Pressure Transmitters

With piezoresistive measuring cell
Pressure ranges 0 – 100 mbar to 0 – 1000 bar

PTM

Application

Pressure transmitters model PTM are suitable for overpressure- and absolute pressure measurement of liquid and gaseous media of 0 – 100 mbar up to 0 – 1000 bar, that do not corrode 1.4571 and 1.4435 (316 stainless steel), as well as Viton.
Two basic models 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), 1.4571 (316 stainless steel)

Measuring Cell / Sensor
Piezoresistive measuring cell: 1.4435 (316 stainless steel)
Diaphragm (placed inside): 1.4435 (316 stainless steel)

Sensor Sealing
FPM (Viton®)

Case
1.4301 (304 stainless steel), case protection type IP65

Pressure Ranges / Overload

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

The corresponding vacuum-/compound ranges are also available.

Output Signal		Power supply Nominal Range	Load impedance
4...20 mA	2-wire 24 V DC	10...40 V DC	(UB -10 V)/0.02 A
0...20 mA	3-wire 24 V DC	8...28 V DC	(UB - 8 V)/0.02 A
0...10 V	3-wire 24 V DC	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 (< 0.03 % / K)
Measuring span: < 0.2 % / 10 K (< 0.02 % / 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 175301-803)
For assuring the electromagnetic compatibility (EMC) please use a shielded cable (e.g. LP/LiMYCY). The shield has to be connected to the case resp. to the ground terminal of the terminal box.

Position of Installation
Any

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

Options

- Process connection:
  - G ¼ B, ¼" NPT, ½" NPT (EN 837-3), M 12x1.5, M 20x1.5
  - High pressure-connection (female- or male thread)
  - VCR® union nut, VCR® male thread rigid, others upn request
- Electrical connection:
  - Cable bushing (IP67) with 2 m cable
  - Circular plug connector M 12x1 (IP67)
  - Angular cable box without cable, optional with 2 m die casted cable
  - Straight cable box without cable, others upon request
- Special version:
  - Silicone-free version
  - Version free of grease an 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 im inlet port of the connection, orifice Ø 0.3 mm
  - Output signal 0 – 5 V or 1 – 10 V, 4 – 20 mA (3-wire)
  - Other sensor sealing

Ordering Information

Please specify in your order:

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:	compare above

Example: PTM (a), 0 – 1 bar, 4...20 mA

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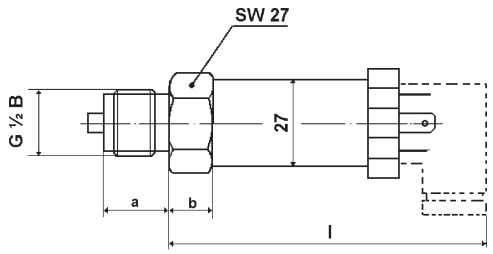
Case Configuration, Dimensional Data and Weights, Wiring Diagram

PTM

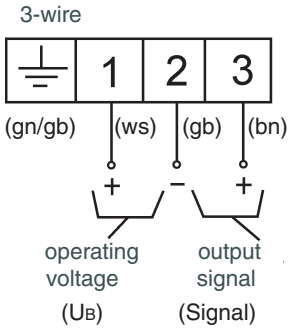


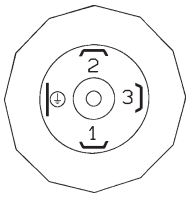
Dimensional Data (mm) and Weights (kg)

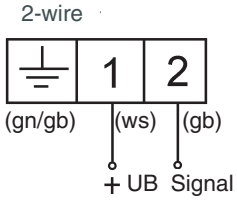
Model	Variant	l (mm)	a (mm)	b (mm)	approx. weight
PTM	up to 0 – 100 bar	88 (93)	20	10	0.21 kg
	> 0 – 160 bar	97 (102)	20	19	0.23 kg

The values in brackets are for the output signals 0...20 mA

Wiring Diagram







Please note:
Wiring diagram for version with circular plug connector M 12x1 see supplied operating instructions!