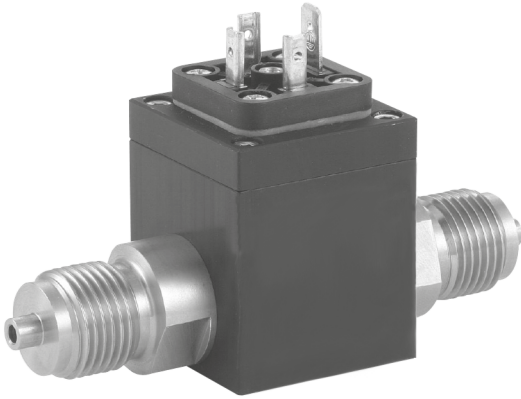




PD-02

Differential Pressure Transmitter for Fluids and Gases



Features

- / Accuracy class 0.5%
- / 2 piezo-resistive st. steel sensors
- / Separation through diaphragms
- / Stainless steel 1.4535 diaphragms
- / Diff. pressure from 20 mbar to 16 bar
- / High static overpressure
- / Shock and vibration protection

Description:

The PD-02 differential pressure transmitter detects the pressure levels present at its two process connections by means of two piezo-resistive sensor elements and records the difference between their measuring signals. The generated signal proportional to the differential pressure is internally amplified and output to the pins of PD-02 either as a 4 to 20 mA 2-wire signal or as a 0 to 10 V DC 3-wire signal for further processing. For the wetted parts, only stainless steels 1.4404 and 1.4435 and FKM sealing material (others on request) are used in this design, whereby PD-02 can cater to a wide range of fluids or gasses when selecting the media.

Application:

The compact design of the PD-02 differential pressure transmitter allows integration of devices even in installations or machines with restricted conditions of space. The transmitters are stable for long periods, robust against shocks and vibrations and are secure against static pressure that can reach up to 30-times the differential pressure range. There are 12 standard operating ranges from 0...20 mbar to 0...16 bar differential pressure available to the user. As process connections, male as well as female thread systems can be used. If necessary, also the UNF thread system can be supplied which is mostly in demand in the refrigeration technology. The PD-02 differential pressure transmitters are used in areas such as:

- / Machine construction
- / Plant manufacturing
- / Filter monitoring
- / Hydraulics
- / Flow measurement with orifices or dynamic pressure sensors



Measuring ranges:

Nominal pressure [bar]	0.2	0.4	1	2.5	6	16
Differential pressure range [bar]	0..0.02 up to 0..0.2	0..0.04 up to 0..0.4	0..0.1 up to 0..1	0..0.25 up to 0..2.5	0..0.6 up to 0..6	0..1.6 up to 0..16
Permissible static pressure, one-sided [bar]	0.5	1	3	6	20	60

Technical Specifications:

Accuracy /

- ≤ ± 0.5 % FSO: Diff. pressure range with TD from 1:1 up to 1:5
- ≤ ± 1.0 % FSO: Differential pressure range with TD > 1:5 up to 1:10 (Characteristic line deviation as per IEC 60770 limiting point setting (non-linearity, hysteresis, repeatability))

Permissible load /

Power output 2-wire:
 $R_{max} = [(U_B - U_B \text{ min}) / 0.02A] \Omega$
 Voltage 3-wire: $R_{min} = 10 \text{ k}\Omega$

Influencing factors /

Voltage supply: 0.05% FSO / 10V
 Load: 0.05% FSO / kΩ

Long period stability /

≤ ± 0.2 % FSO / year

Response time /

< 5 ms

Temperature error /

(nominal pressure)

- Tolerance band: 0.2 bar: ≤ ± 2.5 % FSO
0.4 bar: ≤ ± 2.0 % FSO
≥ 1.0 bar: ≤ ± 1.5 % FSO
- TC average: 0.2 bar: ± 0.4 % FSO/10K
0.4 bar: ± 0.3 % FSO/10K
≥ 1.0 bar: ± 0.2 % FSO/10K
- In compensated range: 0.2 bar: 0..50°C
0.4 bar: 0..50°C
≥ 1.0 bar: 0..70°C

Mechanical stability /

Vibration: 10 g RMS (20..2000 Hz)
 Shock: 100 g / 11 ms

Storage temperature /

-40..+100°C

Ambient temp. /

-25..+85°C

Media temp. /

-25..+125°C

Materials /

- Housing: aluminium, black anodized
- Pressure connection: stainless steel 1.4404
- Sealing (wetted): FKM (Viton®), other sealing materials on request
- Sep. membranes: stainless steel 1.4435
- Wetted parts: pressure connection, sealing, separation membranes

Weight /

max. 250 g

Life span /

> 100 x 10⁶ load cycles

Electrical Specifications:

Output signal /

4..20 mA, 2-wire or
 0..10 VDC, 3-wire

Supply voltage /

12..36 VDC at current output,
 14..36 VDC at voltage output

Power consumption /

max. 25 mA at current output,
 max. 7 mA at voltage output

Electrical protection /

- Short-circuit stability: permanent
- Pole-reversal protection: no function if interchanged connections, but also no damage
- Electromagnetic compatibility: error signal and stability as per EN 61326

Electrical connections /

cubic plug ISO 4400, others on request

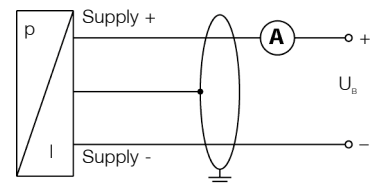
Protection class /

IP65

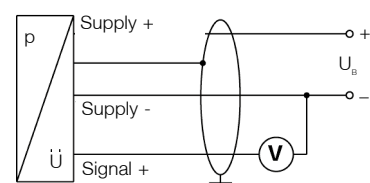
PIN-layout:

	2-wire-current output	3-wire-voltage output
Supply +	1	1
Supply -	2	2
Signal +	not used	3
Ground	Ground contact	Ground contact

2-wire-system (current)



3-wire-system (voltage)

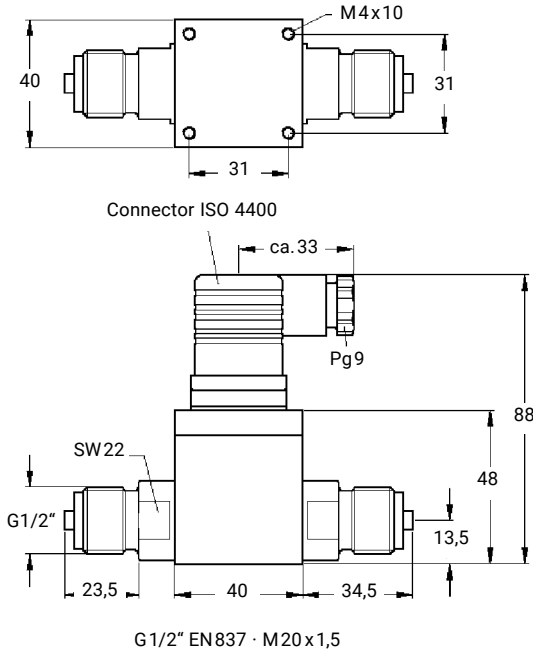




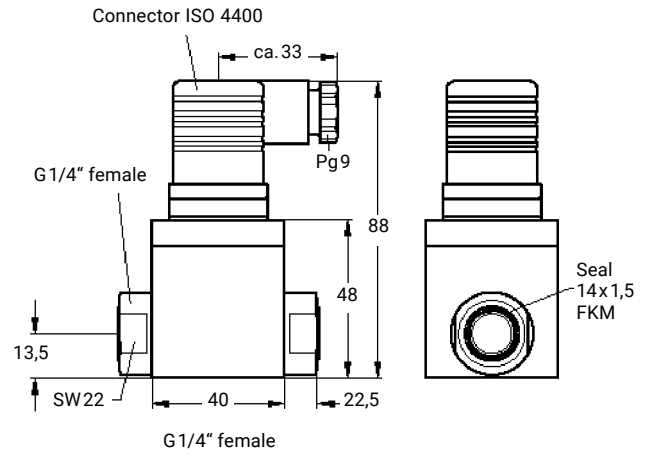
Dimensions in mm:

Mechanical connections:

2 x G 1/2"-male thread



2 x G 1/4"-IG



Ordering Codes:

Order number PD-02. 1. 2. 4. B. 1

PD-02 Differential Pressure Transmitter for Fluids and Gases

Output /

- 1 = 4...20 mA, 2-wire
- 2 = 0...10 VDC, 3-wire

Process connection /

- 1 = G1/2"-male as per EN 837
- 2 = 7/16-UNF as per DIN 3866
- 3 = G1/4"-female

Nominal pressure range /

- 1 = 0.2 bar, max. one-sided static pressure 0.5 bar, Operating ranges A, B, C
- 2 = 0.4 bar, max. one-sided static pressure 1 bar, Operating ranges B, C, D, E
- 3 = 1 bar, max. one-sided static pressure 3 bar, Operating ranges C, D, E, F, G
- 4 = 2.5 bar, max. one-sided static pressure 6 bar, Operating ranges D, E, F, G, H
- 5 = 6 bar, max. one-sided static pressure 20 bar, Operating ranges F, G, H, I, J
- 6 = 16 bar, max. one-sided static pressure 60 bar, Operating ranges H, I, J, K, L

Operating range /

- A = 0...0.02 bar Differential pressure
- B = 0...0.04 bar Differential pressure
- C = 0...0.1 bar Differential pressure
- D = 0...0.25 bar Differential pressure
- E = 0...0.40 bar Differential pressure
- F = 0...0.60 bar Differential pressure
- G = 0...1 bar Differential pressure
- H = 0...2.5 bar Differential pressure
- I = 0...4.0 bar Differential pressure
- J = 0...6.0 bar Differential pressure
- K = 0...10 bar Differential pressure
- L = 0...16 bar Differential pressure

Special design /

- 0 = none
- 1 = please specify in detailed text

2 x 7/16-UNF"-male

