



## PU-03

### High-Precision Pressure Measuring Transmitter in Stainless Steel



- Accuracy class 0.25
- Gauge or absolute pressure measuring
- Optional front flush stainless steel diaphragm
- Robust design
- Power or voltage output

#### Description:

The PU-03 series of pressure measuring transmitters has a piezo-resistive sensor element in the pressure ranges up to 16 bar absolute and up to 25 bar relative which registers very accurately any change in the pressure to be measured following any changes in the electrical resistance of a piezo-crystal as a result of mechanical load. As against this, thin-film technology is used for higher operating ranges where with high response speed resistance changes in an extremely thin resistance strain gauge are translated into an output signal which is proportional to the close-lying pressure. A combination of both these technologies covers all DIN operating ranges of -1/0 bar to 0/2500 bar while the accuracy remains the same.

#### Range of application:

The robust design of PU-03 pressure transmitter enables the user to perform accurate measurements of pressure in gases and fluids during processing even under harsh operating conditions. A stainless steel diaphragm protects the measuring system against damages, thus covering a large number of media, provided they are not highly viscous or crystallized. If necessary, the pressure measuring transmitters are equipped with a front flush diaphragm which prevents such material from forming deposits inside the housing. The electrical signal at the output can be utilized to remote data transfer or for a direct display. In this regard, we recommend the Profimess' Direct Digital Display AZ-01N, which can be easily placed between the transmitter and the plug to display the measured values without requiring additional power supply.

## Versions:

### PU-03 Pressure Measuring Transmitter Class 0.25

**Output signal:** Possible output signals are: power signal of 4 to 20 mA in 2-wire method or voltage signal of 0 to 10 VDC in 3-wire method (other outputs on request).

**Calibration:** On request, the devices can be calibrated in the operating range of 0 to 0.25 bar up to a operating range of 0 to 16 bar at absolute pressure.

**Electrical connection:** Series plug DIN EN 175301-803 form A with junction box. Optionally, permanently connected cable, standard length 1 m.

**Process connection:** On request, the devices can be supplied for operating ranges A up to V with a front flush stainless steel diaphragm. This is recommendable for viscous or sticky media.

## Ordering codes:

Ordering number: PU-03. 2. 1. 2. 2. L

Pressure Measuring Transmitter Class 0.25

#### Output signal:

1 = 4 to 20 mA, 2-wire  
2 = 0 to 10 VDC, 3-wire

#### Calibration

1 = gauge pressure  
2 = absolute pressure (operating range D to M only)

#### Electrical connection:

1 = plug connection  
2 = with permanent fixed connecting cable

#### Process connection:

1 = G 1/2 B male  
2 = front flush diaphragm  
(for operating ranges A to V)

#### Operating range:

A = -1 to 0 bar  
B = -1 to 1.5 bar  
C = -1 to 5 bar  
D = 0 to 0.25 bar  
E = 0 to 0.4 bar <sup>(1)</sup>  
F = 0 to 0.6 bar <sup>(2)</sup>  
G = 0 to 1 bar  
H = 0 to 1.6 bar  
I = 0 to 2.5 bar  
J = 0 to 4 bar  
K = 0 to 6 bar  
L = 0 to 10 bar  
M = 0 to 16 bar  
N = 0 to 25 bar  
O = 0 to 40 bar  
P = 0 to 60 bar  
Q = 0 to 100 bar  
R = 0 to 160 bar  
S = 0 to 250 bar  
U = 0 to 400 bar  
V = 0 to 600 bar  
W = 0 to 1000 bar (not for front flush diaphragm)

<sup>(1)</sup> (with internal diaphragm for absolute pressure - on request only)

<sup>(2)</sup> (for absolute pressure - on request only)

## Electrical specifications:

**Supply voltage:** 10 to 30 V DC at power output  
14 to 30 V DC at voltage output

#### Power consumption

**max.:** 20 mA

#### Load:

voltage output  
load  $\geq 10$  kOhm  
power output  
load  $\leq (UB-10 \text{ V}) / 0.02 \text{ A}$

#### Interference signal:

as per EN 61326

#### Interference-proof:

as per EN 61326

#### Protection class:

IP65 EN 60 529/IEC 529,  
IP67 for cable connection

#### Type of electrical

#### protection:

protected against polarity reversal,  
excess voltage and short-circuiting

## Technical specifications:

#### Process connection:

G 1/2 B male, for front flush diaphragm, optionally available are G 1/4 B, 1/4 NPT and 1/2 NPT (for front flush diaphragm:  $\leq 1.6$  bar G 1 B  
 $\geq 2.5$  bar G 1/2 B)

#### Material contacted components:

stainless steel 1.4571 and 1.4542 (for front flush diaphragm only 1.4571 and o-ring seal (NBR))

#### max. Pressure:

3.5-times the operating range end value for operating range up to 16 bar,  
2-times the operating range end value for operating range up to 600 bar,  
1.5-times the operating range end value for operating range  $> 600$  bar,

#### max. Media temp.:

-30°C to +100°C (optionally -40°C to +125°C)

#### max. Ambient temp.:

-20°C to +80°C

#### max. Storage temp.:

-40°C to +100°C

#### Compensated range:

0°C to +80°C

#### Housing:

stainless steel 1.4301

#### Weight:

approx. 0.2 kg

#### Accuracy:

Cl. 0.25

#### Repeatability:

$\leq \pm 0.05\%$  of full scale value

#### Set time:

$\leq 1$  ms (within 10% to 90% of full scale value)

#### Adjustability:

zero point and measuring span up to  $\pm 5\%$  ( $\pm 10\%$  front flush diaphragm)

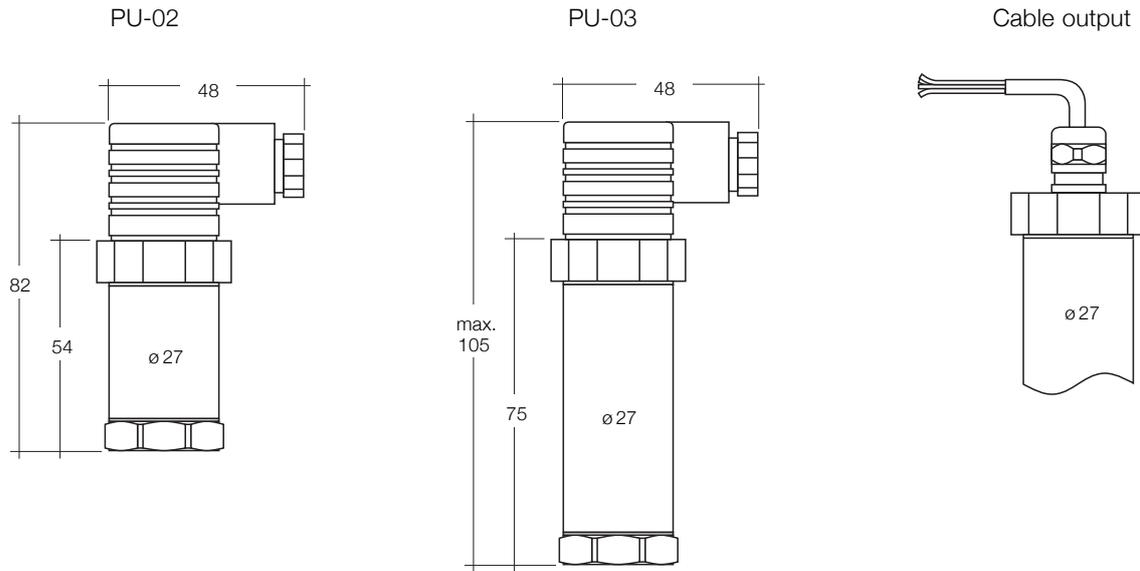
#### Temperature factor:

$\leq \pm 0.2\%/10\text{K}$  on zero point and span  
( $\leq \pm 0.4\%/10\text{K}$  for operating range 0 to +0.1 bar and 0 to +0,16 bar)

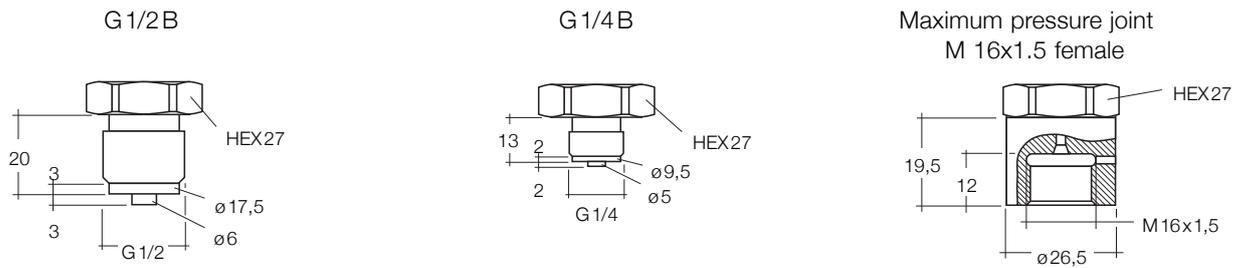
# PU-02/PU-03 - Pressure measuring transmitter with internal diaphragm

## Dimensions:

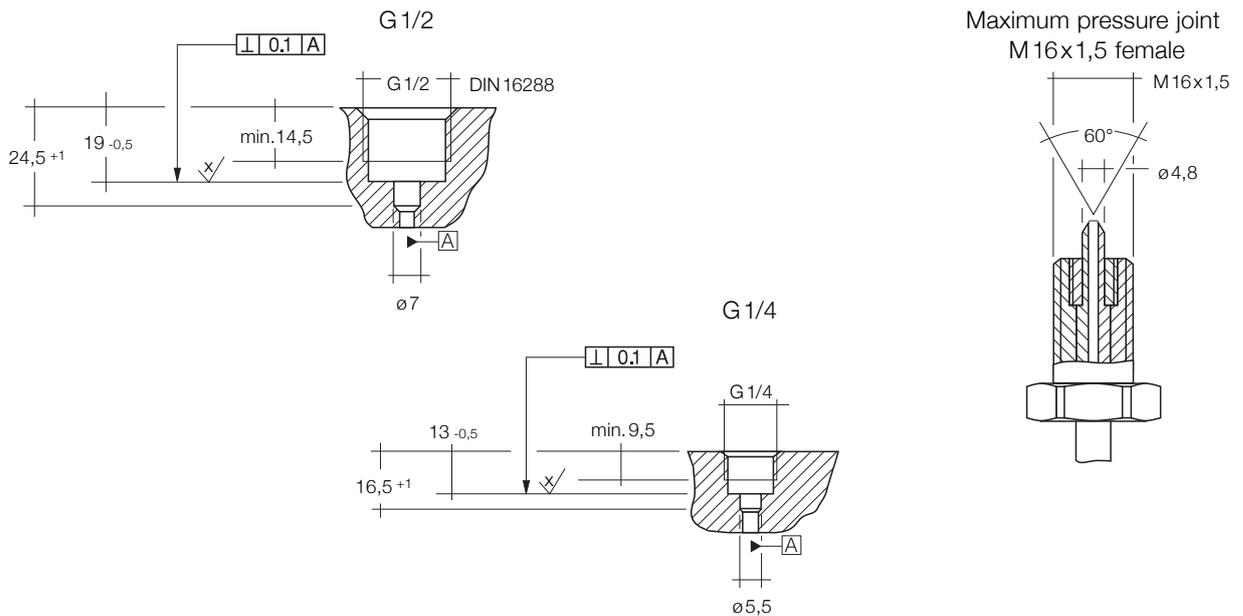
**Housing** – Version with junction box as per DIN EN 175301-803 form A



## Pressure connections



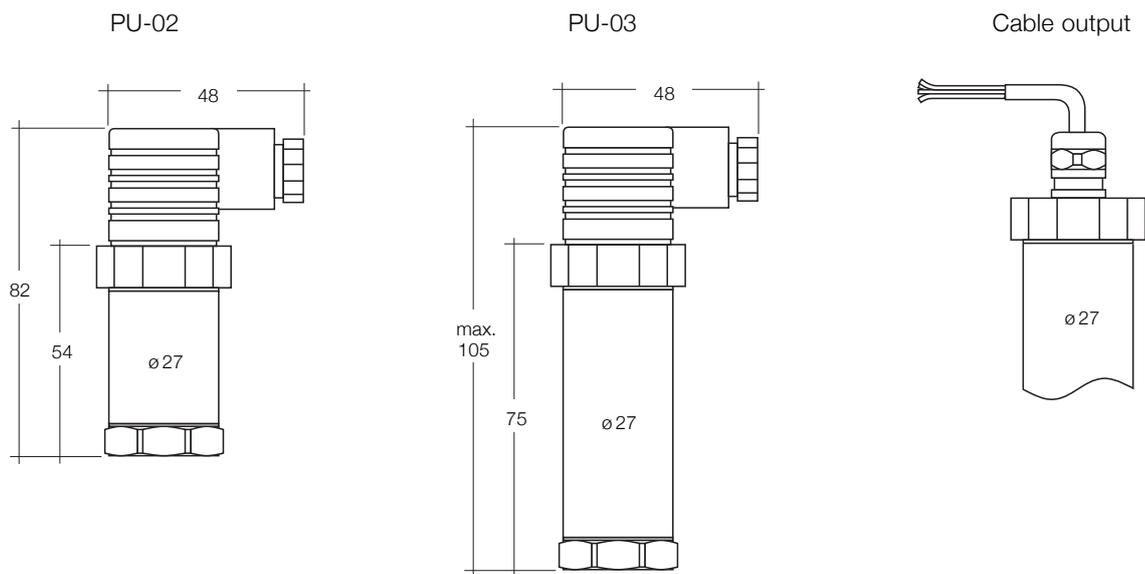
## Screw hole or joint as per DIN 16288



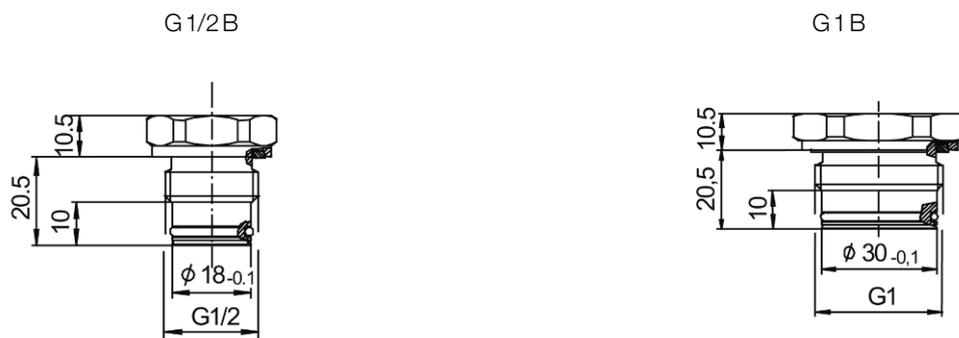
# PU-02/PU-03 - Pressure measuring transmitter with front flush diaphragm

## Dimensions:

**Housing** – Version with junction box as per DIN EN 175301-803 form A



## Pressure connections



## Screw hole or joint as per DIN 16288

