminating resistor only on the first and last control unit in the AViCAN bus	Disabled Enabled		• Default Disabled : SDE15/25/50...-2 • Default Enabled : SDE06/GW-2

Tab. 33: Setting „AViCAN network settings“

9.4.3 AViCAN Devices

This menu is relevant if control devices have been networked via the AViCAN field bus and are managed via the master. After calling up the 'AViCAN devices' menu, the following interface appears:



Fig. 23: Menu AViCAN Devices

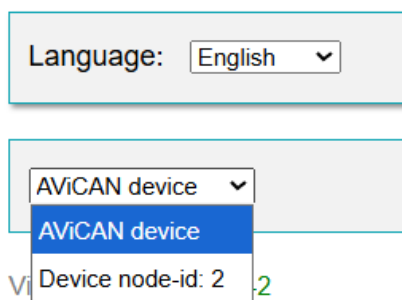


Fig. 24: Select AViCAN device

- By expanding the drop-down menu (left), all AViCAN-networked control units can be displayed.
- The desired control unit can be called up here to display the configuration.
- The parameters from the menus 'Settings' and 'System info' are displayed.
- Processing is carried out as described in chapters 9.4.2 and 9.4.5.
- The same user access restrictions and operating procedures apply.
- Use the 'Refresh' button to read out the currently selected control again.

NOTICE

Log data and status information CANNOT be called up for AViCAN-networked control units. The 'Operation' menu view cannot be called up here either.

9.4.4 Log

You can access the log area via the 'Log' menu button. As shown in the figure below, the 'Error log' list is always created and displayed first.

NOTICE

For longer log lists, calling up this menu can take several seconds. The data is read from the control unit (or gateway).

The log system is described in more detail in Chapter 10.4.

Language:
English

Command

Settings

AVICAN devices

Log

System info

errors log

Refresh

CSV Export

Date & Time	Node-Id	Message Code	Internal Temp.	Powerboard Temp.	Mains Voltage	Mains Frequency	Output Voltage	Output Current	Setpoint source	Internal setpoint	External setpoint range	External Setpoint	PAL VRMS
2000-01-04 22:07:50		AVITEQ logged in											
2000-01-04 20:07:21		AVITEQ logged in											
2000-01-01 00:11:38		Parameter C14 value changed to 220											
2000-01-01 00:11:11		Parameter C14 value changed to 200											
2000-01-01 00:10:07		Parameter C96 value changed to 10											
2000-01-01 00:09:38		Parameter C97 value changed to 20											
2000-01-01 00:08:29		Parameter C95 value changed to 50											
2000-01-01 00:06:48		Parameter C73 value changed to 30											
2000-01-01 00:05:14		Parameter C30 value changed to 1000											
2000-01-01 00:03:45		Parameter C04 value changed to 0											
2000-01-01 00:03:45		Parameter C14 value changed to 197											
2000-01-01 00:03:45		Parameter C92 value changed to 35											
2000-01-01 00:03:15		AVITEQ logged in											

Abb. 25: Menu Log – Fault-Log-List

The LOG lists always show the most recent entry at the top.

You can choose between the following log lists using the drop-down menu on the left:

- Error - Log
- Short term - Log
- Long term - Log

The displayed list is reloaded when the 'Refresh' button is pressed.

The 'CSV export' button allows you to read out the list.

Prerequisite: User level 'User-Admin' or higher.

9.4.5 System info

The 'System info' menu is used to visualise important information about the control unit. The following illustration appears after clicking on the menu button:



Abb. 26: Menu system info

The user classes 'User' and 'User Admin' have read-only rights here.

Viewing and editing the following blocks is reserved for AViTEQ

Vibrationstechnik GmbH:

- Administrator settings
- Diagnostic data
- Manufacturer settings

Button block framed in red:

The page is reloaded using the 'Refresh' button.

The two buttons in the red frame are active if a user with the 'User Admin' level or higher is logged in.

The 'Restart device' button performs a system reset and restarts the device.

After a short time, the device is ready for operation again - website access is delayed by approx. 30 seconds as a new DHCP request is initiated by the restart.

ATTENTION

Secondary hazard due to other system components

Before restarting, stop the device so that no oscillating unit is activated.

The 'Update device' button is required for firmware updates and is described in chapter 9.6.3 and chapter 9.6.4.

9.4.5.1 Administrator function

This function should only be carried out if the device has been repaired or is intended for another application.

Administrator function					
ID	Name	Description	Value	Unit	Notes
C03	Reset user settings	Erase memory content (log, errors, parameters)	Set		If the field is set, a complete reset to factory settings can be carried out using the 'Apply' button.

Tab. 34: System info „Administrator function“

9.4.5.2 Product information

Brief information on the device. Operating hours counter **not** reset by applying C03 (see above).

Product information					
ID	Name	Description	Value	Unit	Notes
C105	IP address currently	-	Cur.IP		Display current IP address
C01	Powered-on hours	Counts the time system is powered-on (connected to mains)	X	h	/
C02	Operating hours	Counts the time system is operating/active	Y	h	/

Tab. 35: System info „Product information“

9.4.5.3 Product identification

In this section you will find the data for the device - important information for servicing.

Product identification					
ID	Name	Description	Value	Unit	Notes
C63	Device type	Device type	Value		The device type is coded in the hardware and therefore cannot be changed.
C00	Serial number	Serial number of the control unit	Value		The SDE device family generally has consecutive serial numbers.
C64	Software version	/	Value		Is also displayed in the footer of the web interface.
C76	Logic board SN	Logic board manufacturer serial number	Value		Production data - Info on installed logic/control module
C77	Logic board PN	Logic board manufacturer production number	Value		Additional information on the installed logic/control module
C78	Power board SN	Power board manufacturer serial number	Value		Production data - Info on installed power module
C79	Power board PN	Power board manufacturer production number	Value		Additional information on the installed power module

Tab. 36: System info „Product identification“

9.4.5.4 Operating data

Summary overview of the current operating data for the control unit.

For AViCAN-networked devices - without a system overview of the start page - you will receive the operating data here as a snapshot, i.e. not updated cyclically:

Operating data					
ID	Name	Description	Value	Unit	Notes
C31	Modulation real value	Real value of the modulation	Value	%	Current pending setpoint
C32	Input voltage real value	Real value of the input voltage	Value	V _{AC}	Current mains voltage
C33	Output voltage real value	Real value of the output voltage	Value	V _{AC}	Control unit output voltage, magnetic vibrator voltage
-	Setpoint on input 1 (Analog-IN1)	Actual setpoint voltage on Analog input 1 (local)	Value	V	Range 0 - 10V corresponds to 0-100% setpoint, usually local potentiometer.
-	Setpoint on input 2 (Analog-IN2)	Actual setpoint voltage on Analog input 2 (external)	Value	V mA	Range 0 - 10V/0-20mA/4-20mA. 10V / 20mA / 16mA corresponds to setpoint 0-100% setpoint, usually remote control point (PLC).
C86	Internal temperature	-	Value	°C	Internal temperature of the control unit. Sensor in the front panel area.
C87	Power-board temperature	-	Value	°C	Temperature at the heat sink in the area of the power semiconductor. Not available for SDE06/01-2

Tab. 37: System info „Operating data“

9.4.5.5 Diagnostic data

Extended control information. Only relevant for repair/error diagnosis at the manufacturer, cannot be viewed beyond this.

Diagnostic data					
ID	Name	Description	Value	Unit	Notes
-	Internal voltage 12V	Internal regulator output voltage 12V	Value	V	Output voltage of the AC/DC power supply unit for the electronics supply and the inputs and outputs. Usually 12V.
-	Internal voltage 5V	Internal regulator output voltage 5V	Value	V	Internal operating voltage.
-	Light barrier / proximity-switch supply	Output voltage for light barrier supply	Value	V	Monitoring of the overload-protected output voltage for the sensor at digital input IN3. Usually without error at 12V.
-	PAL Vibration amplitude sensor max. value	PAL peak-to-peak input value	Value	V	As the vibration amplitude sensor supplies a sinusoidal AC voltage, the actual vibration amplitude value is measured as a peak-to-peak value and then converted into an effective value.
-	PAL Vibration sensor status	PAL circuit is open on overheating (input voltage < 1.0 V)	Value	V	Temperature switch inside Magnetic vibrator opens at 115 °C to save the Drive from overheating damages
-	Fan speed monitoring	Input voltage < 3.0 V when the fan is running	Value	V	If an internal fan is installed in the control unit, its operation is only monitored in a rudimentary way. The fan is controlled by PWM at 50-100% from a temperature of 50°C. The maximum speed is controlled at 80°C.
-	AViCAN monitoring	Input voltage without error > 2.5 V	Value	V	The collective fault signal line on the AViCAN field bus also recognises the short circuit to earth and short circuit to external voltages (12-30VDC). „Normal“ error messages from devices connected to the AViCAN are sent both by CAN message and also by setting the collective error signal.
-	Fine trim potentiometer input	0.0 to 3.0V (1.5V in center position)	Value	V	Rest position is 1.5V, 4.5 turns to the right then results in 3.0V, 4.5 turns from the center position to the left results in 0.0V.

Tab. 38: System info „Diagnostic data“

9.4.5.6 Manufacturer settings

These are factory default settings that can only be viewed and changed by the manufacturer.

Manufacturer settings					
<i>ID</i>	<i>Name</i>	<i>Description</i>	<i>Value</i>	<i>Unit</i>	<i>Notes</i>
C88	Mains voltage positive tolerance	/	10	%	Editable ex works
C89	Mains voltage negative tolerance	/	15	%	Editable ex works
C90	Mains frequency positive tolerance	/	0,5	%	Editable ex works
C91	Mains frequency negative tolerance	/	0,5	%	Editable ex works
C94	Mains voltage Averaging depth	Measured mains voltage averaging depth in multiple of 8ms samples	25		Editable ex works
C39	Voltage calibration	Calibration value for input voltage measurement	Value		Voltage calibration to better than 1.0 V at mains voltage 230 VAC or 600 VAC
C40	Current calibration	Calibration value for input current measurement	1		Current calibration is currently not performed as it is not relevant
C80	Internal temperature	Logic board temperature sensor calibration factor	Value		Temperature calibration of the NTC sensor, takes place at room temperature
C81	Heat-sink temperature	Heat-sink power-board temperature sensor calibration factor	Value		Temperature calibration of the NTC sensor, takes place at room temperature
C08	WLAN option	Activate if WLAN module is available	Set		Option
C23	Thyristor pulse length	Do not change without consulting the developer	500	uSec	Value cannot be edited. Only applies to SDE15-50/02-2. SDE06/0x-2 and SDE15-25/01-2 have a triac voltage pulse control.

Tab. 39: System info „Manufacturer settings“

9.5 Master / Slave operation

A vibration unit that is driven by more than one magnetic vibrator requires control in master/slave operating mode. The controllers involved are networked via the AViCAN field bus. The procedure for networking and the realisation of the special operating modes parallel and reverse operation are described in this chapter.

9.5.1 Master / Slave networking (AViCAN)

Before networking, the controls must be installed in accordance with chapter 7.

Chapters 9.4.2.15 'AViCAN network settings' and 9.4.3 'AViCAN devices' are part of the networking described below for assigning the node ID of the master controller and up to 10 slave devices.

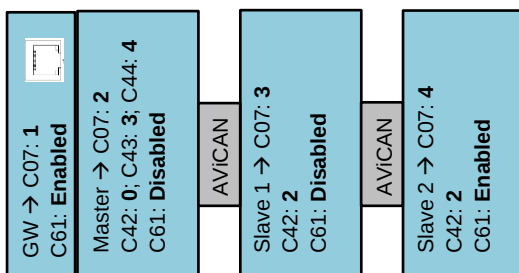
9.5.1.1 SDE06

The following illustration shows a diagram and the setting values of three networked SDE06 control units, consisting of a master and 2 slaves. Parameterisation is carried out from right to left in the structure shown.

NOTICE

Specification for parameterisation

During the process of parameterising a control unit, **all other control units must be switched off.**



1. Master and Slave 1 switch off (de-energised)
2. Establish a computer-GW network connection and call up 'AViCAN network settings'
3. Parameterisation of Slave 2
4. Switch off slave 2, then switch on and parameterise slave 1
5. Switch off slave 1, then switch on master and parameterise
6. Switch on all controls and check entries

Fig. 27: SDE06 Master/Slave scheme

NOTICE

Set the terminating resistor correctly

The gateway and the last control unit in the master/slave network are set to terminating resistor active - (C61: Enabled), all other control units are set to inactive (C61 Disabled).

If only one control unit is operated on the gateway, the terminating resistor is set to active for both devices.

9.5.1.2 SDE15/25/50

The following illustration shows a diagram and the setting values of three networked control units of size 15, 25 or 50, consisting of a master and 2 slaves.

NOTICE

Specification for parameterisation

The parameterisation of the master control unit is the first and last step. For the slave control units, only the control unit to be parameterised needs to be connected to the master via the AViCAN bus cable.

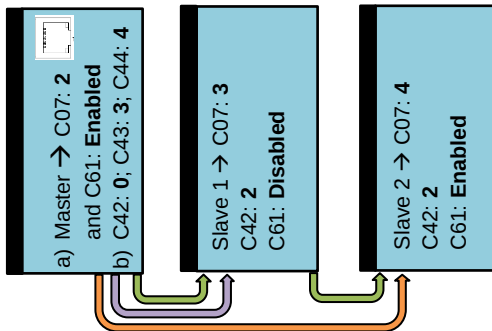


Fig. 28: SDE15/25/50 Master/Slave scheme

1. Unplug all AViCAN bus cables
2. Establish network connection between computer and master and call up 'AViCAN network settings'
3. **(a)** Parameterisation Master C07 and C61
4.  Set AViCAN cable from master to slave 2, then parameterise slave 2
5.  Set AViCAN cable from master to slave 1, then parameterise slave 1
6.  Set AViCAN cable from master to slave 1 and from slave 1 to slave 2
7. **(b)** Parameterisation Master C42, C43 and C44

NOTICE

Set the terminating resistor correctly

The master and the last slave control in the master/slave network are set to terminating resistor active - (C61: Enabled), all other controls are set to inactive (C61 Disabled).

If there is only one slave, the terminating resistor is set to active for both devices.

9.5.2 Special operating modes

9.5.2.1 Parallel operation

-in progress -

9.5.2.2 Reverse operation

- In progress -

9.6 USB interface



The SDE06/GW-2 gateway and the SDE15/25/50...-2 control units are equipped with a USB type A slot at the front. This offers the option of carrying out firmware updates, importing and exporting configuration files and exporting log lists.

You will need a USB memory stick with the following properties:

- Storage capacity: max. 32 MB
- FAT32 formatted
- Free from content → Empty root directory

⚠ CAUTION

Damage to the control unit or the oscillating unit possible

The control unit must be stopped and locked during a firmware update:

- Set start function **IN1 inactive** → Open switch!
- LED display SDE15/25/50...-2 must light up  **orange**
- LED display SDE06/GW...-2 must light up  **green**, if all connected SDE06...-2 controllers are in stop mode (IN1 inactive)

9.6.1 Firmware update

The software for operating the SDE control units is subject to constant maintenance and further development by the manufacturer. New functions and product improvements resulting from this can be installed on any control unit by means of a firmware update. The requirements and procedure - **with** and **without** a web interface - are described in this chapter.

NOTICE

AViCAN-networked control units must all have the same firmware version.

9.6.2 Preparations - Firmware files

You will receive the firmware packed as a .zip file

„AViTEQ-SDE-Firmware-Vx.y.z.zip“.

Prepare the files as follows:

1. Unpack the .zip file on a computer and save the .bin files it contains to the root directory of the USB stick.
2. Renaming the .bin files:
Removing the version number „_vx.y.z._dcdc...“ by renaming the file names.
The files on the USB stick are then named as follows:
 - vib_full.bin
 - vib_low.bin
 - vib_gtw.bin

The memory stick and data are now correctly prepared for carrying out the update on the control unit.

9.6.3 Firmware update without web interface



Please familiarise yourself with Chapter 8 - 'Operating and display elements' beforehand. To update the firmware directly on the control unit, please work through the following points in strict sequence:

1. Insert memory stick with firmware into the USB slot on the control unit
2. Switch off the control unit → Disconnect mains voltage
3. **// - ACKnowledge Button** Press and **hold** → up to point 6
4. **// - Switch on the control unit** → Mains voltage ON
5. **// - LED flashes for a few seconds in the sequence** ● red ● green ● blue
6. **// - LED lights up** ● blue – ACKnowledge Button **let go**.
7. LED flashes ● blue – Firmware update is being carried out
8. LED lights up ● green – Update completed
9. Automatic restart– Operational readiness:
 - Display lights up ● orange at SDE15/25/50...-2
 - Display lights up ● green at SDE06/GW-2

If the firmware version on the memory stick is identical to the version installed on the control unit, steps 6 - 8 are omitted.

9.6.4 Firmware update with web interface



Please familiarise yourself in advance with chapter 9.2.2.3 – „Four status icons“. To update the firmware via the web interface, please work through the following points in strict sequence:

1. Insert memory stick with firmware into the USB slot on the control unit
2. USB stick recognised: Display **blue**
3. Display semicircle arrows changes from **orange** (Check) in **green** (valid firmware recognised)
4. Login as 'User Admin' (see chapter 9.3)
5. Calling up the 'System info' menu:



6. Press the 'Update device' button to perform a firmware update
7. LED flashes **blue** – Firmware update is being carried out
8. LED lights up **green** – Update completed
9. After update: Automatic restart - ready for operation
 - Display lights up **orange** at SDE15/25/50...-2
 - Display lights up **green** at SDE06/GW-2

9.6.5 Configuration and log files

The SDE controllers have a function for importing and exporting the CFG configuration files in order to transfer specially created device configurations to or read them from a control unit. The respective procedure is described in this section.

NOTICE

Name CFG files **without** ,/' , e.g.:

- SDE06/GW_... → SDE06GW_...
- SDE15/01_... → SDE1501_...

9.6.5.1 Parameter set import

ATTENTION

Risk of damage to the control unit or the vibration unit

The CFG file is imported without an additional query. Therefore, please check in advance to ensure that the new configuration matches the control unit/vibration unit combination.

To import a new configuration to an SDE control unit, proceed as follows, taking into account the instructions in chapter 9.6:

1. PC: Save the prepared CFG file with a unique name, e.g. 'SDExxyy_Customer_Project_DeviceID_Date.cfg'
2. Insert UBS memory stick into PC
3. Create a folder with the name '**vib_import**' in the root directory of the USB memory stick
4. Save the CFG file in the 'vib_import' folder and rename it to
5. SDExxyy.cfg
6. Eject the USB stick from the PC and insert it into the USB port of the control unit, which must be in standby mode
7. LED lights up  blue during the read and write process
8. Import completed when LED in standby mode
9. Remove USB stick

Further information:

- A CFG file that has been exported from a controller can be used as a basis
- All lines beginning with a '#' character are considered commented out and are ignored during the import process
- An **import.log** file is created to log the import steps. This file is attached with every configuration import.

9.6.5.2 Parameter set export

To export a configuration from an SDE control unit, proceed as follows, taking into account the instructions in chapter 9.6:

1. Create a folder with the name '**vib_export**' in the root directory of the USB stick
2. Eject the USB stick from the PC and insert it into the USB port of the control unit
3. LED lights up  blue during the read and write process
4. Export completed when LED in standby mode
5. Remove USB stick and insert into PC

The exported configuration with the following file name can be found in the 'vib_export' folder:

- SDE<variant>_<s/n>_<timestamp>.cfg

Example:

- SDE1501_P12345678000ABC_20250114-150544.cfg

As CSV data, they can be easily imported into a spreadsheet and edited as a basis for importing the configuration into any other device.

Below you will find an extract from the content of the configuration file:

```
# C00;P12345678/000ABC
# C01;183
# C02;58
# C03;0
C04;0
C05;1
C06;0
C07;12
# C08;0
C09;1
C10;0
C11;3
C12;1
C13;0
C14;200
C15;80
C16;1
C17;80
C18;1
C19;1
[...]
```

Notes:

- Lines beginning with a '#' → Data is read-only
- An integer value corresponds to either
 - a boolean value (0: false, 1: true),
 - An integer value,
 - a list field index (starting at 0)

9.6.5.3 Log export

The USB stick can be used to export the error, short and long-term logs of a control unit for evaluation purposes. Proceed as follows:

1. Create a folder with the name '**vib_log**' in the root directory of the USB stick
2. Eject the USB stick from the PC and insert it into the USB port of the control unit
3. LED lights up  blue during the read and write process
4. Log export completed when LED in standby mode
5. Remove USB stick and insert into PC

The 'vib_log' folder now contains the three log files, which are named according to the following scheme:

- SDE<variant>_<s/n>_<timestamp>_<logtype>.log

9.7 AVTI – Configuration SDE06/01-2

9.7.1 Description

AVTI is software for creating CFG configuration files for size 06 without a gateway, the SDE06/01-2. AVTI thus enables the configuration of the most important operating parameters without a network connection.

9.7.2 Requirements / Access

You will need the password for the download, a PC with Windows® 10 or higher operating system, and a USB stick formatted with FAT32 with a maximum storage capacity of 32 GB.

Access AVTI: Download-Link <https://aviteq.canto.de/b/JPOM1> using the password provided with the control unit.

Operation of AVTI requires that you have read and understood this operating manual in its entirety.

9.7.3 User interface

1. Language selection field
2. Drive selection field
3. "Drive parameters" input field
4. "Additional parameters" input field
5. Control panel for generating the CFD file
6. "Close," "Info," and link to operating instructions control panel

AVTI - AViTEQ Thyristor Interface (.cfg - Builder)

AViTEQ Parameter CFG-Builder for SDE06/01-2

Language: en — English

Drive: — Please choose a drive —

Drive parameters

C04 — Operating mode

C14 — Maximum output reference (V)

C22 — Vibration frequency Drive

C59 — Nominal mains frequency (Hz)

C60 — Nominal mains voltage (V)

C56 — Control curve Setpoint output (ASA)

C74 — Soft start/stop Increment

C93 — Compensation factor

Additional parameters

C09 — Enable input (IN2)

C10 — Setpoint input source

C11 — Light barrier/initiator input (IN3)

C12 — Light barrier/initiator switching polarity

C13 — Analog input 2

C26 — Reverse relay output

C28 — Soft start start

C29 — Soft start stop

C62 — Potential-free signal contact

C73 — Soft start/stop percentage value (%)

Close Info Manuals Choose folder... Controller Type: — Choose type — File name: GENERATE

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Fig. 29: Elements of the AVTI user interface

9.7.4 Operation AVTI

AVTI is operated in accordance with the numbering of the main elements described in Chapter 9.7.3, after access has been granted via the user admin password:

1. Language selection
2. Drive selection in the drop-down menu
 - 2a. AViTEQ drive selection: Parameters are set automatically
 - 2b. Custom selection: Parameters must be set manually as described below
 - 2c. AViTEQ drive selection and adjustment of the set parameters
3. Editing the drive parameters in accordance with section 9.4.2
4. Editing additional parameters in accordance with section 9.4.2
5. Generating the CFG file for import into the control system in accordance with section 9.6.5.1
6. Closing the programme

10 Faults

Faults in the SDE...-2 control units can essentially occur in

- External - General errors and
- Internal - Error messages from the control unit (Mxy)

be categorised. Possible causes of errors and how to rectify them are described in the following three chapters. The 'Log system' chapter describes how to handle the recorded errors logs.

10.1 External general errors

General errors			
Nr.	Error	Possible cause	Remedy
①	Vibration device does not work	Mains fuse missing. No LED lights up	Eliminate cause, check fuse(s)
		Mains fuse blown. No LED lights up.	Replace fuse, check current consumption if necessary.
		Supply line broken. No LED lights up.	Determine the cause and replace the supply line.
		The full mains voltage is present at terminals 3 and 4 (identical to the voltage at terminals 1 and 2) • Magnetic vibrator not connected or supply line interrupted • Thyristor short circuit, vibrator hums.	• Connect the magnetic vibrator correctly • Have the thyristor/triac changed (AVITEQ).
		Component(s) of the control unit (thyristor/triac, power supply, circuit board or similar) defective, no voltage at output terminals 3 and 4	• Repair required • Send the control unit to AVITEQ.
		Potentiometer or its cable defective	Replace potentiometer or cable
		Signalleitung(en) unterbrochen	Replace the signalling cable(s).
②	Vibration device does not work • Start (IN1) is on • LED flashes  red	Terminals 13 and 14 are not connected to a bridge	Insert bridge
		Overtemperature on the magnetic vibrator	• Allow to cool down, appliance starts automatically • If error occurs repeatedly, search for cause of overload
③	Vibration device - too low power	Wrong control selected	Assign correct control
		Voltage at the controller output (terminals 3 and 4) too low	Check mains voltage and control unit setting. Check voltage specification of magnetic vibrator and control unit, if necessary, increase vibrator voltage on fine correction potentiometer or consult AVITEQ
		Voltage at the input of the magnetic vibrator too low due to high line resistance	• Change supply line (reduce length, increase cross-section) • Consultation with AVITEQ if necessary
		Deviation from the nominal frequency with an internal power supply.	• New tuning required • clarify with AVITEQ
		Potentiometer (terminals 5, 6 and 7) not connected, no external reference variable	Connect potentiometer or external reference variable.
		Control unit outputs incorrect drive frequency, the vibrator current IV is too high	Check the control unit setting and correct parameter C22.
④	Magnetic vibrator operates in impact mode (hammering noise)	Vibrator voltage too high	• Check the mains voltage and setting of the control unit, as well as the voltage specification of the magnetic vibrator and control unit • If necessary, increase the vibrator voltage on the fine correction potentiometer • Consultation with AVITEQ
		Deviation from the nominal frequency with internal power supply	• New tuning required • Contact AVITEQ
		Incorrect control selected. Incorrect oscillation frequency set.	• Assign the correct control unit • Check the AVITEQ delivery details • Check control settings
⑤	Magnetic vibrator operates with max. vibration amplitude - independent of the potentiometer setting	• Signal line at terminal 7 is interrupted or • Short circuit between terminals 5 and 6 or • Potentiometer defective	• Check signalling cable and replace if necessary • Replace potentiometer
⑥	Magnetic vibrator operates with min. oscillation amplitude - independent of the potentiometer setting	• Potentiometer connected incorrectly (connected as series resistor) or • Potentiometer defective	• Connect potentiometer correctly • Replace potentiometer

Tab. 40: External faults - General faults

10.2 Internal error messages M...

Error level low - Missing start conditions		
Error code	Meaning- Possible cause	Remedy
M20	Start has been created, but one of the defined start conditions is missing - IN2 in the wrong condition, or - PAL Temperature switch signals overtemperature	- IN2 Set to release state - Overtemperature - check connection and temperature conditions, rectify if necessary
M21	Start has been created, but one of the defined start conditions is missing IN3 in the wrong condition	IN3 (Light barrier/proximity switch) Check condition and correct if necessary
M22	AViCAN - networked device reports error still in error state or not ready	Acknowledge error status, establish readiness

Tab. 41: Internal faults – Error level low

Error level low - AViCAN networked control systems		
Error code	Meaning- Possible cause	Remedy
M30	AViCAN – Networking - Connection error in the mains area - Phase synchronisation error	- AViCAN Check the phase position of the control units and correct if necessary - Check the connection in the mains area.
M31	AViCAN - Data transmission error Slave device does not receive PD01 frame and sets error	- Check AViCAN connection, or - Correct errors in the configuration of the master
M33	AViCAN – Slave control unit does not go into standby mode One of the possibly defined inputs IN1, IN2, IN3 on a slave device is not in the correct basic state	Check inputs IN1, IN2 and IN3 and correct if necessary.
M34	AViCAN - Slave device is missing or no longer responds	- Check configuration and AViCAN wiring and correct if necessary - If error occurs frequently, replace affected slave controller.

Tab. 42: Internal faults – Error level low (AViCAN)

Error level medium		
Error code	Meaning - Possible cause	Remedy
M50	Error in PAL evaluation	- Check PAL connection and function. - Check plug connection and cable - Contact AVITEQ Service
M51	Power supply terminal 22 faulty - short circuit or overload. - Light barrier or proximity switch defective, or - Incorrect device connected with excessive power consumption, or - too many devices connected	Check the listed causes and rectify any that apply Note: After eliminating the overload situation, it may take a few seconds for the PTC fuse to cool down and reset.
M87	Fan error - Fan failure, or - Parameter C27 incorrectly activated, although the control unit does not have a fan	Contact AVITEQ Service, as only the manufacturer can change the setting or repair the device.

Tab. 43: Internal faults – Error level medium

Error level high - Operation		
Error code	Meaning - Possible cause	Remedy
M52	Overtemperature power stage (heat sink) - Ambient temperatures too high T_{amb} - Heat sink contamination - Active cooling in the switch cabinet has failed - Oscillating system overloaded - excessive current consumption	T_{amb} check, take cooling measures if necessary - Check heat sink, clean if necessary - Check switch cabinet cooling, repair if necessary - Review process (promotion) and adjust if necessary
M88	Overtemperature control unit - Ambient temperatures T_{amb} too high - Convection ventilation disrupted - Active cooling in the switch cabinet has failed	T_{amb} check, take cooling measures if necessary - Check installation situation, adjust/clean if necessary - Check switch cabinet cooling, repair if necessary
M89	Mains frequency outside tolerance Backup/emergency power supply	- Check network conditions - Check mains frequency Note: Fluctuations > 0.5 % (within the EU).
M90	Mains voltage outside tolerance	Standard definition ex works +/- 10 % - Check mains voltage in relation to nominal values - Check mains voltage definition (parameter C60)
M91	Overcurrent shutdown - overload on the control unit (limit values set ex works) - Incorrect oscillation frequency set on the control unit (parameter C22) - Control unit selected too small	- Check parameter C22 and correct if necessary - Check overload on the oscillating system - Test start with reduced amplitude and check current values on the device and with a current clamp. - Slowly increase the amplitude to 100% and observe the increase in current values. - Contact AVITEQ Service
Error without level		
M86	Analogue interface 2 defined to 4...20 mA, quiescent current below 4 mA - Cable break - Error of the current signal source - Incorrect basic configuration (0...20 mA)	- Check cables, repair if necessary - Check signal source - Check basic configuration (4...20 mA) - Contact AVITEQ Service

Tab. 44: Internal faults – Error level high – (Operation)

Error level high - Defect		
Error code	Meaning - Possible cause	Remedy
M80	AViCAN – Power supply overload or short circuit	- At SDE15/25/50...-2: Check wiring Replace defective connecting cable - At SDE06/...-2: Website access possible? - yes, defect in a control unit - No, probably SDE06/GW-2 defective. - Contact AVITEQ Service
M81	AViCAN – Error (permanent) - Possible defect in a control unit, or - Non-acknowledgeable error on the control unit	- Check cable connections for short circuits. - Contact AVITEQ Service
M82	USB – Power supply error Overload or short circuit on the USB port or the inserted USB memory stick	- Use another USB memory stick - Contact AVITEQ Service
M83	Internal power supply 12V error - Internal supply outside the tolerances - Most likely control unit defect	Contact AVITEQ Service
M84	Internal power supply 5V error - Internal supply outside the tolerances - Most likely control unit defect	Contact AVITEQ Service
M92	Power module identifier incorrect Control unit defective	Contact AVITEQ Service
M93	Communication with measuring module (voltage, current) faulty Control unit defective	Contact AVITEQ Service

Tab. 45: Internal faults – Error level high – (defect)

10.3 Bootloader error status

A particular error condition is the direct starting of the control unit in the so-called 'bootloader' without enabling normal operation.

The programme memory is checked when the control unit is started. If a data error is detected, the following information is set in the log system:

- **Memory error (CRC-Check-Error)**

No function can be executed in this state.

Even a restart by switching the mains voltage off and on again does not change this state. The control unit must be checked and reprogrammed.

NOTICE

Contact AViTEQ if the control unit needs to be replaced.

10.4 Log system

The control unit has a log system for documenting operating data, errors and configuration changes.

The log list capacity is limited. When the list is full, the oldest entry is automatically deleted.

The logs can be exported as a file in .csv format, provided the user is logged in as at least a 'user admin'.

For traceable log recording, the system time and date should be set on all control units.

There are three log lists, which are described in the following chapter.

10.4.1 Log lists

Error log - Logging of all current error messages and error states. The most important operating data is recorded for each error entry. Logon times and parameter changes by users with configuration authorisation are also recorded in the error log.

Short-term log - cyclical, continuous recording and listing of values relevant to operation. Among other things, this makes it possible to see how long a particular fault has existed. Logging cycle 1x per minute by default.

Long-term log - cyclical, continuous recording and listing of values relevant to operation. This shows, among other things, how long a particular fault has existed. Logging cycle 1x per 15 minutes by default.

NOTICE

When calling up the log list in the 'Log' menu, press the 'Update' button.

10.4.2 Log export

```

1  "Datum & Uhrzeit","Meldung","Innen-
2  Temp. ","Netz-
3  spannung","Netz-
4  frequenz","Ausgangs-
5  spannung","Ausgangs-
6  strom","Lokal/Fern","Sollwert
7  Lokal","Sollwert-
8  Mode","Sollwert
9  Fern"
10 2024-07-30 18:22:12,Factory logged in
11 2024-07-30 18:22:21,Parameter C92 value changed,7
12 2024-07-30 18:22:21,Parameter C22 value changed,0
13 2024-07-30 18:22:21,Parameter C14 value changed,230
14 2024-07-30 18:22:25,87,52,233.8,49.9,0,0,0,5.4,0,0
15 2024-07-30 18:22:47,Parameter C14 value changed,210
16 2024-07-30 18:23:20,87,51.3,233.2,49.9,0,0,0,5.4,0,0
17 2024-07-30 18:26:41,Parameter C27 value changed,1
18 2024-07-30 18:26:55,87,50.5,233.8,49.9,0,0,0,5.4,0,0
19 2024-07-30 18:27:10,87,50.4,233.1,50,0,0,0,5.4,0,0
20 2024-07-30 18:27:24,Parameter C27 value changed,0
21 2024-07-30 18:35:18,Factory logged in
22 2024-07-30 18:35:23,Parameter C92 value changed,6
23 2024-07-30 18:35:23,Parameter C14 value changed,230
24 2024-07-30 18:35:32,Parameter C14 value changed,200
25 2024-07-30 18:36:13,Parameter C11 value changed,1
26 2024-07-30 18:36:36,Parameter C12 value changed,0
27 2024-07-30 18:37:18,Parameter C92 value changed,9
28 2024-07-30 18:37:19,Parameter C14 value changed,125
29 2024-07-31 13:29:16,Factory logged in
30 2024-07-31 14:31:50,87,49.9,234.1,50,0,0,0,0,0,0
31 2024-08-02 11:46:05,Configurator logged in

```

Fig. 30: Ex. log export list

The export function is available for archiving, analysing or sharing log lists with AVITEQ. To do this, proceed as follows:

1. Login as 'User Admin'
2. Call up the 'Log' menu, select one of the three lists and press 'Refresh'
3. Select the 'CSV export' button, the save dialogue appears
4. Save the .csv file on your computer

Repeat the process for the other lists if necessary. The log files are created in CSV data format (see illustration on the left). These can be read into a spreadsheet programme using the import function. This allows the list to be analysed in a targeted manner.

11 Maintenance and cleaning

11.1 Maintenance

The control unit is maintenance-free if the prescribed operating conditions are observed (see chapter 4.3).

11.2 Cleaning

NOTICE

Do **not** clean the surfaces of the control unit with spirits, solvents or aggressive cleaning agents.

12 Disassembly and disposal

12.1 Packaging material

The following materials are used by us when delivering control units, depending on the type of transport:

- Plastic film (PE) as device protection
- Corrugated cardboard box as outer packaging and inner packaging
- Wooden crates as outer packaging
- Paper scraps as filling material
- Styrofoam (Flo-Pack) as filling and cushioning material.

All packaging materials can be disposed of in accordance with the relevant disposal regulations of the delivery area.

Cardboard packaging and packaging tapes made of paper can be recycled in accordance with current disposal and reutilisation regulations. If used, packaging films, wrapping tapes and foam films are made of polyethylene (PE), the CFC-free padding parts are made of foamed polystyrene (PS). These packaging materials consist of pure hydrocarbons and are therefore recyclable.

In special cases, we use steel straps and non-chemically pre-treated wooden crates.

12.2 Device materials

In the event of disposal by the customer or replacement of components, the applicable regional waste treatment and disposal regulations must be observed. We accept no liability for parts and components that are not disposed of properly!

- The regulations for the disposal of electronic parts and components apply to the disposal of the control units
- The power semiconductors used (thyristor and diode modules) do not contain beryllium and can therefore be disposed of as electronic waste.

NOTICE

Detailed information on the materials used can be requested from us if required. If in doubt, please take advantage of our disposal offer!

12.3 Device return

AVITEQ Vibrationstechnik GmbH will take back control units of type SDE../...-2 delivered from 2024 free of charge, on delivery free AVITEQ Vibrationstechnik GmbH, 65795 Hattersheim.

13 Version Firmware

Programme	Version	Status
Firmware Webinterface	V1.8.8	11-2025
AVTI - AVITEQ Thyristor Interface	V1.02 ML	11-2025

Tab. 46: Version Firmware / AVTI

14 Overview of web interface parameters

14.1 Operation - Settings

Error status	
C36	Current failure status
C37	Time of last stored failure
C38	Failure acknowledge
Basic selection – Vibration unit	
C92	Drive unit type selection
Operating mode settings	
C04	Operating type
C06	Operating mode
C05	Operating role
C60	Mains nominal voltage
C59	Mains nominal frequency
C14	Maximum value control range
C22	Vibration frequency drive
Vibrator sensor	
C19	PA/L vibration sensor
C68	PA/L Maximum double amplitude vibration sensor
Inputs and outputs	
C10	Setpoint source
C09	Enable input IN2
C11	Light barrier / proximity-switch input IN3
C12	Light barrier / proximity switch polarity
C13	Analog input 2
C62	Potential-free relay contact
C26	Reverse relay polarity
C55	Control curve setpoint input (ASE)
C56	Control curve setpoint output (ASA)
Date and time	
C83	Devices date and time
Security features	
C20	Overload detection (Ampere)
C21	Overload action ON / OFF
C15	Internal temperature limit
C16	Internal temperature limit action
C17	Heat-sink temperature limit
C18	Heat-sink temperature limit action
Operating parameters – Ramp up/down	
C28	Soft start
C29	Soft stop
C73	Soft -start / -stop step level
C74	Soft -start / -stop step duration

Additional settings	
C27	Fan speed monitoring
C30	Software setpoint in percent
C41	Fine tuning
C75	Reverse operation
C93	Compensating factor
Vibration limitation settings	
C69	PA/L limitation step-down ratio
C70	PA/L limitation step-down duration
C71	PA/L limitation step-up ratio
C72	PA/L limitation step-up duration
Setpoint jumps - Voltage control	
C95	Threshold
C96	Step ratio
C97	Step duration
Vibration PI-controller settings	
C65	PI-controller Parameter K
C66	PI-controller Parameter Ti
LOG settings	
C57	Short time log period
C58	Long time log period
Ethernet settings	
C101	DHCP Client
C102	Static IP Address
C103	Static IP Mask
C104	Static IP Gateway
AViCAN network settings	
C07	CANopen Node-ID
C42	Main devices Node ID
C43	1. Slave Node-ID
C44	2. Slave Node-ID
C45	3. Slave Node-ID
C46	4. Slave Node-ID
C47	5. Slave Node-ID
C48	6. Slave Node-ID
C49	7. Slave Node-ID
C50	8. Slave Node-ID
C51	9. Slave Node-ID
C52	10. Slave Node-ID
C61	CAN termination resistor

14.2 Service - System Info

Administrator function	
C03	Reset user settings
Product information	
C105	IP address currently
C01	Powered-on hours
C02	Operating hours
Product identification	
C63	Device type
C00	Serial number
C64	Software version
C76	Logic board SN
C77	Logic board PN
C78	Power board SN
C79	Power board PN
Operating data	
C31	Modulation real value
C32	Input voltage real value
C33	Output voltage real value
-	Setpoint on input 1 (Analog-IN1)
-	Setpoint on input 2 (Analog-IN2)
C86	Internal temperature
C87	Power-board temperature

Diagnostic data	
-	Internal voltage 12V
-	Internal voltage 5V
-	Light barrier / proximity-switch supply
-	PAL Vibration amplitude sensor max. value
-	PAL Vibration sensor status
-	Fan speed monitoring
-	AViCAN monitoring
-	Fine trim potentiometer input
Manufacturer settings	
C88	Mains voltage positive tolerance
C89	Mains voltage negative tolerance
C90	Mains frequency positive tolerance
C91	Mains frequency negative tolerance
C94	Mains voltage Averaging depth
C39	Voltage calibration
C40	Current calibration
C80	Internal temperature
C81	Heat-sink temperature
C08	WLAN option
C23	Thyristor pulse length

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17 EU Declaration of Conformity

The manufacturer...

AViTEQ Vibrationstechnik GmbH
Im Gotthelf 16
65795 Hattersheim
Deutschland



explains that the controls for solenoid drives ⁽¹⁾ of the series...

SDE.../... -2

comply with the provisions of the following European Directives:

2006/42/EU	Machinery Directive
2014/30/EU	Directive on the harmonisation of the laws of the Member States relating to electromagnetic compatibility(...)
2014/35/EU	Directive on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits(...)

The conformity of the products with the European Directives is demonstrated by full compliance with the following harmonised standards:

EN 60204-1 VDE 0113-1:2019-06

Safety of machinery - Electrical equipment of machines - Part 1: General requirements

EN 61010-1 VDE 0411-1:2020-03

Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

EN IEC 61000-6-2:2019-11; VDE 0839-6-2:2019-11

Electromagnetic compatibility (EMC) Part 6-2: Generic standards - Immunity for industrial environments

EN 61000-6-4 VDE 0839-6-4:2007-09

Electromagnetic compatibility (EMC) Part 6-4: Generic standards - Emission for industrial environments

EN IEC 61326-1 VDE 0843-20-1:2022-11

Electrical measurement, control and laboratory equipment - EMC requirements

It is imperative that you observe the safety instructions and the information on intended use in the operating instructions supplied!

Hattersheim, 24. April 2025

Legally binding signature:



i.V. M. Junker (Technical Management)

⁽¹⁾ Magnetic vibrator, small-parts conveyor drive and parts conveyor drives

