

### Description

DBK-2G 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 and 2.

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 zone 1 and 2 according to ATEX Directive 2014/34/EU.**



(Fig. similar)



### Delivery program

Type	Product No.	Adjustment range	Gear shift difference	Max. pressure
DBK-2G-20/300	057.1300	20...300 Pa	10 Pa ± 15 %	5000 Pa
DBK-2G-50/500	057.1301	50...500 Pa	20 Pa ± 15 %	5000 Pa
DBK-2G-100/1000	057.1302	100...1000 Pa	40 Pa ± 15 %	5000 Pa
DBK-2G-500/2000	057.1304	500...2000 Pa	100 Pa ± 15 %	5000 Pa
DBK-2G-1000/5000	057.1303	1000...5000 Pa	250 Pa ± 15 %	7500 Pa

### Intrinsic

Simple electrical equipment according to IEC/EN 60079-11, Section 5.7, suitable for zone 1 and 2. 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

<b>Contact</b>	Single-pole, potential-free changeover switch, goldt
<b>Ambient temperature range</b>	-20...+50 °C
<b>Storage temperature</b>	-30...+85°C
<b>Humidity</b>	0...90% RH (non-condensing)
<b>Measuring medium</b>	Gaseous, non-aggressive
<b>Membrane</b>	Silicon
<b>Pressure connection</b>	Ø 6 mm for hoses 6 x 1

<b>Pressure connection P1</b>	Higher pressure, lower vacuum
<b>Pressure connection P2</b>	Low pressure, higher vacuum
<b>Housing</b>	Plastic, PVC, Lid ABS
<b>Housing protection type</b>	IP54 (EN60529)
<b>Physical dimensions</b>	103 x 88 x 90 mm
<b>Weight</b>	154 g
<b>Temperature class</b>	T6 (max. 85 °C)
<b>Included</b>	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 and 2.
- Observe the maximum connection values during instrumentation.
- Clean with damp cloth only. Avoid electrostatic charging. Remove dust deposits.

#### Commissioning and decommissioning

The specifications for the switching pressure refer to the vertical mounting of the differential pressure switch. It is recommended to mount the connections downwards. If the AMP connections are mounted upwards, the switch-on value increases by 20 Pa.

If the pressure connections are not used, protect the connections with filters against dirt.

- HI connection for higher pressure or lower negative pressure
- Connection LO for low pressure or higher negative pressure
- If the pressure connections are not used, protect the connections with filters against dirt

#### 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

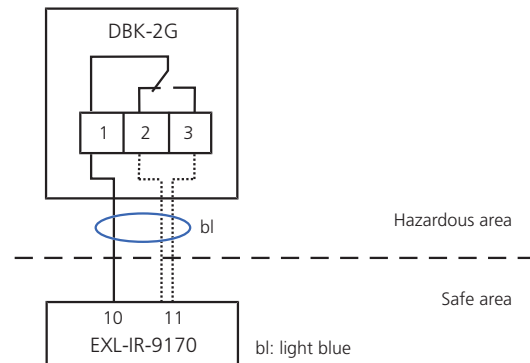
### Accessories

Installation Kit 2:

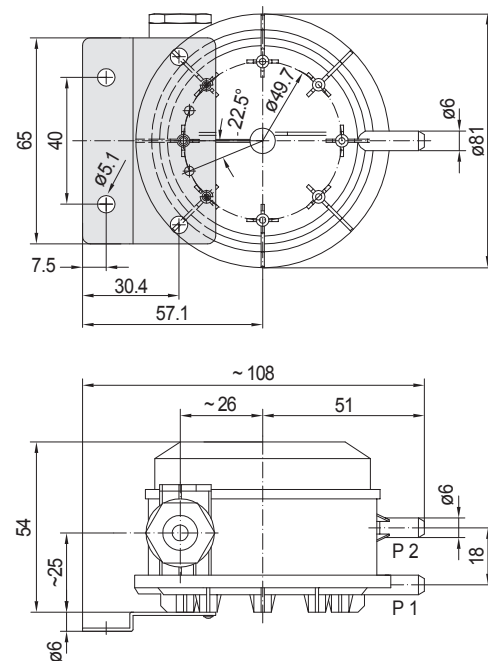
- 2 plastic connection nipples
- PVC hose (2 m)

### Electrical connection

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



### Dimensions



(all measurements in mm)

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-2G	
to which this declaration refers, complies with the following norms or normative documents:	
EN 60079-11:2012	EN IEC 60079-0:2018+AC:2020-02
Marking:	
CE Zone 1, Zone 2	
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-2G	Property	Passive, potential-free
Installation in	Zone 1, 2	Associated equipment	EXL-IR-9170-11-12-11s

#### 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 applied are EN 60079-0 and EN 60079-11. 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 amplifier may only be installed and operated in non-hazardous areas.

#### Proof of intrinsic safety for simple circuits in use with EXL-IR-9170-11-12-11s

$U_o \leq U_i$	$9.6 \text{ V} \leq 30 \text{ V}$
$I_o \leq I_i$	$10 \text{ mA} \leq 50 \text{ mA}$
$P_o \leq P_i$	$24 \text{ mW} \leq 100 \text{ mW}$
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Test	Result
IP protection	The device meets at least IP54
Inspection of metallic housing parts	Magnesium, titanium and zirconium content < 7.5 %
Checking plastic	Suitable for use in the ambient temperature range -20 °C ... +50 °C
Electrostatics	Can be used without restriction in groups IIA and IIB, for group IIC the warning "Wipe only with a damp cloth" applies
Locks and latches	Not to comply with special conditions, not relevant
Grounding (potential equalisation)	Double insulation, no PE, PA necessary 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-917-11-12-11s, a temperature increase of <5 K was measured in the event of an error; operating temperature range: -20 °C ... +50 °C

#### Overall rating/additional comments

The DBK-2G differential pressure switch can be used in conjunction with the EXL-IR-9170 switching amplifier in zones 1 and 2. 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 IP54 must be guaranteed.



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

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