

Intelligent Pressure Transmitter

For food / bio / pharmaceutical industries

Field housing stainless steel 304 (1.4301)

Pressure ranges 0 – 400 mbar to 0 – 40 bar, accuracy $\leq \pm 0.1$ % FSO

HART
COMMUNICATION PROTOCOL

SIL 2

PTFi

Application

The pressure transmitter PTFi is suitable for precisely measuring and monitoring vacuum, absolute pressures and positive pressures of liquid as well as gaseous media for pressure ranges from 0 – 400 mbar to 0 – 40 bar.

Available as process connections are hygienic connections such as clamp (standard), dairy pipe or thread connections (optional) with a flush-welded stainless steel membrane, which can be combined with a cooling extension for medium temperatures up to +300 °C, if necessary.

The robust stainless steel field housing has a high degree of protection IP67 as well as all properties for residue-free and antibacterial cleaning.

The pressure transmitter supports communication via HART® protocol. A turn-down span to 1:10 is available.

A version with safety functions according to SIL2 is optionally available.

Construction

- Accuracy: $\leq \pm 0.1$ % FS
- Sensor stainless steel 316L
- Flush-welded membrane made of stainless steel 316L (1.4435)
- Output signal: 2-wire 4...20 mA
- Turn-down 1:10
- Integrated indicating and operating module
- Hygienic design
- Adjustable damping and offset
- Degree of protection IP67
- HART® communication (optional)
- SIL2 (optional)

Standard Versions

Process Connection

Clamp DN 25 (DIN 32 676), stainless steel 316L (1.4435)
Membrane stainless steel 316L (1.4435) flush-welded

Measuring Cell/Sensor

Stainless steel 316L (1.4435)
Internally welded

Sensor Sealing

None

Case

Field housing made of stainless steel 304 (1.4301),
degree of protection IP67
Lateral display

Display

LC display

Main indication

(measured value): 5 digit, 7 segment indication
digit height 8 mm (0.31")

Additional indication
(unit): 8 digit, 14 segment indication
digit height 5 mm (0.2")
52 segment bargraph

Supply Voltage

12...30 V DC

Output Signal

4...20 mA, 2-wire

Current consumption max. 25 mA



Load Impedance

$R_{\max} = [(U_B - U_{B \min}) / 0.02 A] \Omega$

Sample Rate

100 ms, measuring rate 10/s

Adjustability

Electronic damping:

0 – 100 s

Offset:

0 – 90 % FSO

Measurement Accuracy

≤ 0.1 % FSO

(including non-linearity, hysteresis and non-repeatability)

Signal Behaviour

Accuracy according to IEC 60 770: $\leq \pm 0.1$ % FSO

Turn-down: $\leq 1:5$: no changes

Turn-down: $> 1:5$: e.g. turn-down 9:

$\leq 0.1 + 0.015 \times (9 - 5)$ % FSO = 0.16 % FSO

Filling Liquid

Food grade oil

Temperature

Medium temperature: -10 °C to $+125$ °C ($+14$ °F to $+257$ °F)

Operating temperature: -20 °C to $+70$ °C (-4 °F to $+158$ °F)

Storage temperature: -30 °C to $+80$ °C (-22 °F to $+176$ °F)

Mechanical Shock

100 g/11 ms

Mechanical Vibration

Max. 5 g at 25 – 2000 Hz

Long-term Stability

(0.1 x turn-down) % FSO / a (at reference conditions)

Position of Installation/Connection

Any

Electrical Connection

Plug connection M 12x1, 4-pin

Reverse Polarity Protection

Available

www.armano-messtechnik.com

ARMANO

ARMANO Messtechnik GmbH

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08/19

Measuring Ranges, Options, Ordering Information

Measuring Ranges/Overload Capability in bar¹⁾

Vacuum/ positive pressure	Positive pressure/ absolute pressure	Overpressure	Burst pressure
-0.4 / +0.4	-	2	3
-1 / +1	-	5	7.5
-1 / +2	-	10	15
-1 / +4	-	20	25
-1 / +10	-	40	50
-	0 – 0.4 ²⁾	2	3
-	0 – 1	5	7.5
-	0 – 2	10	15
-	0 – 4	20	25
-	0 – 10	40	50
-	0 – 20	80	120
-	0 – 40	105	210

Options

- Output signal:
 - 2-wire 4...20 mA + HART
 - 2-wire 4...20 mA + SIL2
 - 2-wire 4...20 mA + HART + SIL2
- Process connections:
 - clamp DN 32, DN 50 (DIN 32 676)
 - dairy pipe DN 25, DN 40, DN 50 (DIN 11 851)
 - G1" cone
- Temperature decoupler up to +300 °C (+572 °F)
- Display 45°

Ordering Information

Please specify in your order:

Basic model	PTFi
Pressure range	e.g. 0 – 400 mbar, positive pressure
Process connection	e.g. clamp DN 25 (DIN 32 676)
Output signal	e.g. 4...20 mA HART

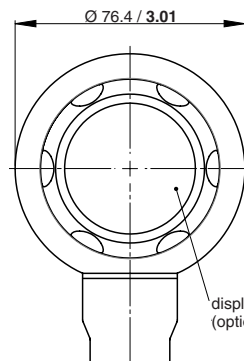
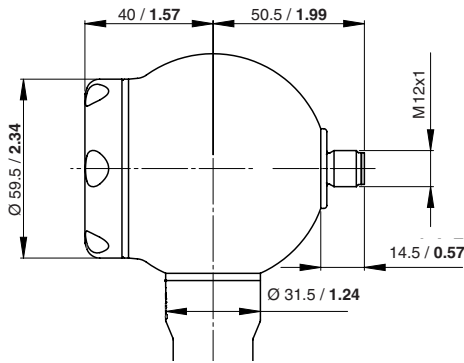
Example: PTFi 0 – 400 mbar,
clamp DN 25 (DIN 32 676)
4...20 mA HART

¹⁾ upon request, we set the required measuring range via software within the scope of the turn-down option
²⁾ absolute pressure available from 1 bar onwards

Case Configuration

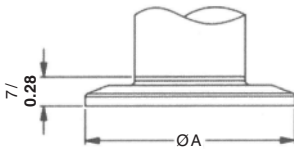
Field housing stainless steel, lateral display

lateral view



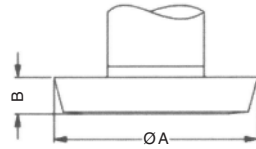
Process Connections

Standard: clamp (DIN 32 676)



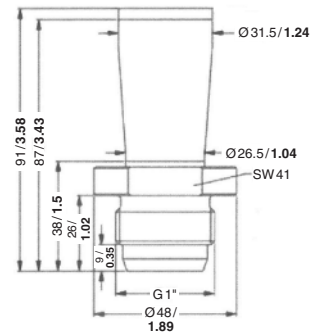
	Dimensions (mm/inch)		
dimension	DN 25	DN 32	DN 50
A	50.5 1.99	50.5 1.99	64 2.52
PN (bar)	≥ 0.25 ≤ 16	≤ 16	≤ 16

Dairy pipe¹⁾ (DIN 11 851) (optional)

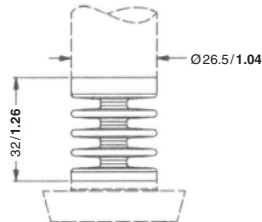


	Dimensions (mm/inch)		
dimension	DN 25	DN 40	DN 50
A	44 1.73	56 2.2	68.5 2.7
B	10 0.39	10 0.39	11 0.43
PN (bar)	≥ 0.25 ≤ 40	≥ 0.25 ≤ 40	≥ 0.25 ≤ 25

G 1" cone (optional)



Temperature decoupler

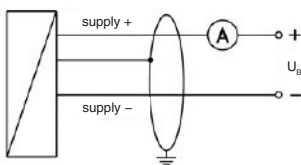


Weight

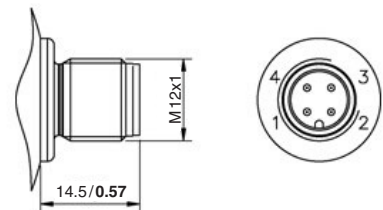
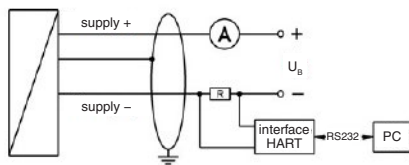
Min. 400 g (0.88 lb) (depending on the mechanical connection)

Wiring Diagram

4...20 mA, 2-wire



4...20 mA, 2-wire HART



M12x1 4-pin

Electrical connections	Connecting terminals
1	+U _b
3	0V / signal

¹⁾ groove union nut and mounting flange are included in the scope of delivery (already preassembled)