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Honeywell

krom/schroder

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Operating instructions
Pressure switch for gas DG..C



Cert. version 05.18

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Safety

Please read and keep in a safe place



Please read through these instructions carefully before installing or operating. Following the installation, pass the instructions on to the operator. This unit must be installed and commissioned in accordance with the regulations and standards in force. These instructions can also be found at www.docuthek.com.

Explanation of symbols

•, **1**, **2**, **3**... = Action
▷ = Instruction

Liability

We will not be held liable for damage resulting from non-observance of the instructions and non-compliant use.

Safety instructions

Information that is relevant for safety is indicated in the instructions as follows:

⚠ DANGER
Indicates potentially fatal situations.

⚠ WARNING
Indicates possible danger to life and limb.

! CAUTION
Indicates possible material damage.

All interventions may only be carried out by qualified gas technicians. Electrical interventions may only be carried out by qualified electricians.

Conversion, spare parts

All technical changes are prohibited. Only use OEM spare parts.

Changes to edition 01.19

The following chapters have been changed:
– Technical data
– Logistics
– Certification

GB

Checking the usage

DG..C

For monitoring increasing or decreasing positive pressure of natural gas, town gas, LPG, flue gas, biogas and air.

This function is only guaranteed when used within the specified limits, see page 5 (Technical data).

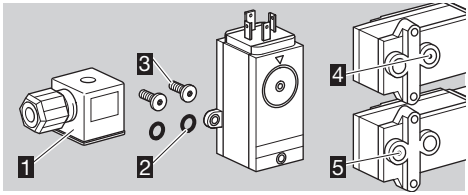
Any other use is considered as non-compliant.

Type code

Code	Description
DG	Pressure switch for gas
15–500	Max. setting in mbar
/15–/500	Max. 2nd setting in mbar
V	Switching point adjustable on hand wheel
C	EU version, switches with falling pressure
CT	US version, switches with rising pressure
CFT	US version, switches with falling pressure
1	Connection for valVario controls
3	Connection at the side for CG 15–30
4	2 x Rp 1/4 internal thread, pressure test point
5	
6	Rp 1/4 internal thread
8	R 1/8 external thread
9	R 1/4 external thread Optional connection for valVario controls
D	Sealant (for external thread only)
-5	4-pin plug, without socket
-6	4-pin plug, with socket
S	NO contact
W	Change-over contact
G	With gold-plated contacts

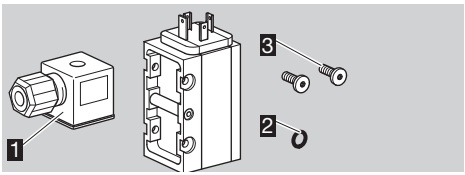
Part designations

DG..C..1, DG..C..9 for valVario controls



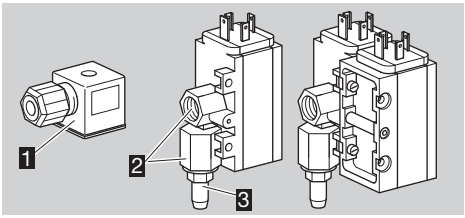
1 Socket with seal
2 2 x O-rings
3 2 x retaining screws
4 Gas inlet for DG..C..1
5 Gas inlet for DG..C..9 (option)

DG..C..3 for CG 15 – 30



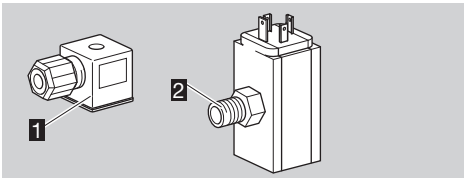
1 Socket with seal
2 1 x O-ring
3 2 x retaining screws

DG..C..4, DG..C..5 with internal thread



1 Socket with seal
2 2 x Rp 1/4 internal thread for DG..C..4,
1 x Rp 1/4 internal thread for DG..C..5
3 Pressure test point for DG..C..4

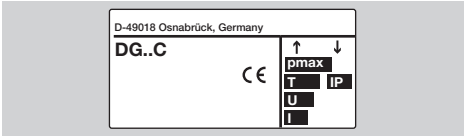
DG..C..6, DG..C..8 with external thread



1 Socket with seal
2 R 1/8 external thread for DG..C..6,
R 1/4 external thread for DG..C..8

Type label

Installation position, max. inlet pressure = withstand pressure = p_{max}, ambient temperature, enclosure, voltage, current: see type label.



Installation

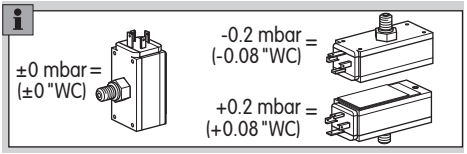
! CAUTION

Please observe the following to ensure that the DG..C is not damaged during installation and operation:

- Continuous operation with gases containing more than 0.1 %-by-vol. H_2S accelerates the ageing of elastomer materials and reduces the service life.
- Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
- Use approved sealing material only.
- Check max. ambient temperature, see page 5 (Technical data).
- Max. inlet pressure p_{max} 600 mbar (8.5 psig).
- Max. test pressure for testing the entire system: temporarily < 15 min. 2 bar (29 psig).
- Protect the appliance against dirt or moisture (icing of condensation at subzero temperatures) in the medium to be measured, e.g. install a filter and ensure there is a riser.
- Avoid strong impact on the unit.
- In case of highly fluctuating pressures, install a restrictor orifice, see page 5 (Accessories).

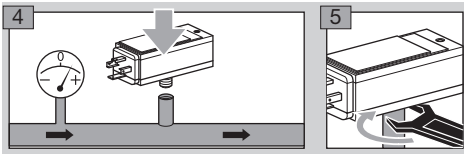
DG..C

▷ Installation in the vertical or horizontal position. If installed in a horizontal position, the preset switching point will change by 0.2 mbar (0.08 "WC).

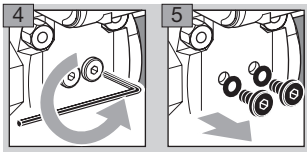


▷ If the DG..C is installed with the plug pointing downwards, the enclosure is reduced to IP 40.
▷ The DG..C must not be in contact with masonry. Minimum clearance 20 mm (0.79 inches).
▷ Ensure that there is sufficient installation space.
▷ For DG..VC, ensure unobstructed view of the hand wheel.

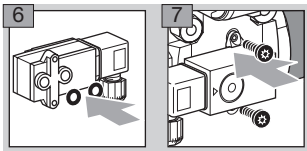
1 Disconnect the system from the electrical power supply.
2 Shut off the gas supply.
3 Purge the pipe.



Mounting the DG..C..1, DG..C..9 on valVario gas solenoid valves



▷ For pressure test points for inlet pressure $\mathbf{p_u}$, interspace pressure $\mathbf{p_z}$ or outlet pressure $\mathbf{p_d}$, select the installation position for the pressure switch from the operating instructions of the gas solenoid valve.
▷ Use enclosed screws only.



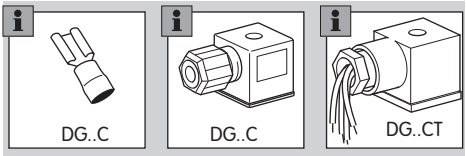
Wiring

! CAUTION

Please observe the following to ensure that the DG..C is not damaged during operation:

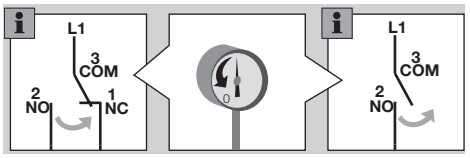
- If the DG..C..G (DG..VCT..G) has switched a voltage > 24 V (> 30 V) and a current > 0.1 A at cos φ = 1 or > 0.05 A at cos φ = 0.6 once, the gold plating on the contacts will have been burnt through. It can then only be operated at this power rating or higher power rating.
- Note the switching capacity, see page 5 (Technical data).

▷ The DG..C can be connected electrically using a tab receptacle (4.8 × 0.8 mm) or using a socket.
▷ The DG..CT is connected electrically via a socket with ½" NPT thread and pre-wired connection leads.



▷ The DG..C is available as an NO contact or a change-over contact.
▷ Observe contact position for decreasing/increasing pressure control:
Change-over contact switches from NO 2 to NC 1 for decreasing pressure control, from NC 1 to NO 2 for increasing pressure control. NO contact opens for decreasing pressure control, contact closes for increasing pressure control.

GB

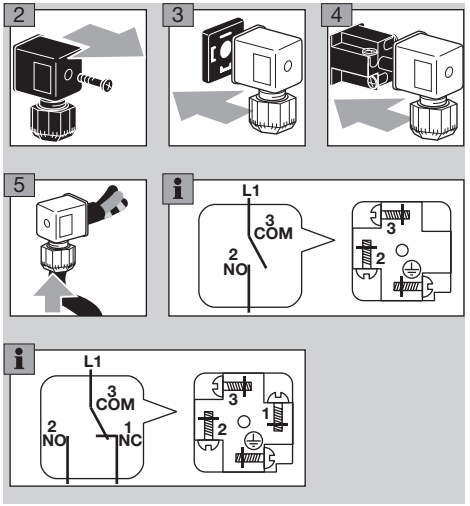


▷ Pressure switch DG can be used in Zone 1 (21) and 2 (22) hazardous areas if an isolating amplifier is installed upstream in the safe area as "Ex-i" apparatus pursuant to EN 60079-11 (VDE 0170-7):2012.

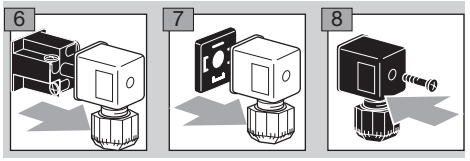
▷ DG as "simple electrical apparatus" pursuant to EN 60079-11:2012 corresponds to the Temperature class T6, Group II. The internal inductance/capacitance is Li = 0.2 µH/Ci = 8 pF.

1 Disconnect the system from the electrical power supply.

▷ Pre-wired connection leads for DG..CT: **1** = blue, **2** = red, **3** = black, **4** = yellow/green.

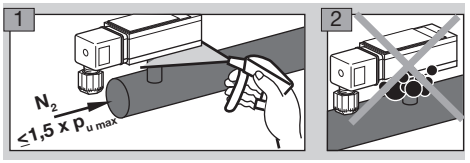


▷ Plug insert can be rotated in 90° steps.



Tightness test

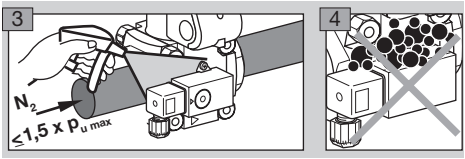
DG..C



DG..C..1, DG..C..9 for valVario gas solenoid valve

1 Shut off the downstream gas pipeline close to the valve.

2 Open the valve and the gas supply.



Adjustment

Adjusting ranges for DG..C, DG..VC

Type	Adjusting range* [mbar]	Switching hysteresis** [mbar]
DG 15..C	3–15	0.7–2
DG 17..VC	2–17	0.7–2
DG 30..VC	8–30	1–2
DG 35..C	5–35	1–2.5
DG 40..VC	5–40	1–2.5
DG 45..VC	10–45	1–2.5
DG 60..VC	10–60	1–3
DG 110..C	30–110	2–8
DG 110..VC	30–110	2–8
DG 150..VC	40–150	2–8
DG 250..C	70–250	5–15
DG 300..VC	100–300	6–20
DG 360..C	100–360	6–20
DG 500..VC	150–500	20–50

* The scale value is set to the switch-off point (adjusting tolerance = ± 15% of the scale value).

▷ Deviation from the switching point during testing pursuant to EN 1854 Gas pressure switches: ± 15%.

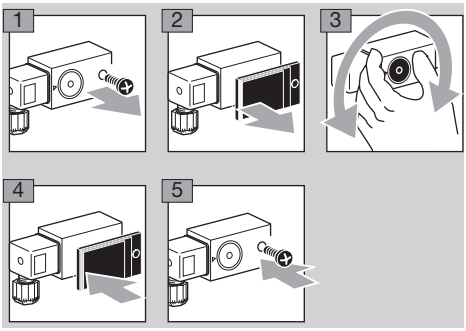
Adjusting ranges for DG..CT, DG..VCT

Type	Adjusting range* ["WC]	Switching hysteresis** ["WC]
DG 15..CT	1.2–6.0	0.28–0.8
DG 17..VCT	0.8–6.8	0.28–0.8
DG 30..VCT	3.2–12.0	0.4–0.8
DG 35..CT	2–14	0.4–1.0
DG 40..VCT	2–16	0.4–1.0
DG 45..VCT	4–18	0.4–1.0
DG 60..VCT	4–24	0.4–1.2
DG 110..CT	12–44	0.8–3.2
DG 110..VCT	12–44	0.8–3.2
DG 150..VCT	16–60	0.8–3.2
DG 250..CT	28–100	2.0–6.0
DG 300..VCT	40–120	2.4–8.0
DG 360..CT	40–144	2.4–8.0

* The scale value is set to the switch-on point (adjusting tolerance = ± 15% of the scale value).

** Mean switching differential at min. and max. setting

▷ For the DG..VC, the switching point is adjustable via hand wheel.



Accessories

See Technical Information DG (D, GB, F) – www.docuthek.com

Maintenance

We recommend a function check once a year, or every six months if operated with biogas.

Technical data

Safety information, see Safety manual DG (D, GB) – www.docuthek.com

Ambient conditions

Enclosure:
IP 54 pursuant to DIN EN 60529 with standard socket pursuant to DIN EN 175301-803,
IP 00 with AMP plug.
Safety class: 1.
This unit is not suitable for cleaning with a high-pressure cleaner and/or cleaning products.
Maximum medium and ambient temperatures:
DG..C: -20 to +70°C (-4 to +158°F),
DG..CT: -15 to +60°C (5 to 140°F).
Long-term use in the upper ambient temperature range accelerates the ageing of the elastomer materials and reduces the service life (please contact manufacturer).
Transport temperature = ambient temperature.
Storage temperature: -20 to +40°C (-4 to +104°F).

Mechanical data

Gas type: natural gas, town gas, LPG (gaseous), flue gas, biogas (max. 0.1 %-by-vol. H_2S) and air.
Max. inlet pressure p_{max} = withstand pressure = 600 mbar (8.5 psig).
Max. test pressure for testing the entire system: temporarily < 15 min. 2 bar (29 psig).
Diaphragm pressure switch, silicone-free.
Diaphragm: NBR.
Housing: glass fibre reinforced PBT plastic with low gas release.
Lower housing section: AlSi 12.
Weight: 60 g (2.12 oz).
Recommended tightening torques:
Screw terminals in socket: 35 Ncm
Cover screw: 45 Ncm
Socket: 45 Ncm

Electrical data

Conductor diameter: 0.5 to 1.8 mm (AWG 24 to AWG 13).
Switching capacity:
DG..C, 24–250 V AC:
I = 0.05–5 A at cos φ =1,
I = 0.05–1 A at cos φ = 0.6.
DG..C..G, 5–250 V AC:
I = 0.01–5 A at cos φ =1,
I = 0.01–1 A at cos φ = 0.6.
DG..C..G, 5–48 V DC: I = 0.01–1 A.
DG..VCT, 30–240 V AC:
I = 5 A at cos φ = 1,
I = 0.5 A at cos φ = 0.6.
DG..VCT..G, < 30 V AC:
I = 0.1 A at cos φ = 1,
I = 0.05 A at cos φ = 0.6.
RoHS compliant.

Designed lifetime

This information on the designed lifetime is based on using the product in accordance with these operating instructions. Once the designed lifetime has been reached, safety-relevant products must be replaced. Designed lifetime (based on date of manufacture) in accordance with EN 1854 for pressure switches:

Medium	Designed lifetime	
	Switching cycles	Time [years]
Gas	50,000	10
Air	250,000	10

You can find further explanations in the applicable rules and regulations and on the afecor website (www.afecor.org).
This procedure applies to heating systems. For thermoprocessing equipment, observe local regulations.

Logistics

Transport
Protect the unit from external forces (blows, shocks, vibration).
Transport temperature: see page 5 (Technical data).
Transport is subject to the ambient conditions described.
Report any transport damage on the unit or packaging without delay.
Check that the delivery is complete, see page 2 (Part designations).

GB

Storage
Storage temperature: see page 5 (Technical data).
Storage is subject to the ambient conditions described.
Storage time: 6 months before using for the first time. If stored for longer than this, the overall service life will be reduced by the corresponding amount of extra storage time.

Packaging
The packaging material is to be disposed of in accordance with local regulations.

Disposal
Components are to be disposed of separately in accordance with local regulations.

Certification

Declaration of conformity

CE

We, the manufacturer, hereby declare that the product DG..C with product ID No. CE-0085AQ0753 complies with the requirements of the listed Directives and Standards.
Directives:
– 2014/30/EU – EMC
– 2014/35/EU – LVD
– 2011/65/EU – RoHS II
– 2015/863/EU – RoHS III
Regulation:
– (EU) 2016/426 – GAR
Standards:
– EN 1854:2010
The relevant product corresponds to the tested type sample.
The production is subject to the surveillance procedure pursuant to Regulation (EU) 2016/426 Annex III paragraph 3.
Elster GmbH

Scan of the Declaration of conformity (D, GB) – see www.docuthek.com

SIL, PL

SIL PL

Safety-specific characteristic values, see Safety manual/Technical Information DG (D, GB, F) – www.docuthek.com

FM, UL, AGA approvals, Eurasian Customs Union, RoHS compliant

FM APPROVED c UL LISTED US AGA EAC RoHS compliant

REACH Regulation
The device contains substances of very high concern which are listed in the Candidate List of the European REACH Regulation No. 1907/2006. See Reach list HTS at www.docuthek.com.

Directive on the restriction of the use of hazardous substances (RoHS) in China
Scan of the Disclosure Table China RoHS2 – see certificates at www.docuthek.com

Contact

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kromschroder

If you have any technical questions, please contact your local branch office/agent. The addresses are available on the Internet or from Elster GmbH.

We reserve the right to make technical modifications in the interests of progress.

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