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Honeywell

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→ www.docuthek.com

Operating instructions

Gas pressure switches

C6097A, C6097B



Cert. version 02.20

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 09.18

The following chapters have been changed:

- Cert. version
- Adjustment

Checking the usage

Gas pressure switches C6097 for monitoring increasing and decreasing gas or air pressure.

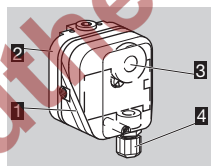
C6097A: switches with falling pressure,

C6097B: switches with rising pressure.

	Positive pressure	Negative pressure
C6097A	Gas, air, flue gas, biogas	Air, flue gas
C6097B	Gas, air, flue gas, biogas	Air, flue gas

This function is only guaranteed when used within the specified limits – see page 3 (Technical data). Any other use is considered as non-compliant.

Part designations



- 1 Upper housing section with cover
- 2 Lower housing section
- 3 Hand wheel
- 4 M16 cable gland

Type label



Max. inlet pressure = withstand pressure, mains voltage, ambient temperature, enclosure: see type label.

Installation

! CAUTION

Please observe the following to ensure that the C6097 is not damaged during installation and operation:

- 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.
- Use approved sealing material only.
- Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
- Check max. ambient temperature – see page 3 (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 C6097 in a roofed area and protect from direct sunlight (even IP 65 version).
- Avoid strong impact on the unit.
- In case of highly fluctuating pressures, install a restrictor orifice (Order No. 75456321).

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

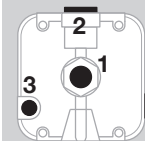


- ▷ The C6097 must not be in contact with masonry. Minimum clearance 20 mm.
- ▷ Ensure that there is sufficient installation space.
- ▷ Ensure unobstructed view of the hand wheel.

1 Disconnect the system from the electrical power supply.

2 Shut off the gas supply.

3 Ensure that the pipeline is clean.



1 and 2 for positive pressure (Rp ¼)

3 and 4 for negative pressure (Rp ⅓)

	Connect	Seal	Free
Positive pressure C6097	1	2	3 or 4
Negative pressure C6097	3	4	1 or 2
Differential pressure C6097	4	3	1 or 2
	1 or 2 for higher absolute pressure. 3 or 4 for lower absolute pressure. Seal the ports that are not in use.		

! CAUTION

Ports **3** and **4** are connected to the upper diaphragm chamber with the micro switch.

For this reason, pipes carrying gas must not be connected to port **3** or **4**.

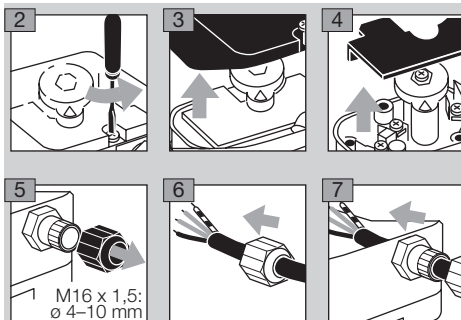
- ▷ A filter pad at port **4** protects the electrical contacts in the C6097 from dirt particles in the surrounding air or in the medium.
- ▷ Filter pad for port **3/4**, see PartDetective.

Wiring

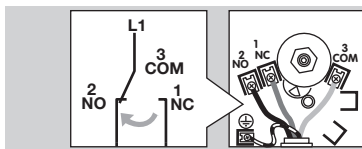
! CAUTION

Please observe the following to ensure that the C6097 is not damaged during operation:

- Note the switching capacity, see page 3 (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.



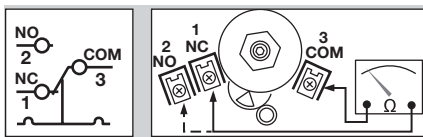
- ▷ Contacts **3** and **2** close when subject to increasing pressure. Contacts **1** and **3** close when subject to falling pressure.



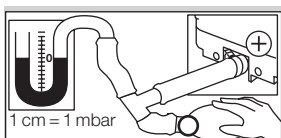
Adjustment

▷ The switching point is adjustable via hand wheel.

- 1 Disconnect the system from the electrical power supply.
- 2 Detach the housing cover, see page 3 (Technical data).
- 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.

Type	Adjusting range* [mbar]	Switching differential** [mbar]	Max. inlet pressure p_{max} [mbar]
C6097A4010	0.4–6	0.2–0.3	100
C6097A4110	1–10	0.25–0.4	500
C6097A4210	2.5–50	0.8–1.5	500
C6097A4310	30–150	3–5	600
C6097A4410	100–500	8–17	600

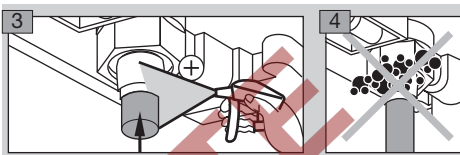
* Adjusting tolerance = $\pm 15\%$ of the scale value.

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

- ▷ Deviation from the switching point during testing pursuant to EN 1854 Gas and air pressure switches: $\pm 15\%$.
- ▷ If the C6097 does not trip at the desired switching point, correct the adjusting range using the hand wheel. Relieve the pressure and repeat the process.

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.



Maintenance

In order to ensure smooth operation, check the tightness and function of the C6097 every year, or every six months if operated with biogas.

- ▷ A function check can be carried out in case of decreasing pressure control e.g. with the PIA.
- ▷ After carrying out the maintenance work, check for tightness, see page 3 (Tightness test).

Technical 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, see page 3 (Adjustment).

Switching capacity:

	U	I ($\cos \varphi = 1$)	I ($\cos \varphi = 0.6$)
C6097	24 – 250 V AC	0.05 – 5 A	0.05 – 1 A

Maximum medium and ambient temperatures:
-20 to +80°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).

Storage temperature: -20 to +40°C.

Diaphragm pressure switch, silicone-free.

Diaphragm: NBR.

Housing: glass fibre reinforced PBT plastic with low gas release.

Lower housing section: AISi 12.

Enclosure: IP 65. Safety class: 1.

Cable diameter: 0.5 to 1.8 mm
(AWG 24 to AWG 13).

Line entrance: M16 x 1.5, clamping range:
diameters of 4 to 10 mm.

Electrical connection type: screw terminals.

Max. tightening torque, see Technical Information

C6097 – www.docuthek.com.

Weight: 270 to 320 g.

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 13611, 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.

Accessories

See Technical Information C6097 – www.docuthek.com

Logistics

Transport

Protect the unit from external forces (blows, shocks, vibration). On receipt of the product, check that the delivery is complete, see page 1 (Part designations). Report any transport damage immediately.

Storage

Store the product in a dry and clean place.

Storage temperature: see page 3 (Technical data).
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

We, the manufacturer, hereby declare that the product C6097 with product ID No. CE-0085AP0467 complies with the requirements of the listed Directives and Standards.

Directives:

2014/30/EU – EMC

2014/35/EU – LVD

Regulation:

(EU) 2016/426 – GAR

Standards:

EN 13611:2015+AC:2016

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

RoHS compliant



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

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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