

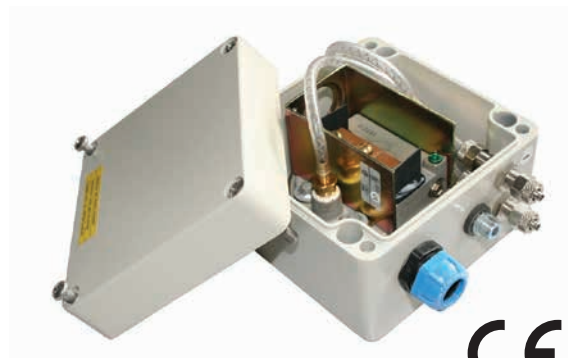
Description

DBK-2G3D differential pressure switches are suitable for measuring overpressure, differential pressure and underpressure of gaseous, non-aggressive media. Possible places of use are air ducts and supply or exhaust air devices. In combination with switching amplifiers with their own circuit, the sensors can be used within explosion-prone areas of zones 1, 2 and 22.

The sensor has a passive potential-free switching contact. Areas of application are: flow monitoring for electric heating registers, V-belt and filter monitoring, air pressure deficiency and limit value regulation.

The device is maintenance-free.

ATEX-compliant for zones 1, 2 and 22 according to the ATEX Directive 2014/34/EU.



(Fig. similar)



Delivery program

Type	Product No.	Adjustment range	Gear shift difference
DBK-2G3D-40-125	057.1308	40...125 Pa	25...38 Pa
DBK-2G3D-100-400	057.1307	100...400 Pa	38...50 Pa
DBK-2G3D-350-1400	057.1309	350...1400 Pa	75...100 Pa
DBK-2G3D-1000-5000	057.1317	1000...5000 Pa	100...150 Pa

Intrinsic

Simple electrical equipment according to IEC/EN 60079-11, Section 5.7, suitable for zone 1, 2 and 22. Only for connection to intrinsically safe circuits.

The specified values at the terminals must not be exceeded.

$U_o \leq U_i$	$9.6 \text{ V} \leq 30 \text{ V}$
$I_o \leq I_i$	$10 \text{ mA} \leq 50 \text{ mA}$
$P_o \leq P_i$	$24 \text{ mW} \leq 100 \text{ mW}$
$C_o \geq C_i + C_{\text{Cable}}$	$C_i = 0 \text{ } \mu\text{F}$
$L_o \geq L_i + L_{\text{Cable}}$	$L_i = 0 \text{ } \mu\text{H}$
$C_{\text{Cable}}, L_{\text{Cable}}$: see the specifications of the cable manufacturer	
C_o, L_o : see the documentation for the switching amplifier according to the gas group	

Technical data

Contact	Single-pole, potential-free changeover switch, goldet
Ambient temperature range	-30...+60 °C
Measuring medium	Gaseous, non-aggressive
Pressure connection	Ø 1/8" inside
Pressure connection HI	Higher pressure, lower vacuum
Pressure connection LO	Low pressure, higher vacuum

Housing	Aluminum
Housing protection type	IP65 (EN60529)
Physical dimensions	120 x 117 x 92 mm
Weight	Approx. 1600 g
Safety class	Simple electrical equipment according to EN 60079-11
Included	Differential pressure switches

Installation and operation

Safety instructions

All relevant national and international standards and regulations for hazardous areas must be observed. Equipment must be installed in accordance with the manufacturer's instructions. If the device is used in a manner different from that specified by the manufacturer, the safety level of the device may be reduced. EN/IEC 60079-14 can be used for the design, selection and construction of electrical systems.

- Intrinsically safe circuits are designed in such a way that the energy content is below the minimum level that would be required to cause ignition of an explosive atmosphere in the event of a spark occurring.
- Intrinsically safe circuits are shown in light blue and are to be laid separately from non-intrinsically safe circuits.
- The intrinsically safe sensor is passive, potential-free and approved for zones 1, 2 and 22.
- Observe the maximum connection values during instrumentation.
- Clean with damp cloth only. Avoid electrostatic charging. Remove dust deposits.

Commissioning and decommissioning

The switches can be mounted in any position. However, it is recommended to mount the connections downwards.

To increase the switching point, turn the adjusting screw clockwise.

To lower the switching point, turn the adjusting screw counterclockwise.

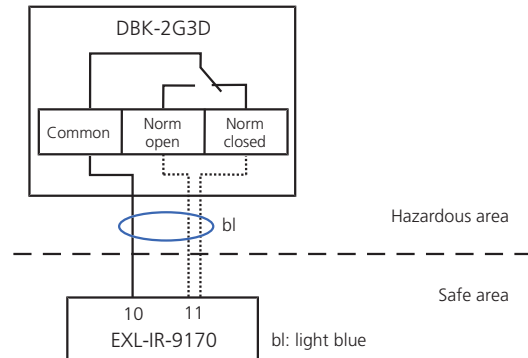
- HI connection for higher pressure or lower negative pressure
- Connection LO for low pressure or higher negative pressure

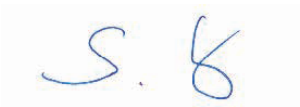
Recommended switching amplifier

- Ex-i switching amplifier by Company Stahl type EXL-IR-9170-11-12-11s
- When using the sensor together with a switching amplifier recommended by us, the intrinsic safety for simple circuits is proven
- Manufacturer's certificate for zone 1, 2 and 22

Electrical connection

The electrical connection is made according to the operating instructions of the switching amplifier.



We, the	
Schischek GmbH Mühlsteig 45 Business Park South 5 90579 Langenzenn GERMANY	
declare under sole responsibility in accordance with the provisions of the guidelines:	
2014/34/EU	
that the product	
DBK-2G3D	
to which this declaration refers, complies with the following norms or normative documents:	
EN 60079-11:2012 EN 60079-31:2014	EN IEC 60079-0:2018+AC:2020-02
Marking:	
CE Zone 1, Zone 2, Zone 22	
Simple resources	
Managing:	
	
(Dr. Sven Ludwig)	
90579 Langenzenn, 2024-09-01	

Manufacturer's declaration for sensors for use in hazardous areas

Item	Differential pressure switches	Manufacturer	Schischek GmbH
Type	DBK-2G3D	Property	Passive, potential-free
Installation in	Zone 1, 2	Associated equipment	EXL-IR-9170

Test goal

The differential pressure switch has been tested for suitability for installation and operation in hazardous areas of zones 1 and 2. The test is based on Directive 2014/34/EU (ATEX). The standards used are EN 60079-0, EN 60079-11 and EN 60079-31. The differential pressure switch is a simple electrical device within the meaning of EN 60079-11 Section 5.7 and must be operated via an intrinsically safe circuit. The switching amplifier EXL-IR-9170 from Company Stahl. The switching device may only be installed and operated in non-hazardous areas.

Proof of intrinsic safety for simple circuits in use with EXL-IR-9170

$U_o \leq U_i$	$9.6 \text{ V} \leq 30 \text{ V}$
$I_o \leq I_i$	$10 \text{ mA} \leq 50 \text{ mA}$
$P_o \leq P_i$	$24 \text{ mW} \leq 100 \text{ mW}$
$C_o \geq C_i + C_{\text{Cable}}$	$C_i = 0 \text{ }\mu\text{F}$
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Test	Result
IP protection	The device meets at least IP65
Inspection of metallic housing parts	Magnesium, titanium and zirconium content < 7.5 %
Checking plastic	Suitable in the used ambient temperature range -30 °C ... +60 °C
Electrostatics	Fully usable
Locks and latches	Not to comply with special conditions, not relevant
Grounding (potential equalisation)	Available or grounded via system components
Cable and cable entries	The cables must be protected from mechanical and thermal stress, after installation, min. IP54 must be fulfilled
Temperature testing	Together with the switching amplifier EXL-IR-9170, a temperature increase of <5 K was measured in the event of an error; operating temperature range: -30 °C ... +60 °C

Overall rating/additional comments

The DBK-2G3D differential pressure switch can be used in conjunction with the EXL-IR-9170 switching amplifier in zones 1, 2 and 22. The information in the data sheet or the operating instructions must be observed. The warnings regarding electrostatic charging must also be observed. After installation, at least the protection class IP65 must be guaranteed.



Langenzenn, 01. Sept. 2024
Wen Liu
Explosion Protection Officer

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