Operating Manual

Pressure switch
for gas, air and emissions
FD…



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Before first use, read the operating manual!

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1 General

1.1 Information on the operating manual

This operating manual provides important information on working with the pressure switch. Safe working can only be ensured by adhering to all the safety remarks and instructions provided.

In addition, the locally applicable accident prevention laws and general safety regulations must be followed.

Read the operating manual carefully before using the pressure switch the first time. These instructions form an integral part of the product and must be kept near the equipment at all times within easy reach for personnel.

When the pressure switch is transferred on to third parties, it must always be accompanied by the operating instructions.

The illustrations in this operating manual are intended to aid understanding of the content. They are not necessarily true to scale and may differ slightly in some details from the actual configuration of the pressure switch.

1.2 Explanation of symbols

Warning instructions

Warning instructions are indicated in this operating manual by symbols. The remarks are introduced by the use of signal words which indicate the degree of severity of the hazard.
The instructions must be adhered to without fail and acted upon prudently in order to prevent accidents, personal injury or material damage.



DANGER!

… denotes a hazardous situation which results in death or serious injury unless prevented.



WARNING!

… denotes a hazardous situation which could result in death or serious injury unless prevented.



CAUTION!

… denotes a hazardous situation which could result in minor or slight injury unless prevented.

NOTE!

… denotes a hazardous situation which could result in material damage unless prevented.

Recommendations

REMARK!

… highlights useful recommendations and information designed to permit efficient, trouble-free operation.

Special safety remarks

In order to draw attention to special hazards, the following symbol is used in conjunction with safety remarks:



DANGER!
Fatal danger due to electrical current!

… denotes a potentially fatal situation due to electrical current. Failure to adhere to the safety instructions can give rise to the danger of serious injury or death.
The work to be performed may only be carried out by a suitably qualified electrician.

1.3 Liability disclaimer

All instructions and remarks contained in this operating manual are collated taking into account applicable standards and regulations, the state of the art and our many years of experience and expertise.

The manufacturer is consequently unable to accept any liability for damage caused as a result of:

- Failure to adhere to the instructions
- Use for any other than the designated purpose
- Deployment of untrained personnel
- Internally executed modifications or conversion work
- Technical modifications
- Use of unapproved spare parts

The actual scope of the delivery may differ in some details from the explanations and illustrations provided here in the case of special versions, where additional optional features are made use of or due to the latest technical modifications.

Otherwise, the obligations agreed in the Supply Agreement, the General Terms and Conditions and the Manufacturer's Conditions of Supply and the statutory regulations in force at the time of conclusion of contract shall be applicable.

1.4 Copyright protection

These operating instructions may not be shared with third parties. They are exclusively intended for those operating the pressure switch and may not be made available to third parties without the prior written consent of the manufacturer.



REMARK!

The information, texts, drawings, illustrations and other representations are protected by copyright and are subject to industrial property rights. Utilization for any other than their intended purpose renders the perpetrator liable to prosecution.

The contents of all or part of these operating instructions may not be duplicated in any form, nor may they be used and/or communicated to any third party without the written consent of the manufacturer. Any breach of this obligation shall render the perpetrator liable to compensation of damages, without prejudice to any further-reaching claims.

1.5 Warranty regulations

The warranty regulations are provided as a separate document in the General Terms and Conditions.

1.6 After-sales service

For any technical information, consult our after-sales service.

Information can be obtained at any time by phone, fax, e-mail or Internet. For the manufacturer's address, see the cover sheet on the table of contents.

Our employees are always open to feedback and comments related to all of our products which could be of use in the continual and improvement of our products.

2 Safety

This section provides an overview of all important safety aspects for optimum protection of personnel as well as safe, trouble free operation.

Failure to observe the operating instructions and safety remarks contained in this manual can cause serious injury.

This information described minimum requirements, local situations and regulations may call for a wider scope.

2.1 Owner's responsibility

As the pressure switch is used commercially, the owner of the pressure switch is obliged to adhere to occupational safety regulations as well as any other applicable directives, legislation and standards.

Alongside the occupational safety remarks contained in these operating instructions, the safety, environmental and accident prevention regulations governing the field of application of the pressure switch must be adhered to, whereby the following regulations in particular apply:

- The owner must be aware of the valid occupational safety regulations.
- The owner must clearly regulate and define fields of responsibility for installation and maintenance.
- The owner must ensure that all employees involved in working with the pressure switch have read and understood the operating instructions.
  Furthermore, the owner must provide personnel training at regular intervals and inform staff of potential hazards.

As the owner is also responsible for ensuring that the pressure switch is always in good technical working order the following requirements additionally apply:

- The owner must regularly check that all safety devices are fully functional and complete.
- The owner must provide the necessary protective gear for personnel.

2.2 Operating personnel

2.2.1 Requirements



WARNING!
Danger of injury due to insufficient qualification

Incorrect handling of the equipment can result in severe personal injury and material damage.

– Only allow activities to be performed by suitably qualified specialist personnel.

The following qualifications are required for the various fields of activity:

- **Qualified personnel**
  are capable on the basis of their specialist training, knowledge and experience as well as their knowledge of the applicable regulations of executing the work assigned to them and of independently recognizing possible hazards.
- **Electrical specialists**
  are capable on the basis of their specialist training, knowledge and experience as well as their knowledge of the applicable regulations of working on electrical installations and of independently recognizing possible hazards.
  Electrical specialists have received training specifically for the work environment in which they are employed and are familiar with the relevant standards and regulations.
- **Gas specialists**
  are capable on the basis of their specialist training, knowledge and experience as well as their knowledge of the applicable regulations of working on gas installations and of independently recognizing possible hazards.
  Gas specialists have received training specifically for the work environment in which they are employed and are familiar with the relevant standards and regulations.

Only persons who may be expected to perform their task reliably may be authorized to use the equipment. Persons whose reaction capacity is impaired, for example due to drugs, alcohol or medicine use, may not be authorized.

When selecting suitable personnel, observe the age and profession-specific regulations applicable at the place of use.

2.2.2 Unauthorized persons



WARNING! Danger for unauthorized persons!

Persons who do not comply with the requirements described here are not aware of the dangers inherent in the work area.

- Keep unauthorized persons away from the work area.
- In case of doubt, approach the person in question and direct them out of the work area.
- Interrupt work for as long as any unauthorized person remains in the work area.

2.3 Intended purpose of the equipment

The pressure switch is exclusively designed to perform the intended purpose described here.

This pressure switch is a piece of equipment that needs to be integrated into an overriding control system. The pressure switch picks up a pressure and gives out a signal.



WARNING!
Danger due to use not in accordance with the intended purpose!

Any application beyond and/or not in accordance with the intended purpose of the pressure switch can result in the occurrence of hazardous situations.

- Adhere to all the instructions provided in this operating manual without fail.

The manufacturer can not be held liable for physical or material harm caused by misuse of equipment or use for anything other than its intended purpose.

2.4 Personal protective gear

Personal protective gear must be worn while working with the equipment in order to minimize potential health hazards.

- Wear the protective gear necessary for performance of the relevant task at all times while working.
- Observe all signs relating to personal protective gear in the work area.

To be worn at all times

Wear the following for the performance of all work:



Protective work clothing

This comprises tight-fitting work clothes which are resistant to tearing, have tight-fitting sleeves and no projecting parts. This is required primarily to protect against burns.



Safety shoes

To protect the feet against heavy falling articles and to prevent slipping on floors.



Protection helmet

Protection helmets protect the head from falling parts, swinging loads or bumping it against stationary equipment.

To be worn for special types of work

When performing special types of work, special safety equipment is required. This is covered in depth in the individual chapters of this instruction manual. These types of special protective gear are described in the following:



Face protection

To protect one’s eyes and face from flames, sparks or embers as well as hot particles or flue gases.



Protective gloves

To protect one’s hands from rubbing, chafing, puncturing or deeper injuries and from contact with hot surfaces.

2.5 Special dangers

Remaining dangers are listed in the section below.

The remarks provided here and the safety instructions in the subsequent chapters of this operating manual must be observed in order to reduce the possible risk to health and prevent the occurrence of dangerous situations.

Electrical current



DANGER!
Potentially fatal injury due to electrical current!

Contact with live components can cause fatal injury. Damage to the insulation or individual components can have potentially life-threatening consequences.

- In the event of damage to the insulation of the power supply, switch off immediately and arrange for repairs to be carried out.
- Work on the electrical system may only be carried out by suitably qualified electricians.
- Before performing any work at the electrical system, disconnect it from the power supply and check that it is no longer live.
- Before starting work, switch off the power supply and make sure it cannot be inadvertently switched back on.
- Never bypass or decommission fuses. When changing fuses, adhere to the correct amperage and the correct characteristics.
- Keep moisture away from live components. This can create a short circuit.

2.6 Securing against unauthorized switching use



DANGER!
Risk of fatal injury due to unauthorized use!

When working in the danger area, there is a risk that the energy supply could be switched on by an unauthorized person. This creates a potentially fatal hazard for persons working in the danger area.

- Observe the instructions provided on securing against unauthorized switching back on in the chapters of this operating manual.
- Always observe the procedure described below to secure against unauthorized switching back on.

Switch safeguarded by lock

on: …….. at ……hours

DO NOT SWITCH ON

The lock may only be removed

by: ……

once steps have been taken to ensure that no persons are located in the danger area.

Securing against unauthorized use

1. Switch off the power supply.
2. If possible, secure the switch with a lock and attach a sign in an easily visible location at the switch.
3. Have the key looked after by the employee named on the sign.

Switched off

on: …….. at ……hours

DO NOT SWITCH ON

The lock may only be removed

by: ……

once steps have been taken to ensure that no persons are located in the danger area..

4. Should it not be possible to secure a switch using a lock, set up a sign.
5. Once all the work has been carried out, ensure that there are no longer any persons located in the danger area.
6. Ensure that all safety devices are installed and are fully functional.
7. Only then may the sign be removed.

2.7 Response in case of danger or accident

Preventive actions

- Always be prepared for accidents and for fires!
- Keep first aid equipment (first aid kit, blankets etc.) and a fire extinguisher on hand.
- Familiarize personnel with accident alarm, first aid and rescue facilities.
- Ensure that access paths for emergency vehicles are kept unobstructed.

In case of accident: React correctly

- Initiate first aid measures.
- Evacuate any persons located in the danger area.
- Inform those responsible at the incident location.
- Alert the emergency medical / fire services.
- Clear access paths for emergency vehicles.

3 Transport, packaging and storage

3.1 Safety instructions for transport

REMARK!

Extreme vibration or shock may cause damage to electrical components.

3.2 Transport inspection

Check the delivery on receipt without delay for completeness and transport damage.

In the case of externally recognizable transport damage, report the damage immediately, adopting the following procedure:

- Only conditionally accept the delivery.
- Note the extent of the damage on the transport documents or on the shipping agent's delivery note.
- Initiate a complaint.

Concealed transport damage must be reported within seven days.

REMARK!

Report any defect immediately it is noticed. Claims for damages can only be asserted within the applicable deadlines for the filing of complaints.

3.3 Packaging

Packaging

The individual products are packaged in accordance with the transport conditions expected for the consignment. Exclusively environmentally friendly materials are used for the packaging.

The packaging should protect the individual components from transport damage, corrosion and other damage up until such time as they are assembled. For this reason, do not destroy the packaging and only remove it shortly before assembly.

Handling packaging materials

If no outline agreement has been reached for packaging, separate the materials according to type and size, and send for re-use or recycling.

> **NOTE!**
> **Environmental damage due to incorrect disposal!**
>
> Packaging materials are valuable raw materials and in many cases can be reused or usefully processed and recycled.
>
> – Ensure environmentally responsible disposal of packaging materials.
> – Observe locally applicable disposal regulations.

3.4 Storage conditions

Storage

Store the pressure switch under the following conditions:

- Never keep outdoors.
- Store in dry, dust-free conditions.
- Do not expose to any corrosiv substances.
- Avoid any drop in temperature below the dew point.
- Protect the pressure switch from mechanical damage.
- Storage temperature: 0 °C to 60 °C
- Relative humidity: max. 60 %
- When storing for longer than 3 months, regularly check the condition of all parts and the packaging. If necessary refresh or replace the conservation.

> *REMARK!*
>
> *The packaging units may come with storage instructions applicable in addition to the requirements outlined here. These must be adhered to.*

4 Specifications

4.1 Type designation with type key

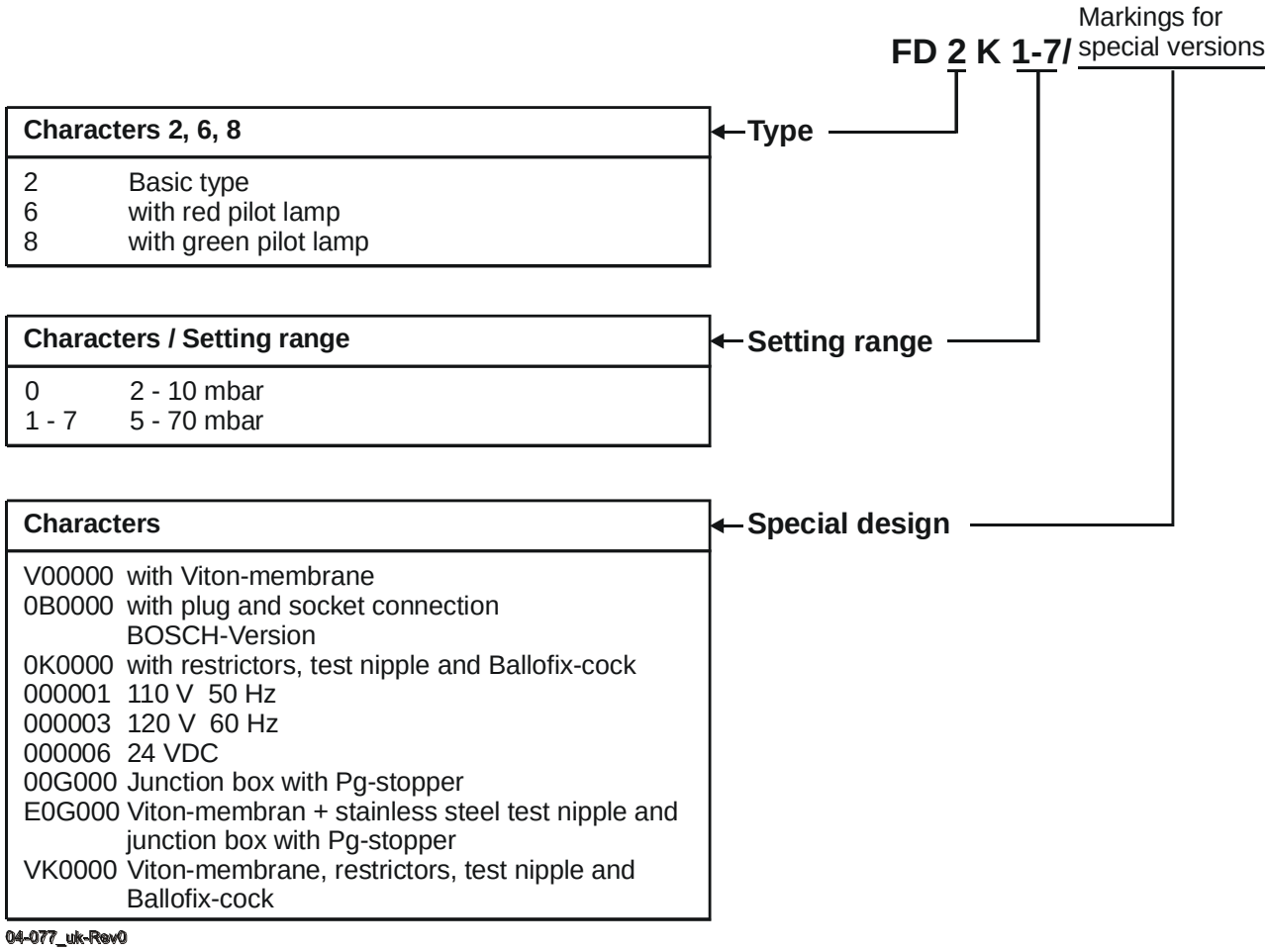


Fig. 1: Type key

4.2 Pressure switch

Characteristic	Value
Application	For gas as overpressure switch
	For air as overpressure or underpressure switch
Max. operating pressure FD…K0	50 mbar
Max. operating pressure FD…K1-7	300 mbar
Switching difference FD…K0	0,4 mbar
Switching difference FD…K1-7	0,6 mbar
Ambient temperature	0 °C to + 60 °C (condensation must be avoided)
Electrical connection	Connecting terminals or plug-and-socket connection
Electrical switching element	Microswitch (1 change-over contact)
Protection rating	IP 54
Cable inlets	2 x Pg 13,5
Nominal voltage	220/230 V AC +10%/-15%; 50/60 Hz
Mounting position	any
Colour	grey
Pressure port	¼“
Weight	approx. 0,75 kg

Operation voltage with max. contact loads referring to 10^5 switching operations:				
Alternating current		220 V	110 V	24 V
		3 A	3 A	3 A
Direct current		220 V	110 V	24 V
	ohm.	0,2 A	0,4 A	2 A
	ind.	0,02 A	0,04 A	1 A

4.3 Dimensional drawing

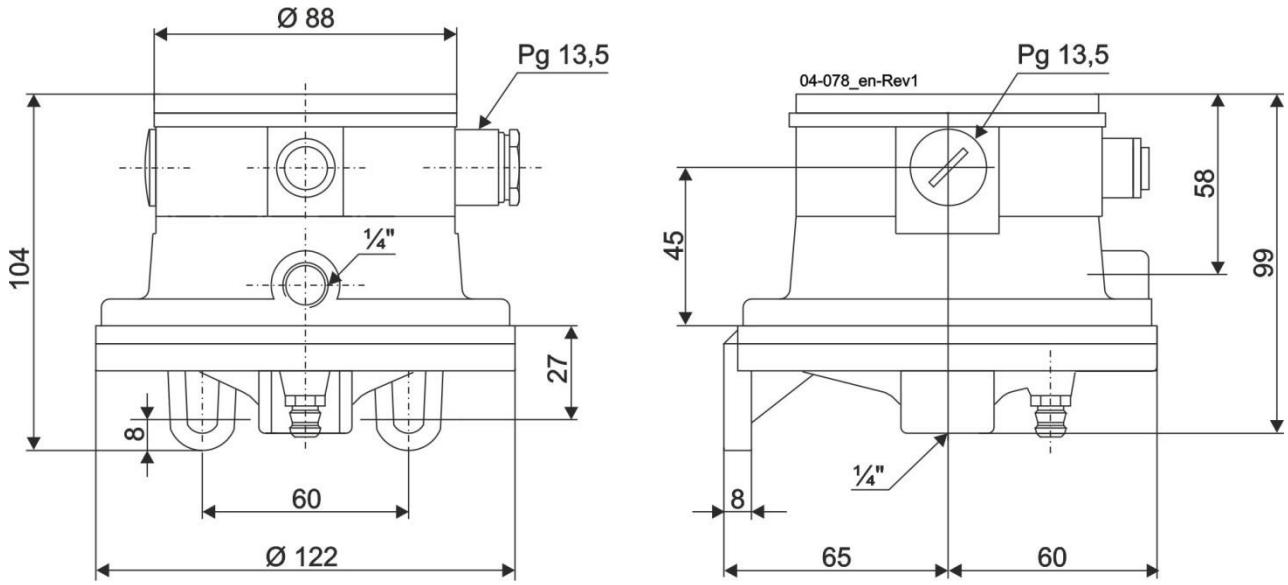


Fig. 2: Dimensional drawing, pressure switch

4.4 Rating plate

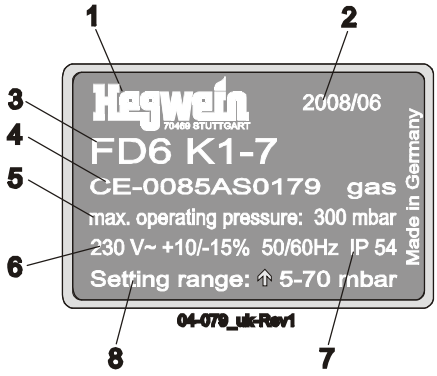


Fig. 3: Example of rating plate

The rating plate is located on the junction room cover of the pressure switch and contains the following information:

1 Manufacturer
2 Date of manufacture (year/month)
3 Type
4 CE product identification number and approval number
5 Max. operating pressure
6 Connected voltage
7 Protection rating
8 Setting range

4.5 Service life

NOTE!
This product does not have an unlimited service life!

It was designed and type tested for a maximum service life. In applications involving 50 switching processes per day, this service life is set at around 10 years. This period can be substantially reduced in the event of increased stress (temperature, vibrations, dirt etc.).

– System operators and owners must take the steps to ensure that regular safety checks are performed depending on the actually occurring degree of stress.
– Exchange the pressure switch after it has exceeded the specified service life.

5 Functional characteristics and structure

5.1 Functional characteristics

The pressure switch compares an over or and underpressure against atmospheric pressure and transmits the result mechanically to a microswitch.

The setpoint or switching pressure may be selected freely within the limits of the setting range.

The pressure difference between the upper and the lower switching pressure, i.e. the switching differential, is given and cannot be altered.

The pressure switch can be supplied with or without a signal lamp.
Version with red signal lamp: The red signal lamp comes on as soon the pressure falls below the switching point.
Version with green signal lamp: The green signal lamp comes on as soon the switching pressure has been reached.
Versions without a signal lamp come with a threaded plug instead

5.2 Structure

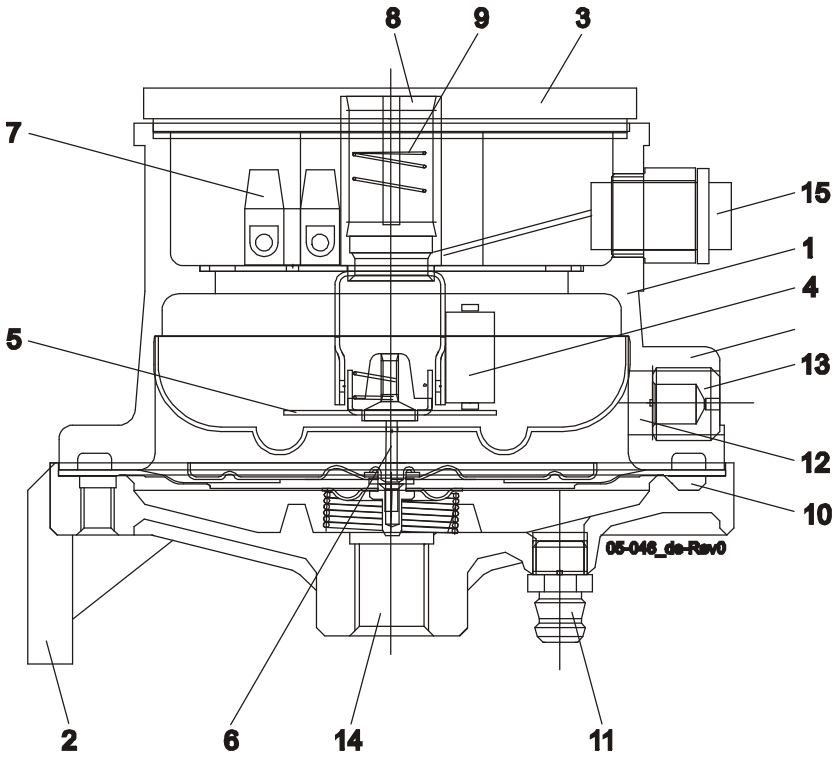


Fig. 4: Pressure switch

1	Enclosure	7	Twin terminal	13	Plug
2	Mounting flange	8	Setting screw	14	Overpressure port
3	Junction room cover	9	Spring	15	Signal lamp
4	Microswitch	10	Membrane		
5	Rocker	11	Test nipple		
6	Metal pin	12	Underpressure port		

Functional characteristics and structure

The pressure switch consists of the enclosure (1), the junction room cover (2) and the mounting flange with its mounting loops. The membrane (10) is clamped between the mounting flange (3) and the enclosure (1). It also serves as a sealing gasket between the pressurised compartment (gas) and the upper section of the enclosure.

The upper side of the switching insert holds two twin terminals (7), the earthing screw and the holder for the setting screw (8). The microswitch (4) with its rocker (5) is arranged on the lower side of the switching insert.

The movement of the membrane (10) is transferred to a metal pin (6) that presses the spring (9)-loaded rocker (5) towards the microswitch (4).

6 Installation and initial commissioning

6.1 Safety

Personnel

- Installation may only be performed by suitably qualified specialist staff of the plant installer.
- Initial commissioning may only be performed by employees of the manufacturer or by trained personnel.

Basics



WARNING!
Danger of injury due to faulty installation and initial commissioning!

Errors during installation and initial commissioning can result in potentially fatal situations or entail substantial material damage.

- Prior to any commissioning/maintenance work that part of the plant where the pressure switch is installed must be switched off and secured against accidental restart. All feedlines to the pressure switch must be blocked, emptied and cleaned, if necessary.
- Before starting work, ensure that there is sufficient freedom of movement for the installation work.
- Take care when handling open, sharp-edged components.
- Ensure that the installation site is clean and tidy. Loose components and tools lying around or piled on top of each other are a possible cause of accidents.
- Assemble components professionally and correctly, observing prescribed screw tightening torque levels.
- Secure components so that they cannot drop down or fall over.

6.2 Installation

- To be executed by suitably trained personnel only.

1. Prepare the installation location and installation opening.
2. Apply a suitable sealant to the threaded port of the pressure switch.
3. Screw the pressure switch (1) to the connecting pipe thread. Please refer to the relevant connecting scheme and use the appropriate port, depending on the type of pressure.

REMARK!

In case of underpressure please remove the plug from the underpressure port (2) and screw it into the overpressure port (3).

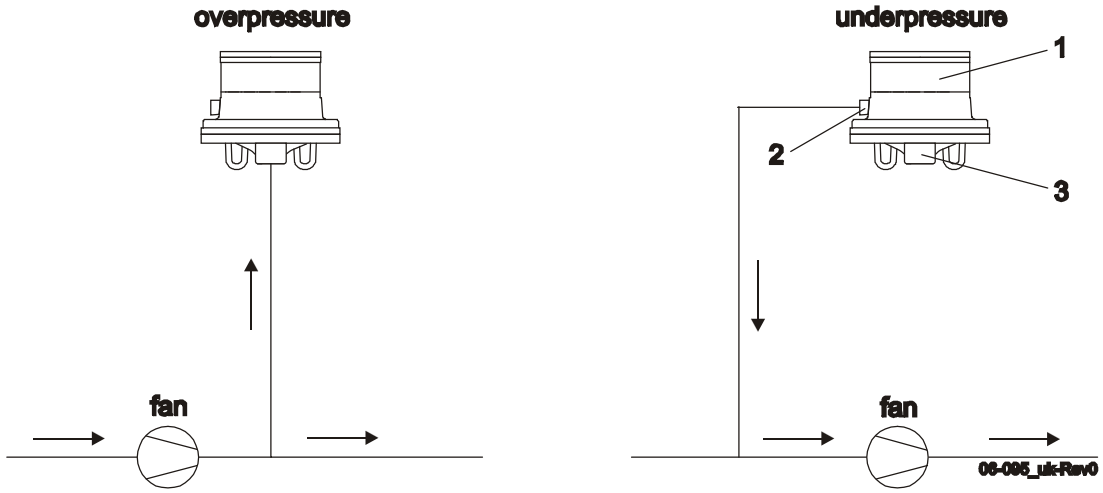


Fig. 5: Terminal diagram pressure switch

NOTE!

Excessive temperature can cause damage!

Excessive temperatures may cause malfunction of or damage to the membrane.

– Take appropriate measures for cooling (e.g. extended pipe section for better cooling).
– The temperature at the inlet port must not exceed 60 °C.

REMARK!

The pressure switch must be connected by the owner to the plant control system in accordance with the terminal diagrams.

6.3 Electrical connection

- This test must only be executed by a qualified electrician.

NOTE!
Risk of overload!
Inappropriate use may damage the pressure switch.

– The SPDT contact needs to be fused locally. For contact loads please see the table in the chapter “Technical Data”.
– When the pressure switch is used for the monitoring of an air flow, its function needs to be tested the air flow starts and prior to every system start-up. Any error during this start-up must lead to a stop in the start-up procedure.

6.3.1 Cable inlets through cable glands Pg 13,5

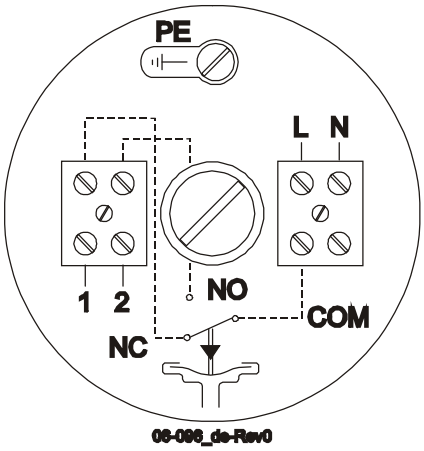


Fig. 6: Terminal diagram

REMARK!
The second cable inlet is closed with a stopper. The wiring diagram is shown on a sticker on the inside of the junction room cover. Only pressure switches with an integrated signal lamp require the wiring of neutral to the twin terminal block on the right.

1. When wiring the pressure switch, rotate the junction room cover with the wiring diagram inside in such a way that the position of the wiring diagram corresponds to the position of the terminal block.
2. Electrical connections should be carried out according to local regulations.

6.3.2 Special design with plug and socket connection FD.../0B0000

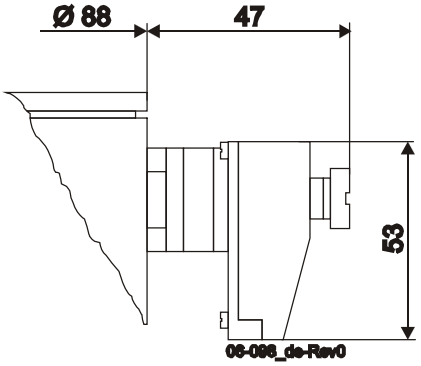


Fig. 7: Plug dimensions

REMARK!

The plug is installed instead of the Pg cable gland. The wiring diagram sticker is fixed on the inside of the junction room cover.

REMARK!

Close the terminal box/connecting plugs and check whether all seals, cable strain relief devices etc. are correctly connected..

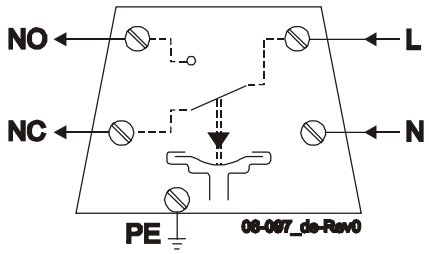


Fig. 8: Wiring terminals in the plug

6.3.3 Setting the switch-on point acc. the switching pressure

- To be executed by suitably trained personnel only.

1. Release the four crosshead screws and take the junction room cover (1) off.

> *REMARK!*
>
> *The setting point can be increased by loading the spring (3), that is by turning the setting screw (2) clockwise. It can be raised up to the maximum pressure of the setting range. Turning the setting screw (2) counterclockwise causes the setting point to decrease.*
>
> *Turning the setting screw (2) back completely or removing it is equivalent to the lowest setting point.*

2. Set the setting point acc. the switching pressure with the setting screw (2).

> *REMARK!*
>
> *After a final inspection in the factory the devices are set to their lowest setting point. According to that the FD…K 0 models are set to 2 mbarg and the FD…K 1-7 models to 5 mbarg.*
>
> *The reaction time of the pressure switches can be delayed by inserting an orifice with a 1.0 mm bore into the connection thread. Thus the gas or air between orifice and membrane is used as buffer action.*

3. Insert the junction room cover (1) and tighten the four crosshead screws.

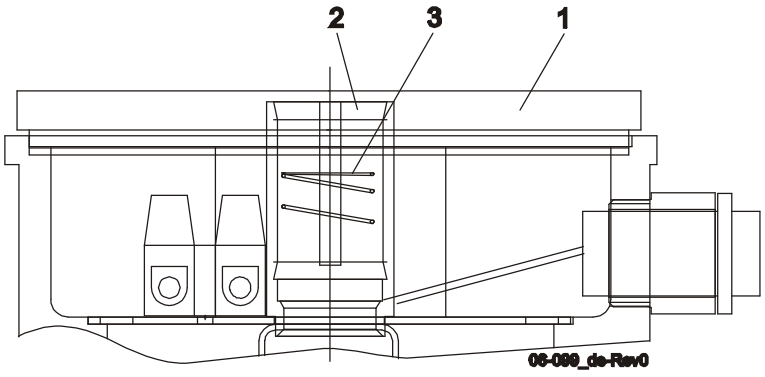


Fig. 9: Setting the switch-on point acc. the switching pressure

6.3.4 Control the switch-on point acc. the switching pressure

- To be executed by suitably trained personnel only.
- Required special tools:
  - Customarily available pressure gauge with a measurement range of 0 – 100 mbar

> *REMARK!*
>
> *The test nipple is located next to the overpressure port.*

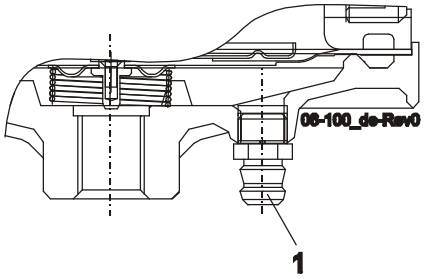


Fig. 10: Test nipple

1. Turn the Allen screw (size 2.5) respectively the screw slot in the centre of the test nipple (1) 1 $^{1}/_{2}$ turns counter clockwise in order to open the air pressure test nipple.
2. Connect the pressure gauge to the test nipple (1).
3. Correct the switch-on point acc. the switching pressure if necessary.
4. After measurement, remove the pressure gauge.
5. Close the Allen screw.

7 Maintenance

7.1 Safety

Personnel

- To be executed by suitably trained personnel only.

Basics

WARNING!
Danger of injury due to incorrectly executed maintenance work!

Incorrectly done maintenance work can result in serious personal injury or material damage.

– Before starting work, ensure that there is sufficient freedom of movement for the installation work.
– Ensure that the installation site is clean and tidy. Loose components and tools lying around or piled on top of each other are a possible cause of accidents.
– When components are removed, ensure correct reassembly. Remount all fastening components and adhere to specified screw tightening torque levels.

7.2 Conditions for maintenance work

Take care of the following warnings before carrying out any maintenance work:

DANGER!
Risk of explosion due to leaking gas!

Accidental gas leaks can cause an explosion or serious burns!

When carrying out maintenance work, shut off the gas valve!

– Ensure that no residual gas remains, if necessary inert the gas lines.
– Completely separate the pressure switch from the power supply and disconnect the gas / air supply.

The maintenance work listed below can now be performed.

7.3 Maintenance, general

The pressure switch should be function tested at regular intervals (minimum once a year).

If the pressure switch is operated with air containing dust, checks must be performed at shorter intervals, as electrically conductive dirt deposits or moisture on the ceramic insulators of the igniter can result in malfunctions.

In case of malfunction the complete pressure switch should be replaced.

8 Troubleshooting

The following chapter provides information on possible causes for faults and describes the work required to remedy them.

In case of faults which cannot be remedied following these instructions, contact HEGWEIN. For the servicing address, see the cover sheet of the table of contents.

8.1 Safety

Personnel

- This may only be performed by trained personnel.

Basics



WARNING!
Danger of injury due to incorrectly performed maintenance work!

Incorrectly executed maintenance work can result in serious personal injury or material damage.

– Before starting work, ensure that there is sufficient freedom of movement for the installation work.
– Ensure that the installation site is clean and tidy. Loose components and tools lying around or piled on top of each other are a possible cause of accidents.
– When components are removed, ensure correct reassembly. Remount all fastening components and adhere to specified screw tightening torque levels.

Response in case of faults

Basic rules of procedure:

1. Determine the cause of the fault.
2. If remedying the fault entails work in the danger area, switch off the pressure switch and secure it against being switched back on.
3. Completely disconnect the pressure switch from the energy supply and disconnect the gas/air supply.
4. Inform the person in charge at the site immediately about the fault.
5. Depending on the type of fault, have it remedied by authorized specialist personnel.



REMARK!

The troubleshooting table listed below provides information on how to remedy faults.

8.2 Troubleshooting table

Fault	Possible cause	Solution	To be done by
Pressure switch does not switch over	Set point or switching pressure outside the setting range	Check switching pressure	Qualified personnel
	Switching contact welded up	Check burner management system and fusing at site	Qualified personnel
	Pressure switch defective	Replace the pressure switch	Qualified personnel / Manufacturer
Pressure switch cannot be set to the desired set point or setting range	Set point or switching pressure outside the setting range	Check setting range	Qualified personnel
		Install pressure switch with appropriate setting range	Qualified electrician
	Pressure switch defective	Replace the pressure switch	Qualified personnel / Manufacturer

9 Dismantling / Disposal

Once it has reached the end of its service life, the pressure switch has to be dismantled and sent for ecologically responsible disposal.

9.1 Safety

Personnel

- This may only be performed by trained personnel.

Basics



WARNING!
Danger of injury due to incorrect dismantling!

Residual stored energy, sharp components, pointed corners and edges on or in the pressure switch or on the required tools can cause injury.

– Before starting work, ensure that there is sufficient space available.
– Take particular care when dealing with sharp-edged components.
– Ensure that the installation site is clean and tidy. Loose components and tools lying around or piled on top of each other are a possible cause of accidents.
– If any points are unclear, consult the manufacturer.

9.2 Dismantling

Before starting to dismantle it, carry out the following steps:



DANGER!
Potentially fatal injury due to electrical current!

Contact with live components can cause fatal injury.

– Before starting dismantling work, switch off the electrical supply and finally disconnect.

DANGER!
Risk of explosion due to leaking gas!

Accidental gas leaks can cause an explosion or serious burns!

When dismantling, shut off the gas valve!

– Ensure that no residual gas remains, if necessary inert the gas lines.
– If gas is unintentionally released into the atmosphere, immediately shut off the gas flow. Prevent gas entering drainage systems, basements, work pits or other locations in which collected gas could cause a hazard.

1. Switch off the pressure switch and secure it against being switched back on.
2. Completely disconnect the pressure switch from the energy supply and gas / air supply.
3. Remove operating and auxiliary materials as well as residual processing materials and ensure their ecologically responsible disposal.

The pressure switch can now be cleaned for separation and dismantled in compliance with applicable occupational safety and environmental protection legislation.

9.3 Disposal

Provided no return acceptance or disposal agreement has been concluded, the components once dismantled can be sent for recycling:

- Scrap the metal.
- Send plastic elements for recycling.
- Dispose of the remaining components separated according to material properties.

NOTE!
Environmental damage due to incorrect disposal!

Electric scrap, electronic components, lubricants and other auxiliary materials are subject to special waste treatment and may only be disposed of by authorized specialist companies!

The local authorities or specialist disposal companies can provide information on environmentally responsible disposal.

10 Annex

10.1 EC type examination certificate

CE 0085

DVGW Zertifizierungsstelle

EG-Baumusterprüfbescheinigung
gemäß der EG-Gasgeräterichtlinie (90/396/EWG)

EC type examination certificate
according to the EC Gas Appliance Directive (90/396/EEC)

Produkt-ID-Nummer
Product-ID-Number

CE-0085AS0179

Hersteller *manufacturer*	**Hegwein GmbH & Co. KG** Am Boschwerk 7, D-70469 Stuttgart
Produktart *product category*	Ausrüstungsteile für Gasgeräte, Druckwächter für Gas, Luft und Abgase < 4 bar
Produktbezeichnung *product name*	Einstellbarer Druckwächter für Gasbrenner und Gasgeräte
Baureihe / Modell *model*	FD...
Prüfgrundlagen *basis of type examination*	DIN EN 1854 (Entwurf 02.1994)
Bestimmungsländer **Gerätekategorien** **Versorgungsdrücke** *countries of destination* *appliance categories* *supply pressures*	AT BE CH DE DK ES FI FR GB GR IE IS IT LU NL NO PT SE
Aktenzeichen *file number*	95/474/74/783 (DVGW-Forschungsstelle, Karlsruhe) 97-0687-GEE (DVGW)
Überwachung *surveillance procedure*	Kontrollprüfung, jährlich durch den DVGW

30.05.1997 Re-Ch

Datum, Leiter der Zertifizierungsstelle

DVGW - von der deutschen Bundesregierung benannte und von der EG-Kommission offiziell notifizierte Stelle für die Konformitätsbewertung von Gasgeräten
DVGW - notified by the government of the Federal Republic of Germany and officially registered by the EC Commission for conformity assessment of gas appliances

DVGW Deutscher Verein des Gas- und Wasserfaches e.V.
Technisch-wissenschaftliche Vereinigung
Josef-Wirmer-Straße 1-3
D-53123 Bonn
Telefon (+49) 228-9188-807
Telefax (+49) 228-9188-993

12-016-1_de-Rev0

Produkt-ID-Nummer : CE-0085AS0179
Product-ID-Number

Elektrische Daten : 220/230 V AC; 50/60 Hz; IP 54
electrical data

Typ *type*	**Technische Daten** *technical data*	**Bemerkungen** *remarks*
FD ... 0	zul. Betriebsdruck : 50 mbar	Einstellbereich 2,0 bis 10,0 mbar
FD ... 1-7	zul. Betriebsdruck : 300 mbar	Einstellbereich 5,0 bis 70,0 mbar

Ausführungsvariante *type variation*	**Erläuterung** *explanation*
FD 2 ...	Grundtyp
FD 6 ...	mit roter Signallampe
FD 8 ...	mit grüner Signallampe

Bemerkungen
remarks

Umgebungstemperatur: 0 °C bis + 60 °C

Schutzklasse: I

Einbaulage: beliebig

Druckanschluß: Rp 1/4"
Die EG-Konformitätserklärung für das Bestimmungsland Schweiz darf erst dann ausgestellt werden, wenn die Schweiz die EG-Gasgeräterichtlinie (90/396/EWG) in nationales Recht umgesetzt hat.

12-016-2_de-Rev0

Fig. 11: EC type examination certificate

10.2 EU Declaration of conformity

EU-Konformitätserklärung
EU Declaration of Conformity

Hersteller *Manufacturer*	Hegwein GmbH
Anschrift *Address*	Am Boschwerk 7, 70469 Stuttgart, Germany

Produktbezeichnung Druckwächter **FD...**	***Product description*** *Pressure switch* ***FD...***
Die alleinige Verantwortung für die Ausstellung dieser EU-Konformitätserklärung trägt der Hersteller.	*This EU declaration of conformity is issued under the sole responsibility of the manufacturer.*
Das oben bezeichnete Produkt erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Europäischen Union 2009/142/EG (Gasgeräterichtlinie) 2014/35/EU (Niederspannungsrichtlinie)	***The product of the declaration described above is in conformity with the relevant European Union harmonisation legislation*** *2009/142/EC (Gas appliances directive)* *2014/35/EU (Low voltage directive)*
Angewandte harmonisierte Normen DIN EN 1854:1994-02 DIN 3398-1:1992 DIN 3398-2:1992	***Applied harmonised standards*** *DIN EN 1854:1994-02* *DIN 3398-1:1992* *DIN 3398-2:1992*

Unterzeichnet für und im Namen von *Signed for and on behalf of*	Hegwein GmbH
Ort, Datum *Place, date*	Stuttgart, 20.04.2016
Unterschrift *Signature*	Rainer Böcher Geschäftsführer *Managing Director*

12-017_de_en-Rev2

Fig. 12: EU Declaration of conformity