1 SAFETY

1.1 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.

1.2 Explanation of symbols

1, 2, 3, a, b, c = Action
➔ = Instruction

1.3 Liability

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

1.4 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.

1.5 Conversion, spare parts

All technical changes are prohibited. Only use OEM spare parts.
2 CHECKING THE USAGE

Gas pressure switches DG..T for monitoring increasing and decreasing gas or air pressure.

<table>
<thead>
<tr>
<th>Type</th>
<th>Positive pressure</th>
<th>Negative pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>DG..T, DG..FT</td>
<td>Gas, air, flue gas, biogas</td>
<td>Air, flue gas</td>
</tr>
<tr>
<td>DG..HT, DG..NT</td>
<td>Gas, air, flue gas, biogas</td>
<td>Air, flue gas</td>
</tr>
<tr>
<td>DG..ST</td>
<td>NH₃, O₂, air</td>
<td>–</td>
</tr>
</tbody>
</table>

DG..NT and DG..HT lock off after switching. They can be unlocked using the manual reset. This function is only guaranteed when used within the specified limits – see page 5 (10 Technical data). Any other use is considered as non-compliant.

2.1 Type code

DG Pressure switch for gas

| 6 | Adjusting range 0.2–2.4 "WC (0.5-6 mbar) |
| 10 | Adjusting range 0.4–4 "WC (1-10 mbar) |
| 50 | Adjusting range 1–20 "WC (2.5-50 mbar) |
| 150 | Adjusting range 12–60 "WC (30-150 mbar) |
| 500 | Adjusting range 40–200 "WC (100-500 mbar) |

H Switches and locks off with rising pressure

N Switches and locks off with falling pressure

F Switches with falling positive pressure

S Switches with rising and falling positive pressure; for O₂, NH₃ and air; without approval

T T-product

G With gold-plated contacts

-2 Electrical connection via screw terminals, 1/2" NPT Conduit, NEMA 4 (IP 65)

-4 Electrical connection via screw terminals, cable gland, NEMA 4 (IP 65)

-9 Electrical connection via 4-pin plug, with socket, NEMA 4 (IP 65)

1 NPT connection 1x 1/4"

2 NPT connection 2x 1/4"

N Blue pilot lamp for 120 V AC

T2 Red/green pilot LED for 110 to 230 V AC

K2 Red/green pilot LED for 24 V DC/AC

A External adjustment

Letter H, N, F, S omitted = DG..T switches with rising pressure

2.2 Part designations

1 Upper housing section with cover
2 Lower housing section
3 Hand wheel
4 1/2" conduit coupling
5 Manual reset (DG..NT and DG..HT only)

2.3 Type label

Approval and type: see type label. For detailed information on the adjusting range, mean switching differential, max. inlet pressure, lock-off, medium and switching properties, see page 5 (10 Technical data) and the table on page 3 (5 Adjustment).

3 INSTALLATION

⚠️ CAUTION

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

- Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
- Use approved sealing material only.
- Continuous operation with gases containing more than 0.1 %-by-vol. H₂S or ozone concentrations exceeding 200 µg/m³ accelerate the ageing of elastomer materials and reduce the service life. Check max. ambient temperature – see page 5 (10 Technical data).
- When using silicone tubes, only use silicone tubes which have been sufficiently cured.
- Vapours containing silicone can adversely affect the functioning of electrical contacts.
- Condensation or vapours containing silicone must not be allowed to get into the housing. At subzero temperatures, malfunctions/failures due to icing can occur.
- When installing outdoors, place the DG..T in a roofed area and protect from direct sunlight (even IP 65 version).
- Avoid strong impact on the unit.

Installation position

Installation position as required, preferably with vertical diaphragm. Then the switching point pₛ corresponds to the scale value SK set on the hand wheel. In other installation positions, the switching point pₛ will change and no longer correspond to the scale value SK set on the hand wheel. Check the switching point.
**4 WIRING**

- To ensure that the DL is not damaged during operation, note the switching capacity, see page 5 (10 Technical data).

In the case of low switching capacities, such as 24 V, 8 mA, for example, we recommend using an RC module (22 Ω, 1 μF) in air containing silicone or oil.

1. Disconnect the system from the electrical power supply.

**5 ADJUSTMENT**

- The switching point is adjustable via hand wheel.

1. Disconnect the system from the electrical power supply.

2. Detach the housing cover.

3. Connect an ohmmeter.

4. Set the switching point using the hand wheel.

5. Connect a pressure gauge.

6. Apply pressure. In doing so, monitor the ohmmeter and the pressure gauge.

- If the DG..T does not trip at the desired switching point, correct the adjusting range using the hand wheel. Relieve the pressure and repeat the process.
Pressure switches (DG..T, DG..FT, DG..ST):

<table>
<thead>
<tr>
<th>Type</th>
<th>Adjusting range1) &quot;WC (mbar)</th>
<th>Mean switching differential2) &quot;WC (mbar)</th>
<th>Max. inlet pressure psi (mbar)</th>
<th>With venting line</th>
<th>No venting line</th>
</tr>
</thead>
<tbody>
<tr>
<td>DG 6T</td>
<td>0.2–2.4 (0.5–6)</td>
<td>0.08–0.12 (0.2–0.3)</td>
<td>8.5 (600)</td>
<td>2.4 (165)</td>
<td></td>
</tr>
<tr>
<td>DG 10T</td>
<td>0.4–4 (1–10)</td>
<td>0.1–0.16 (0.25–0.4)</td>
<td>8.5 (600)</td>
<td>7 (480)</td>
<td></td>
</tr>
<tr>
<td>DG 50T</td>
<td>1–20 (2.5–50)</td>
<td>0.32–0.6 (0.8–1.5)</td>
<td>8.5 (600)</td>
<td>7 (480)</td>
<td></td>
</tr>
<tr>
<td>DG 150T</td>
<td>12–60 (30–150)</td>
<td>1.2–2 (3–5)</td>
<td>8.5 (600)</td>
<td>7 (480)</td>
<td></td>
</tr>
<tr>
<td>DG 500T</td>
<td>40–200 (100–500)</td>
<td>3.2–6.8 (8–17)</td>
<td>8.5 (600)</td>
<td>7 (480)</td>
<td></td>
</tr>
</tbody>
</table>

Pressure switches with manual reset (DG..HT, DG..NT):

<table>
<thead>
<tr>
<th>Type</th>
<th>Adjusting range1) &quot;WC (mbar)</th>
<th>Reset pressure4) &quot;WC (mbar)</th>
<th>Max. inlet pressure psi (mbar)</th>
<th>With venting line</th>
<th>No venting line</th>
</tr>
</thead>
<tbody>
<tr>
<td>DG 10T</td>
<td>0.4–4 (1–10)</td>
<td>0.16–0.4 (0.4–1)</td>
<td>8.5 (600)</td>
<td>7 (480)</td>
<td></td>
</tr>
<tr>
<td>DG 50T</td>
<td>1–20 (2.5–50)</td>
<td>0.4–0.8 (1–2)</td>
<td>8.5 (600)</td>
<td>7 (480)</td>
<td></td>
</tr>
<tr>
<td>DG 150T</td>
<td>12–60 (30–150)</td>
<td>2–6 (5–15)</td>
<td>8.5 (600)</td>
<td>7 (480)</td>
<td></td>
</tr>
<tr>
<td>DG 500T</td>
<td>40–200 (100–500)</td>
<td>6–10 (15–25)</td>
<td>8.5 (600)</td>
<td>7 (480)</td>
<td></td>
</tr>
</tbody>
</table>

1) Adjusting tolerance = ± 15% of the scale value.
2) Mean switching differential at min. and max. setting "WC (mbar).
3) Connect the venting line to port 4. Connections, see page 2 (3 Installation).
4) Difference between switching pressure and possible reset.

6 PRESSURE SWITCHES WITH MANUAL RESET

→ DG..NT locks off if the pressure drops to the value set using the hand wheel.
→ DG..HT locks off if the pressure rises to the value set using the hand wheel.
1) Reset the pressure switch using the manual reset.
→ Requirement for reset:
DG..NT: the pressure must have risen at least to the set switching point plus the pressure differential between the switching pressure and possible lock-off.
DG..HT: the pressure must have dropped at least to the set switching point minus the pressure differential between the switching pressure and possible lock-off.
→ For details of the pressure differential between the switching pressure and possible reset, see table on page 3 (5 Adjustment).

7 TIGHTNESS TEST

1) Shut off the downstream gas pipeline close to the valve.
2) Open the valve and the gas supply.
→ Check all used ports for tightness.
→ N₂ = 13 psi (max. 29 psi) <15 minutes

8 MAINTENANCE CYCLES

Check for external tightness at least once per annum, at least twice per annum for operation with biogas.

9 ACCESSORIES

9.1 Blue pilot lamp for 110/120 V AC
110/120 V AC, I = 1.2 mA, Order No.: 74916121.
9.2 Red/green pilot LED for 24 V DC/AC or for 110 V AC to 230 V AC
24 V DC, I = 16 mA; 24 V AC, I = 8 mA, Order No.: 74921089.
110 V AC to 230 V AC, Order No.: 74923275.

9.3 Further accessories
Further information about accessories can be found in Technical Information bulletin DG (identical to DG..T) – www.docuthek.com.

10 TECHNICAL DATA

10.1 Safety information

10.2 Ambient conditions
Maximum medium and ambient temperatures:
DG:-40 to +140°F (-40 to +60°C).
DG..S: 5 to +140°F (-15 to +60°C).
Long-term use in the upper ambient temperature range accelerates the ageing of the elastomer materials and reduces the service life (please contact manufacturer).
The set switching point may palpably change in media and ambient temperatures below -22°F (-30°C).
Transport temperature = ambient temperature.
Storage temperature: -4 to +104°F (-20 to +40°C).
Enclosure: IP 65.
This unit is not suitable for cleaning with a high-pressure cleaner and/or cleaning products.

10.3 Mechanical data
Gas types: natural gas, town gas, LPG (gaseous), flue gas, biogas (max. 0.1 %-by-vol. H2S) and air.
Max. inlet pressure \( p_{\text{max.}} \) = withstand pressure: 8.5 psi (600 mbar).
Max. test pressure for testing the entire system: temporarily (< 15 minutes) 29 psi (2 bar).
Diaphragm pressure switch, silicone-free.
Diaphragm: DG: NBR, DG..S: IIR.
Housing: glass fibre reinforced PBT plastic with low gas release.
Lower housing section: AISi 12.
Weight: 9.5 to 11.3 oz (270 to 320 g).
Recommended tightening torque:

<table>
<thead>
<tr>
<th>Component</th>
<th>Tightening torque [Ncm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover screws</td>
<td>65</td>
</tr>
<tr>
<td>( \frac{1}{2} &quot; ) NPT conduit</td>
<td>170 (15 lb&quot;)</td>
</tr>
<tr>
<td>Rp 1/8 pipe connection on aluminium lower section</td>
<td>250</td>
</tr>
<tr>
<td>Rp 1/4 connection (1/4&quot; NPT) on aluminium lower section</td>
<td>1300</td>
</tr>
<tr>
<td>Rp 1/8 connection on upper housing section</td>
<td>250</td>
</tr>
<tr>
<td>Clamping terminal screws</td>
<td>80</td>
</tr>
</tbody>
</table>

\( \frac{1}{2} " \) NPT Conduit
10.4 Electrical data
Safety class: 1.
Switching capacity:

<table>
<thead>
<tr>
<th></th>
<th>U</th>
<th>$\cos \phi = 1 , [\text{A}]$</th>
<th>$\cos \phi = 0.6 , [\text{A}]$</th>
</tr>
</thead>
<tbody>
<tr>
<td>DG..T</td>
<td>max. 240 V AC</td>
<td>max. 5</td>
<td>max. 0.5</td>
</tr>
<tr>
<td>DG..TG*</td>
<td>&lt; 30 V AC/DC</td>
<td>max. 0.1</td>
<td>max. 0.05</td>
</tr>
</tbody>
</table>

*With gold contacts*

Cable diameter: AWG 24 to AWG 13 (0.02 to 0.07* (0.5 to 1.8 mm)).
Line entrance: ½" NPT conduit.
Electrical connection type: screw terminals.

11 CERTIFICATION

11.1 China RoHS
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.

FM approved

Factory Mutual Research Klasse: 3510 Flow and pressure safety switches. Designed for applications pursuant to NFPA 85 and NFPA 86. www.approvalguide.com

UL listed


12 LOGISTICS

Transport
Protect the unit from external forces (blows, shocks, vibration).
Transport temperature: see page 5 (10 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.

Storage
Storage temperature: see page 5 (10 Technical data).
Storage is subject to the ambient conditions described.
Storage time: 6 months in the original packaging 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.

13 DISPOSAL

Devices with electronic components:

At the end of the product life (number of operating cycles reached), dispose of the packaging and product in a corresponding recycling centre. Do not dispose of the unit with the usual domestic refuse. Do not burn the product. On request, old units may be returned carriage paid to the manufacturer in accordance with the relevant waste legislation requirements.

FOR MORE INFORMATION

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschroder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

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