

Pressure Transmitter

With piezoresistive measuring cell

Pressure ranges 0 – 100 mbar to 0 – 1000 bar

PTM

Applications

Pressure transmitter models PTM are suitable for overpressure and absolute pressure measurement of liquid and gaseous media from 0 – 100 mbar up to 0 – 1000 bar, which do neither corrode stainless steel 316L (1.4404 and 1.4435) nor Viton. Two basic versions are available:

Overpressure	0 – 100 mbar to 0 – 1000 bar (up to 0 – 16 bar with ventilation to atmosphere)
Absolute pressure (a)	0 – 100 mbar to 0 – 1000 bar (reference point zero absolute)

The pressure transmitters are temperature-compensated and provide a calibrated output signal.

Construction

The piezoresistive sensor is installed in the pressure connection piece and is surrounded by silicone oil. It is separated from the medium by a thin stainless steel diaphragm. The earth conductor of the plug connector is connected to the case.

The attachment of chemical seals, e.g. for the food industry, is possible, see data sheets of catalogue heading 7...

Standard Version

Construction Type

Installation length: standard

Process Connection

G ½ B (½" BSP), stainless steel 316L (1.4404)

Measuring Cell/Sensor

Piezoresistive measuring cell: stainless steel 316L (1.4435)
Diaphragm, placed inside: stainless steel 316L (1.4435)

Sensor Sealing

FPM (Viton®)

Case

Stainless steel 304 (1.4301), degree of protection IP65

Pressure Ranges/Overload Capability (üs)

Overpressure and absolute pressure	üs	Overpressure and absolute pressure	üs	Overpressure and absolute pressure	üs
in bar					
0 – 100 mbar	2.5	0 – 4	7	0 – 40	100
0 – 160 mbar	2.5	0 – 6	15	0 – 60	150
0 – 250 mbar	2.5	0 – 10	30	0 – 100	300
0 – 400 mbar	2.5	0 – 16	30	0 – 160	300
0 – 600 mbar	2.5	0 – 25	100	0 – 250	300
0 – 1	3			0 – 400	1100
0 – 1.6	7			0 – 600	1100
0 – 2.5	7			0 – 1000	1100

The corresponding vacuum/compound ranges are also available.

Output Signal

Output signal	Supply voltage	Load impedance
4...20 mA 2-wire	10...40 V DC	(U _B – 10 V) / 0.02 A
0...20 mA 3-wire	8...28 V DC	(U _B – 8 V) / 0.02 A
0...10 V 3-wire	13...28 V DC	min. 10 kΩ

Measuring Accuracy

Better than ±0.5 % of full scale value (including non-linearity, hysteresis and non-repeatability)

For measuring spans 100, 160 and 250 mbar ±1.0 %

Temperature Ranges

Storage temperature: –40 / +125 °C (–40 / +257 °F)
Rated temperature: –10 / +80 °C (–14 / +176 °F)

Temperature Influence in the Rated Temperature Range

Zero point: <0.3 % / 10 K
Span: <0.2 % / 10 K

Mechanical Shock

100 g/1 ms

Mechanical Vibration

Max. 20 g at 15 – 2000 Hz

Reference Temperature

+20 °C (+68 °F)

Long-term Stability of Zero Point and Span

Better than ±0.25 % p.a.

Reverse Voltage Protection

Available

Electrical Connection

Plug connection 3-pin + protective contact (DIN EN 175 301-803)
For assuring the electromagnetic compatibility (EMC), please use a shielded cable (e.g. LP/LiMYCY). The shield has to be connected to the case.

Position of Installation/Position of Connection

Any

EMC

EN 61 000-6-3, 61 000-6-2

Options

- **Process connection:**
 - G ¼ B, ¼" NPT, ½" NPT (DIN EN 837-3), M 12x1.5, M 20x1.5
 - high pressure connection (female or male thread)
 - VCR® union nut, VCR® male thread rigid
 - others upon request
- **Electrical connection:**
 - cable gland (IP67) with 2 m (6.56') cable
 - circular plug connector M 12x1 (IP67)
 - angular cable box without cable, optional with 2 m (6.56') die cast cable
 - straight cable box without cable
 - others upon request
- **Special version:**
 - silicone-free version
 - version free of grease and oil, up to 0 – 600 bar adjustment ≤250 bar with dry air
≥400 bar with distilled water
 - oxygen version: up to max. 0 – 600 bar, restrictor screw in the inlet port of the connection, orifice Ø 0.3 mm (0.01")
 - output signal 0...5 V or 1...10 V, 4...20 mA (3-wire)
 - other sensor sealing
- **Higher temperature:**
 - with temperature decoupler TE, length approx. 30 mm (1.18")
 - for medium temperatures >80 °C <140 °C (>176 °F <284 °F)
 - for medium temperatures >140 °C (>284 °F) upon request

Ordering Information

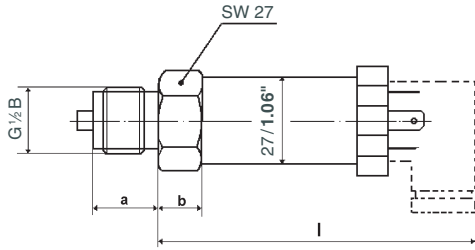
Basic model	PTM
Order code for absolute pressure	(a)
Pressure range	e.g. 0 – 6 bar
Output signal	e.g. 4...20 mA
Possible specifics	cf. above

Example: PTM (a), 0 – 6 bar, 4...20 mA

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Case Configuration, Dimensional Data and Weights, Wiring Diagram

PTM



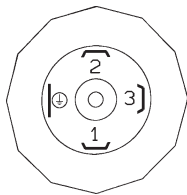
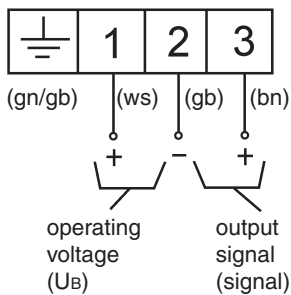
Dimensional Data (mm/inch) and Weights (kg/lb)

model	version	l	a	b	approx. weight
PTM	up to 0 – 100 bar	88 (93) 3.46 (3.66)	20 0.79	10 0.39	0.21 0.46
	>0 – 160 bar	97 (102) 3.82 (4.02)	20 0.79	19 0.75	0.23 0.51

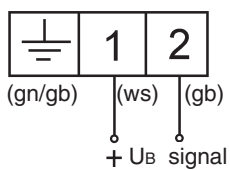
The values in brackets apply to output signals 0...20 mA.

Wiring Diagram

3-wire



2-wire



Please note:

Wiring diagram for version with circular plug connector M12x1
see supplied operating instructions!