

# Adjustable Process Pressure Transmitter

For the process industry with HART® communication

Pressure ranges -7 / +7 mbar to 0 – 1000 bar

Absolute pressure up to 70 bar

HART  
COMMUNICATION PROTOCOL

PTPi

## Application

The precision pressure transmitter PTPi is suitable for precisely measuring and monitoring vacuum, absolute pressures and positive pressures of liquid as well as gaseous media for pressure ranges from -7 / +7 mbar to 0 – 1000 bar and absolute pressures up to 70 bar.

A piezoresistive resistance silicon sensor, which is separated from the medium by the membrane and a special manometric liquid, serves as measuring element. The case is made of die-cast aluminum or stainless steel 316<sup>1)</sup> with degree of protection IP66. It is equipped with an integrated LC display (adjustable horizontally/vertically) and can be rotated by 0 – 340° relative to the sensor. The SIL2 version is optionally available.

The mounting of chemical seals is possible, e.g. for the petrochemical industry (see model overview 7000 and the data sheets of heading 7, e.g. data sheet 7500).

## Construction

- Measurement accuracy  $\leq \pm 0.075\%$
- HART® communication
- Analogue output signal: 2-wire 4...20 mA, linear
- Turn-down 1:100 (-1 / +7 bar to 0 – 1000 bar), additional pressure ranges see table on page 2
- PED conformity 2014/68/EU

## Standard Version

### Process Connection

G ½ B (according to DIN EN 837) with orifice Ø 4 mm (0.16")  
Wetted parts stainless steel 316L

### Measuring Cell/Sensor

Piezoresistive measuring cell  
Diaphragm placed inside, stainless steel 316L, welded

### Case

Die-cast aluminum with display

### Pressure Ranges

Measuring spans from -7 / +7 mbar up to 1000 bar  
See table page 2

### Operation

Pressure range, zero point adjustment, characteristic curve and damping rate are adjustable on the device

### Output Signal

Analogue: 2-wire 4...20 mA  
Digital: HART® communication

### Electrical Connection

M20x1.5 screwed cable gland  
Connecting terminals in the case max. 2.5 mm<sup>2</sup>

### Load Impedance

$RL < (U_B - 15 \text{ V}) / 0.0225 \text{ A}$

### Supply Voltage

15...55 V DC ( $\pm 25\%$ )



### Measurement Accuracy

$\leq \pm 0.075\%$  in the adjusted range (FSO)  
(within the compensated range)

### Temperature Caused Error

$\leq \pm 0.05\%$  (FSO) / 10 °C but not larger than  $\pm 0.25\%$  (FSO)  
compensated range -25 °C to +80 °C (-13 °F to +176 °F)

### Transport, Storage and Operating Temperature

-40 °C to +85 °C (-40 °F to +185 °F)

### Reference Temperature

+20 °C (+68 °F)

### Long-term Stability

$\leq \pm 0.025\%$  FSO/a (at reference conditions)

### Position of Installation / Position of Connection

Any

### Degree of Protection (DIN EN 60 529/ IEC 529)

IP66

### CE Conformity

DIN EN 61 326-1: 2013  
DIN EN 61 000-6-2: 2005

<sup>1)</sup> optional

# Measuring Ranges, Options, Special Versions, Accessories and Ordering Information

Measuring Ranges					
Measuring range	Pressure type	Nominal measuring ranges	Min. set range	Turn-down	Max. overpressure
1	positive	0 – 1000 bar	0 – 10 bar	1:100	1200 bar
2	positive	0 – 300 bar	0 – 3 bar	1:100	450 bar
3	positive	0 – 160 bar	0 – 1.6 bar	1:100	450 bar
4	positive	0 – 70 bar	0 – 0.7 bar	1:100	140 bar
5	positive	0 – 25 bar	0 – 0.25 bar	1:100	50 bar
6	positive	0 – 7 bar	0 – 0.07 bar	1:100	14 bar
7	positive	-1 / +7 bar	-0.01 / +0.07 bar	1:114	14 bar
8	positive	-1 / +1.5 bar	-0.01 / +0.12 bar	1:20	4 bar
9	positive	0 – 2 bar	0 – 0.1 bar	1:20	4 bar
10	positive	0 – 1 bar	0 – 0.05 bar	1:20	2 bar
11	positive	-500 / +500 mbar	-25 / +25 mbar	1:20	2 bar
12	positive	0 – 250 mbar	0 – 25 mbar	1:10	1 bar
13	positive	-100 / +100 mbar	-10 / +10 mbar	1:10	1 bar
14	positive	-15 / +70 mbar	-2.5 / +2.5 mbar	1:17	0.5 bar
15	positive	-25 / +25 mbar <sup>1)</sup>	-1 / +1 mbar	1:25	1 bar
16	positive	-7 / +7 mbar <sup>1)</sup>	-0.5 / +0.5 mbar	1:14	1 bar
17	absolute	0 – 1.3 bar	0 – 0.1 bar	1:13	2 bar
18	absolute	0 – 7 bar	0 – 0.1 bar	1:70	14 bar
19	absolute	0 – 25 bar	0 – 0.25 bar	1:100	50 bar
20	absolute	0 – 300 bar	0 – 3 bar	1:100	450 bar

## Options

- Process connections ½" NPT, M20x1.5, G ½B flush welded
- Gold-plated membrane (Au)
- Nameplate stainless steel, fixed on the case
- Tag stainless steel with TAG number
- Case stainless steel 316, IP66, with display
- Degree of protection IP67
- Enhanced temperature compensation -40 °C to +80 °C (-40 °F to +176 °F)
- Version for oxygen applications<sup>1)</sup>
- Turn-down factory-set according to customer requirements
- Version with higher accuracy ≤0.05 %
- SIL2 version

## Ordering Information

Please specify in your order:

<b>Basic model</b>	PTPi
<b>Pressure range</b>	e.g. -1 / +7 bar
<b>Process connection</b>	G ½B
<b>Output signal</b>	2-wire 4...20 mA
<b>Options</b>	case stainless steel 316 with display degree of protection IP67

**Example:** PTPi, -1 / +7 bar, G ½B, 2-wire 4...20 mA, case stainless steel 316 with display

## Special Versions Upon Request

- Output 0...20 mA + HART®
- Output 0...5 mA + HART®
- Other process connections
- Mounted to diaphragm seal, capillary lines and cooling elements from heading 7000

## Accessories

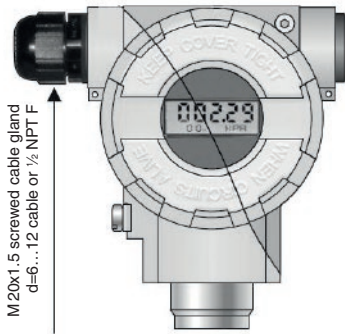
- Mounting bracket AL for 2" tube, galvanised steel
- Mounting bracket AL for 2" tube, stainless steel
- Barotec pressure calibrator (model overview 10000) for parameterisation of the devices with display

<sup>1)</sup> process connection M20x1.5 and G ½B only

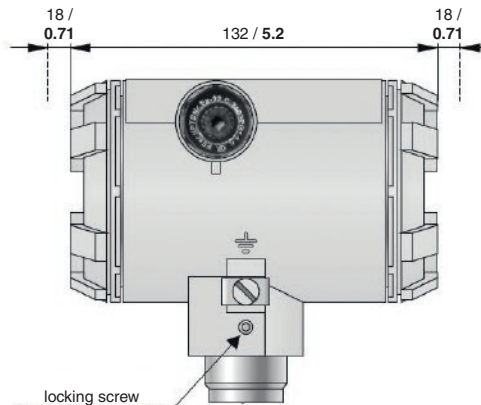
**Case Configuration**

Die-cast aluminum / stainless steel 316L<sup>1)</sup>

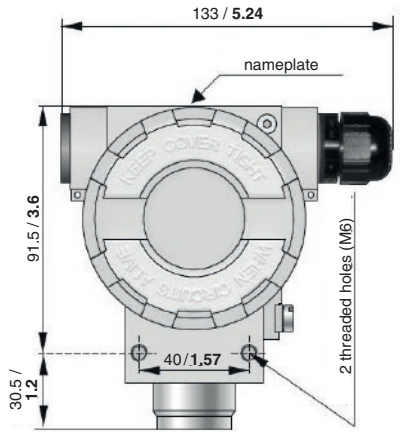
front view



lateral view left

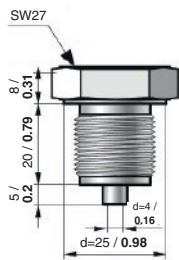


back view

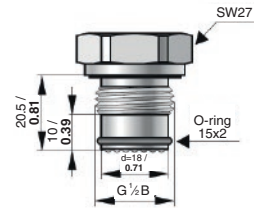


**Process Connections**

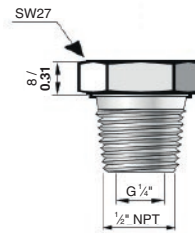
G 1/2 B (standard)  
M20x1.5 DIN EN 837 (optional)



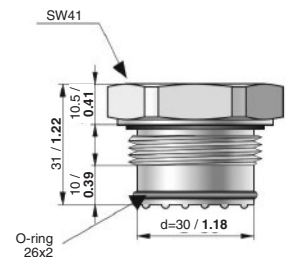
G 1/2 B flush welded (optional)



1/2" NPT (optional)



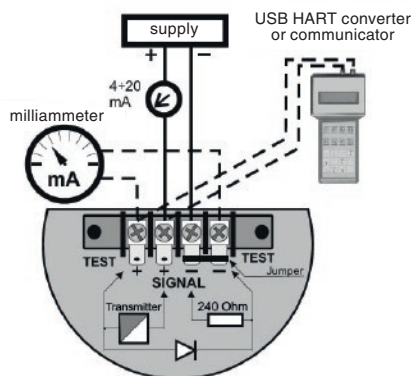
G 1 B (optional)



**Weight**

Approx. 1.3 kg (2.87 lb)

**Wiring Diagram**



<sup>1)</sup> optional