krom//
schroder

Pressure switches for air DL..K

OPERATING INSTRUCTIONS

Cert. Version 11.19 · Edition 08.22 · EN · 03250205

CONTENTS

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

DL..K

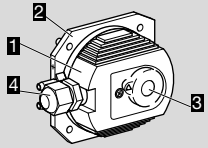
For monitoring positive, negative or differential air or flue gas pressures.

This function is only guaranteed when used within the specified limits – see page 5 (8 Technical data). Any other use is considered as non-compliant.

2.1 Type code

DL	Air pressure switch
3,3–40	Max. setting in Pa
K	With tube connection, hand wheel
T	T-product
G	With gold contacts
-1	Electrical connection via AMP plugs
-2	Electrical connection via screw terminals, ½" NPT
-3	Electrical connection via screw terminals
K2	Red/green pilot LED for 24 V DC/AC
N	Blue pilot lamp for 120 V AC
T	Blue pilot lamp for 230 V AC
T2	Red/green pilot LED for 230 V AC
W	Z-angle bracket

2.2 Part designations



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

2.3 Type label

Max. inlet pressure $p_{max.}$ = withstand pressure, mains voltage, switching pressure, ambient temperature and enclosure: see type label.

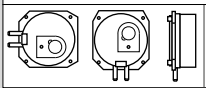
3 INSTALLATION

⚠ CAUTION

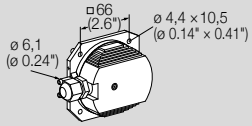
Please observe the following to ensure that the DL..K is not damaged during installation and operation:

- Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
- Condensation must not be allowed to get into the housing (if possible, install pipework with an ascending gradient). Otherwise, there is a risk of icing of condensation at subzero temperatures, the switching point shifting or corrosion in the device which can lead to malfunctions.
- In the case of an uneven mounting surface, secure the pressure switch to the mounting plate or air duct with only two screws on the same side in order to avoid subjecting the pressure switch to mechanical stress.
- Protect the connections against dirt or moisture in the medium to be measured or the surrounding air. If necessary, install a filter.
- When using silicone tubes, only use silicone tubes which have been sufficiently cured. Vapours containing silicone can adversely affect the functioning of electrical contacts.
- In case of highly fluctuating pressures, install a damping nozzle.

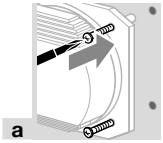
➔ Installation in the vertical or horizontal position, or upside down, preferably with vertical diaphragm. If installed in a vertical position, the switching point p_S will correspond to the scale value SK. If installed in another position, the switching point p_S will change and no longer correspond to the set scale value SK. Switching point p_S must be checked.

p_S = SK	SK + 13 Pa [+ 0,052 "WC]	SK - 13 Pa [- 0,052 "WC]
DL 3,3 – 40K		
		

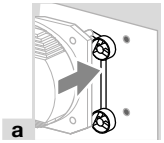
1 Install the DL..K using screws, a securing clip or an angle bracket.



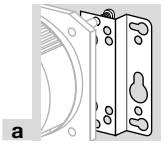
➔ Securing with screws:



➔ Securing clip:



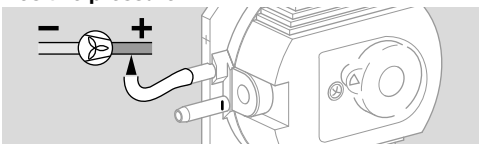
➔ Angle bracket:



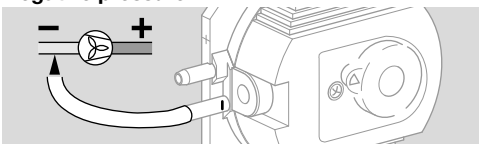
2 Connect the flexible tube. 6 mm (0.236") connection diameter.

➔ Max. inlet pressure $p_{max.}$ = 5000 Pa (20 "WC).

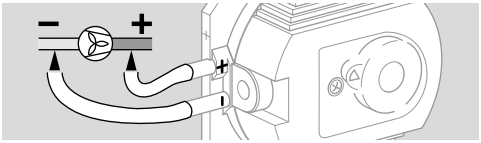
Positive pressure

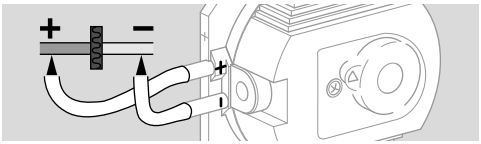


Negative pressure



Differential pressure





4 WIRING

⚠ CAUTION

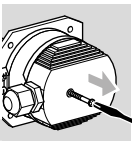
Please observe the following to ensure that the DL..K is not damaged during operation:

– If the DL..G (DL..TG) 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 (8 Technical data).

➔ In the case of high humidity, we recommend using a pressure switch with gold contact due to its higher resistance to corrosion. Closed-circuit current monitoring is recommended under difficult operating conditions.

➔ 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.



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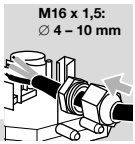

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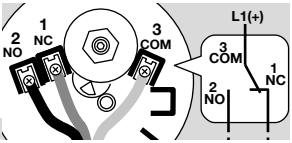

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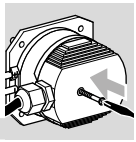

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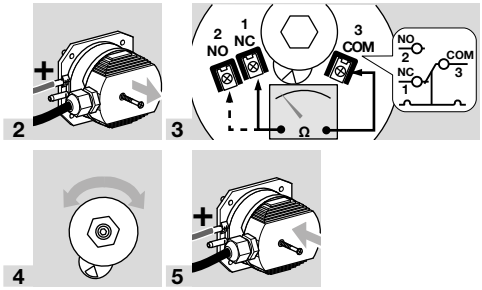
5 ADJUSTMENT

➔ The switching pressure can be adjusted using the hand wheel and scale. The switching pressure differs from the adjusted setpoint by a maximum of ± 15%, when it has been set for rising pressure and with a vertical diaphragm.

Type	Adjusting range [Pa]		Mean switching differential [Pa]		Switching point deviation during testing pursuant to EN 1854
	min.	max.	min.	max.	
DL 3,3K	20	330	8	20	± 7 Pa/± 15%
DL 3,5K	30	350	10	20	± 5 Pa/± 15%
DL 4,5K	30	500	12	25	± 5 Pa/± 15%
DL 5,1K	100	510	15	30	± 15%
DL 8K	50	800	17	30	± 14 Pa/ ± 15%
DL 11K	100	1100	20	35	± 20 Pa/ ± 15%
DL 16K	400	1600	30	40	± 15%
DL 24K	200	2400	45	55	± 40 Pa/ ± 15%
DL 40K	500	4000	70	90	± 15%

Type	Adjusting range ["WC]		Mean switching differential ["WC]		Switching point deviation during testing pursuant to EN 1854
	min.	max.	min.	max.	
DL 3,5KT	0.12	1.4	0.04	0.08	± 0.02 "WC/ ± 15%
DL 4,5KT	0.12	2	0.05	0.10	± 0.02 "WC/ ± 15%
DL 8KT	0.20	3.2	0.07	0.12	± 0.06 "WC/ ± 15%
DL 11KT	0.4	4.4	0.08	0.14	± 0.08 "WC/ ± 15%
DL 16KT	1.6	6.4	0.12	0.16	± 15%
DL 24KT	0.8	9.6	0.18	0.22	± 0.16 "WC/ ± 15%
DL 40KT	2.0	16.0	0.28	0.36	± 15%

1 Disconnect the system from the electrical power supply.



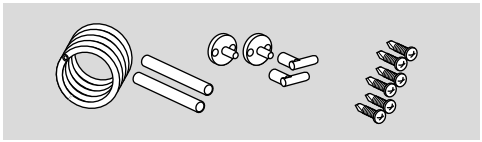
6 MAINTENANCE

➔ We recommend a function check once a year.

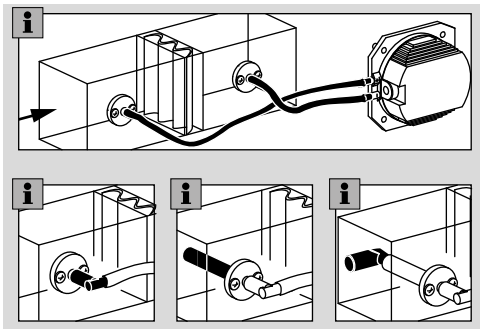
7 ACCESSORIES

Angle brackets, securing clips and other accessories, see Technical Information DL (D, GB, F) – www.docuthek.com

7.1 Tube set



2 m PVC tube, 2 duct connection flanges with screws, including angle connectors and extension. Order No.: 74919272.



8 TECHNICAL DATA

Ambient conditions

Enclosure to IEC 60529: IP 54.
Permitted ambient temperature in operation:
DL..K: -20 to +85°C (-4 to +185°F),
DL..KT: -40 to +60°C (-40 to +140°F).
Storage and transport temperatures:
-20 to +40°C (-4 to +104°F).

Mechanical data

Medium temperature = ambient temperature.
Max. inlet pressure $p_{max.}$ = withstand pressure: 5 kPa,
differential pressure: 5 kPa.
Diaphragm pressure switch, tempered LSR diaphragm system.
Housing: glass fibre reinforced PBT plastic with low gas release.
Weight: 125 g (4.4 oz).
Recommended tightening torque:

Component	Tightening torque [Ncm]
Cover screws	60
M16 x 1.5 cable gland	50
Clamping terminal screws	80

Electrical data

Line entrance: M16 x 1.5 (1/2" NPT conduit), clamping range: diameters of 4 to 10 mm.
Type of connection: screw terminals, cable diameter: 0.5 to 1.8 mm (AWG 24 to AWG 13).
Switching capacity:

	U	I (cos φ = 1)	I (cos φ = 0.6)
DL..K	24–250 V AC	0.05–5 A	0.05–1 A
DL..KG	5–250 V AC	0.01–5 A	0.01–1 A
DL..KG	5–48 V DC	0.01–1 A	0.01–1 A
DL..KT	30–240 V AC	5 A	0.5 A
DL..KTG	< 30 V AC/DC	0.1 A	0.05 A

Contact gap < 3 mm (μ).

8.1 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 DL..K: 10 years.
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.

9 LOGISTICS

Transport

Protect the unit from external forces (blows, shocks, vibration).
Transport temperature: see page 5 (8 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 (8 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.

10 CERTIFICATION

10.1 Certificate download

Certificates – see www.docuthek.com

10.2 Declaration of conformity

CE

We, the manufacturer, hereby declare that the products DL with product ID No. CE-0085AP0466 comply 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

10.3 UKCA certified

UK CA

Gas Appliances (Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019)
BS EN 1854:2010

10.4 FM and AGA approval, UL listing, Eurasian Customs Union, RoHS compliant

FM APPROVED
c UL us LISTED
AGA
EAC
RoHS compliant

10.5 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.

10.6 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.

11 DISPOSAL

Devices with electronic components:
WEEE Directive 2012/19/EU – Waste Electrical and Electronic Equipment Directive

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, Kromschröder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.

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