Pressure sensors for explosion hazardous areas

Ex d II C T4 – T6 acc. to ATEX

with internal diaphragm

with front flush diaphragm

Accuracy: **0.5 % (0.25% BFSL)**

Standard output:

4...20 mA;	2-wire system
1…5VDC;	3-wire system
0.5…4.5VDC;	3-wire system
0…10VDC;	3-wire system

Description

The encapsulated explosion-proof pressure sensors are leading-edge products among ⟨Ex⟩-approved sensors.

The new pressure sensors with pressure-tight encapsulation have design approval according to ATEX II 2 G Ex d II C.

The measuring ranges stepped in line with the European standard extend from 0.4 bar up to the top pressure range of 1,000 bar. The housing and parts that come into contact with the measuring medium are made from stainless steel and are therefore resistant to chemically aggressive measuring substances. The pressure connection and measuring cell are welded together. This makes the measuring system exceptionally resistant to the influence of mechanical shock or vibrations.

Available as standard signal is a 4-20mA current loop in a 2-wire system. Optionally available are voltage outputs in a 3-wire system such as 1-5 V, 0-10 V or 0.5-4.5 V.

The pressure connection with type PEX 17 has a G ½ B external thread as standard. The front-flush version PEX18 avoids dead space in which measuring medium can crystallize out or form residue.

These industrial heavy duty pressure sensors conform to the electromagnetic compatibility requirements (EMC) of EN 61326.

Features

- O ATEX approved II 2G Ex d II C
- O For dynamic and static measurements
- O High long-term stability
- O High overload protection
- O Finely graded selection of nominal pressure ranges according to EN
- O Corrosion resistant stainless steel design
- O Good repeatability

Measuring ranges

Gauge pressure

Negative	-1...0	bar	to	-0.4...0 bar
Positive	0...0.4	bar	to	0... 1,000 bar
Absolute pressure	0...0.4	bar	to	0... 16 bar

Applications

Gas pressure measurement

Oil drilling platforms / pipelines

Refineries / Petrochemical industry

Borehole monitoring

Model: PEX17, PEX18

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Technical data

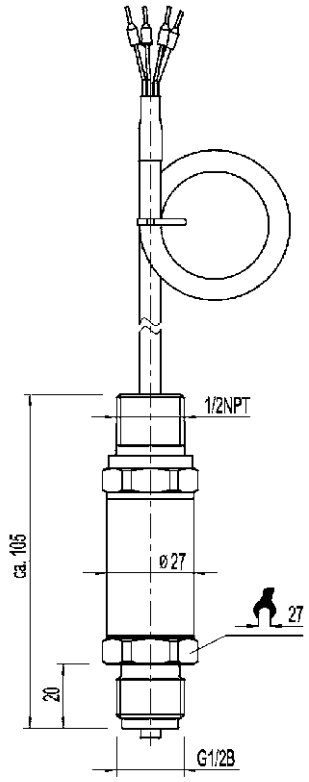
Model	PEX17	PEX18
Type	Standard with internal diaphragm	Standard with front flush diaphragm
Pressure type	negative / positive / high pressure absolute pressure [2)]	
Output signal	4...20 mA 2- wire system 1…5VDC Low Power, 3-wire system 0…10 VDC 3-wire system 0.5…4.5VDC Low Power, 3-wire system	
Accuracy % of F.S. [1)]	0.5 (option 0.25 BFSL)	
Measuring ranges acc. to EN	0 ... 0.4 bar to 0 ... 1,000 bar	0 ... 0.4 bar to 0 ... 600 bar
Non-Repeatability	≤ ± 0.1 % of F.S.	
Stability (annual)	≤ ± 0.2 % of F.S. in rated conditions	
Case	stainless steel	
Process connection	G ½ B acc. EN 837 G ¼ B ½ NPT ¼ NPT	≤ 0…1.6 bar G 1 B; ≥2.5 bar G 1/2 B
Wetted parts O-ring	stainless steel >25 bar Elgiloy®	stainless steel O-Ring NBR Option FPM, EPDM
Overload limit	≤ 16 bar 3.5-fold; ≤ 600 bar 2-fold; > 600 bar 1.5-fold; vacuum proof	
Electr. connection and protection type acc. to EN 60 529/IEC529	Conduit IP 67 with 6ft cable	
Power supply	10 ... 30 VDC with signal output 4…20 mA, 2-wire 6 ... 30 VDC with signal output 1…5 VDC, 3-wire 14 ... 30 VDC with signal output 0…10 VDC, 3-wire 5 ... 30 VDC with signal output 0.5…4.5 VDC, 3-wire	
Power consumption	4…20 mA 2-wire, signal current	
Load standard	4…20 mA 2-wire system $R_A[\Omega] \leq (U_B[V]-10V)/0.02A$ 1…5 VDC 3-wire system $R_A[\Omega]>10k$ 0…10 VDC 3-wire system $R_A[\Omega]>10k$ 0.5…4.5 VDC 3-wire system $R_A[\Omega]>5k$	
Temperature comp. Range	0.... 80 °C	
Temperature influence [4)]	≤ 0.2 % /10 K on zero and span	
Response time	≤ 1 ms (within 10 % to 90 % of. F.S.), ≤ 10 ms at medium temperatures below -30°C for pressure ranges up to 25 bar or with flush diaphragm	
Protection type	IP 67 acc. to EN 60 529/IEC 529	
CE-certification HF immunity	89/336/EEC emission (class B) and immunity according to EN 61326 Pressure equipment directive 97/23EC Directive ATEX 94/9/EC 10 V/m	
Burst	4 KV	
Wiring protection	Sig+ towards UB- UB+ towards UB-	
⟨Ex⟩ Explosion proof protection type ATEX Temperature ranges - storage - media - ambient	EX d II c T4-T6 [3)] -30 ... 105 °C (-40 ... 105°C optional) -30 ... 100 °C (-40 ... 105°C optional) -30 ... 100 °C (-40 ... 105°C optional)	
Weight	ca. 0.2 kg	

of.F.S.= of Full Scale

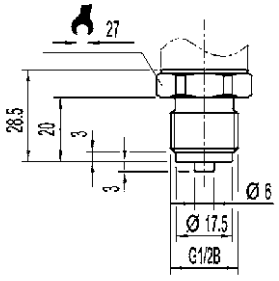
[1)] Terminal point adjustment according to IEC 61298-2, including non-linearity and hysteresis, zero point and full scale deviation
[2)] Absolute pressure from 0,4 bar to 16 bar
[3)] Application conditions and safety data see listing acc. to EC Type Test certificate (KEMA 10ATEX0099 X)

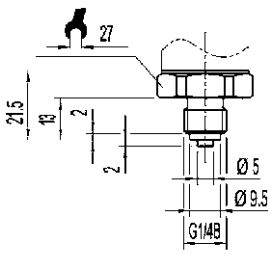
Dimensions (mm)

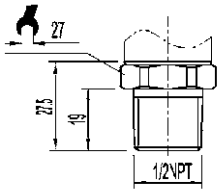
Case

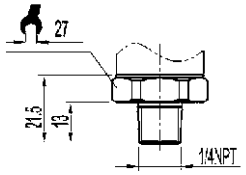


Pressure connection
internal diaphragm

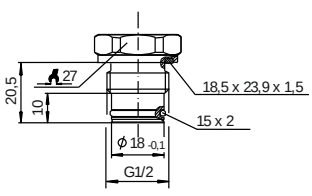




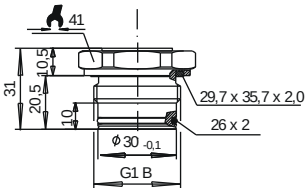




Pressure connection
front flush diaphragm



A-016



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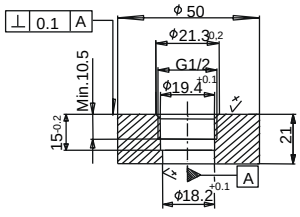
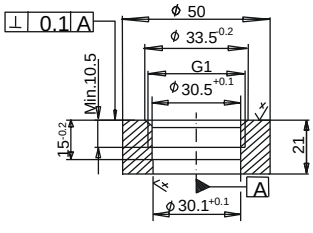
Weld-on adapter
front flush diaphragm



S-003



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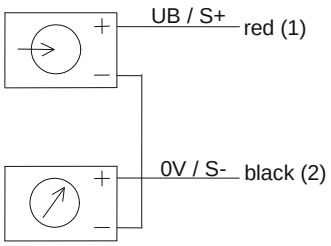
Electrical connection

Two-wire system

Cable outlet



Three-wire system

Cable outlet