

## **Description**

LGW-2G-...-SIL differential pressure switches monitor 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 an intrinsically safe current circuit, the sensors can be used within hazardous 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.



# **Delivery program**

Туре	Product No.	Adjustment range
LGW-2G-40-300-SIL	057.1370	40300 Pa
LGW-2G-100-1000-SIL	057.1371	1001000 Pa
LGW-2G-250-5000-SIL	057.1372	2505000 Pa
LGW-2G-3000-15000-SIL	057.1373	300015000 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 V ≤ 30 V
$I_0 \le I_i$	10 mA ≤ 50 mA
$P_o \leq P_i$	24 mW ≤ 100 mW
$C_o \ge C_i + C_{Cable}$	$C_i = 0 \mu F$
$L_o \ge L_i + L_{Cable}$	$L_i = 0 \mu H$
C <sub>Cable</sub> , L <sub>Cable</sub> : see the specifications of the cable manufacturer	

Co, Lo: see the documentation for the switching amplifier according to the gas group

# **Technical data**

Contact	Single-pole, potential-free changeover switch
Gear shift difference	30 Pa ± 15 %
Max. operating pressure	50,000 Pa (500 mbar)
Ambient	−20+50 °C
Storage temperature	−30+85 °C
Humidity	050% RH (non-condensing)
Measuring medium	Gaseous, non-aggressive
Membrane	NBR, silicone-free

Pressure connection	Ø 4.6 mm
Housing	Plastic, PC
Housing protection type	IP54 (EN60529)
Safety class	Simple electrical equipment according to EN 60079-0/EN 60079-11
Dimensions (L×W×D)	82 x 82 x 47.1 mm
Weight	200 g
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 and 2.
- Observe the maximum connection values during instrumentation.
- Clean with damp cloth only. Avoid electrostatic charging.
  Remove dust deposits.
- Observe separate documentation:
  - Switching amplifiers

## Assembly and installation

Connection + for higher pressure or lower vacuum

Connection – for lower pressure or higher vacuum

1 mbar = 100 Pa

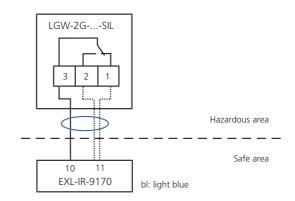
1 Pa = 0.01 mbar

## **Recommended switching amplifier**

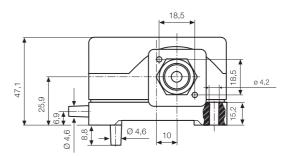
- Ex-i switching amplifier from Company Stahl type EXL-IR-9170-11-12- 11s
- When using the sensor together with a switching amplifier recommended by us, the intrinsic safety for simple circuits is proven
- Manufacturer's certificate for zone 1, 2

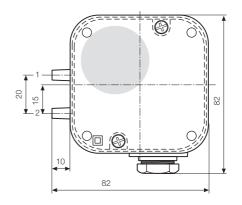
#### **Electrical connection**

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

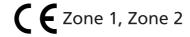
LGW-2G-...-SIL

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:



Simple resources

Managing:

S. 6

(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
Туре	LGW-2GSIL	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 applied are EN 60079-0 and EN 60079-1. 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 is suitable. 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

$U_o \le U_i$	9.6 V ≤ 30 V	
$I_0 \le I_i$	10 mA ≤ 50 mA	
$P_o \le P_i$	24 mW ≤ 100 mW	
$C_o \ge C_i + C_{Cable}$	$C_i = 0 \mu F$	
$L_{o} \ge L_{i} + L_{Cable}$	$L_i = 0 \mu H$	
C <sub>Cable</sub> , L <sub>Cable</sub> : see the specifications of the cable manufacturer		
C <sub>o</sub> , L <sub>o</sub> : see the documentation for the switching amplifier according to the gas group		

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 in the used ambient temperature range –20+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
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: $-15+50$ °C

## Overall rating/additional comments

The LGW-2G-...\_SIL differential pressure switch can be used in zones 1 and 2 in conjunction with the EXL-IR-9170 switching amplifier. 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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