

# Pressure Transmitter

**PTMv**

With piezoresistive measuring cell, welded  
Pressure ranges 0 – 400 mbar to 0 – 100 bar

## Applications

Pressure transmitter models PTMv are suitable for overpressure and absolute pressure measurement of liquid and gaseous media from 0 – 400 mbar up to 0 – 100 bar, which do not corrode stainless steel 316L (1.4404 and 1.4435). The welded version (v) has been developed to ensure maximum leak tightness, even in long-term use with aggressive gases and has proven itself e.g. in the ultra-pure gas industry. Two basic versions are available:

**Overpressure** **0 – 400 mbar to 0 – 100 bar**  
(up to 0 – 16 bar  
with ventilation to atmosphere)

**Absolute pressure (a)** **0 – 400 mbar to 0 – 100 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 Versions

### Construction Type

Installation length standard

### Process Connection

G 1/2 B (1/2" 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

– (measuring cell welded)

### 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 – 400 mbar	2.5	0 – 4	7	0 – 40	100
0 – 600 mbar	2.5	0 – 6	15	0 – 60	150
0 – 1	3	0 – 10	30	0 – 100	300
0 – 1.6	7	0 – 16	30		
0 – 2.5	7	0 – 25	100		

The corresponding vacuum / compound ranges are also available.

### Output Signal

	Supply voltage	Load impedance
4...20 mA 2-wire	10...40 V DC	(U <sub>B</sub> – 10 V) / 0.02 A
0...20 mA 3-wire	8...28 V DC	(U <sub>B</sub> – 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)

### Temperature Ranges

Storage temperature –40 to +125 °C (–40 to +257 °F)  
Rated temperature –10 to +80 °C (+14 to +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 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.

### Position of Installation / Position of Connection

Any

### EMC

EN 61000-6-3, 61000-6-2

## Options

- **Process connection:**
  - G 1/4 B, 1/4" NPT, 1/2" 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
  - adjustment with dry air
  - oxygen version: 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)
  - measuring cell platinum diaphragm, Hastelloy diaphragm (measuring cell case Hastelloy C276)
- **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** PTMv  
**Order code absolute pressure** (a)  
**Pressure range** e.g. 0 – 6 bar  
**Output signal** e.g. 4...20 mA  
**Possible specifics** cf. above

### Example

PTMv (a), 0 – 1 bar, 4...20 mA

[www.armano-messtechnik.com](http://www.armano-messtechnik.com)

**ARMANO**

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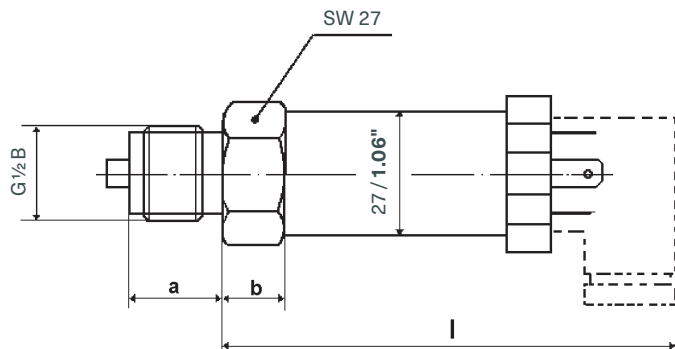
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# Case Configuration, Dimensional Data and Weight, Wiring Diagram

PTMv



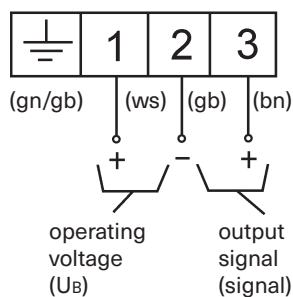
## Dimensional Data (mm / inch) and Weight (kg / lb)

l	a	b	approx. weight
88 (93)	20	10	0.21
<b>3.46 (3.66)</b>	<b>0.79</b>	<b>0.39</b>	<b>0.46</b>

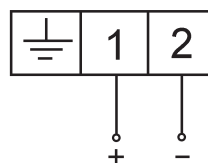
The value in brackets applies to output signal 0...20 mA.

## Wiring Diagram

3-wire



2-wire



### Please note:

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