

# PUM03

## High-Precision Pressure Transmitter in Stainless Steel

- Accuracy class 0.25
- Measures relative or absolute pressure
- Optional flush-mounted stainless steel diaphragm
- Sturdy, heavy-duty design
- Current or voltage output



### Description:

Model series PUM03 pressure sensors have a piezo-resistive sensor element for pressure ranges up to 16 bar. This element very accurately registers changes in pressure through the change in the electrical resistance of the piezo crystal caused by variation in the mechanical force exerted upon it. For higher measuring ranges, thin-film technology is used due to its fast reaction times. This method translates the changes in resistance in an extremely thin strip of expanding film into an output signal that is proportional to the mechanical force exerted upon the film. The combination of these two technologies allows this device to meet all DIN measuring ranges from -1/0 bar to 0/2500 bar with consistent accuracy.

### Fields of Application:

The sturdy design of PUM03 pressure transmitters allows accurate measurement of gases and liquids in a process, even under rough service conditions. A stainless-steel diaphragm protects the transmitter measuring system from damage, allowing a great variety of media to be measured as long as they are not highly viscous or crystallizing. If necessary, the pressure transmitter can be fitted with a flush-mounted diaphragm which prevents these kinds of materials from entering the housing and hardening there. The electrical signal at the output can be remotely transmitted or used for direct display. For direct display of readings, we recommend the **PKP AZ01 digital display**, which can be easily installed between the transmitter and the plug connector. This display does not require a separate power supply.

## Designs:

### PUM02 Pressure Transmitters, Class 0.25

**Output signal:** possible output signals are: Current signal 4 to 20 mA in two-wire circuitry or voltage signal 0 to 10 V in three-wire circuitry (other outputs available upon request)

**Calibration:** If desired, these devices can be calibrated up to a measuring range of 0 to 16 bar at absolute pressure.

**Electrical connection:** standard DIN EN 175301-803 plug connector, model A with cable box. Permanently attached connection cable optional, standard length of 1m

**Process connection:** If desired, these devices can be supplied with a flush-mounted stainless-steel diaphragm for a measuring range up to 0 to 600 bar. This will be necessary for use with viscous or sticky fluids.

## Electrical specifications:

|                                     |  |
|-------------------------------------|--|
| <b>Supply voltage:</b>              | 10 to 30 VDC with current output<br>14 to 30 VDC with voltage output           |
| <b>Power consumption Max.:</b>      | 20 mA  |
| <b>Output:</b>                      | voltage output load $\geq 5$ kOhm<br>current output load $\leq (U-10V)/0.02$ A |
| <b>Interference emission:</b>       | as per EN 61326  |
| <b>Noise immunity:</b>              | as per EN 61326  |
| <b>Protection type:</b>             | IP65 EN 60 529/IEC 529   |
| <b>Electrical protection types:</b> | incorrect polarity, overvoltage,<br>and short-circuit protection               |

## Technical details:

|                                     |   |
|-------------------------------------|---|
| <b>Process connection:</b>          | G1/2 B male thread, with flush-mounted G1 B diaphragm for measuring range of 0 to 1.6 bar<br>M16x1.5 female thread for measuring range > 1600 bar   |
| <b>Optional connections:</b>        | G1/4, 1/4" NPT and 1/2" NPT   |
| <b>Parts in contact with media:</b> | stainless steel 1.4571 and 1.4542 (with flush-mounted diaphragm, 1.4571 only)   |
| <b>Max. pressure:</b>               | 3.5 times the upper range value for measuring range up to 16 bar<br>2 times the upper range value for measuring range to 600 bar<br>1.5 times the upper range value for measuring range > 600 bar<br>1.2 times the upper range value for measuring range = 1600 bar<br>1.2 times the upper range value for measuring range = 2500 bar |

## Ordering Code:

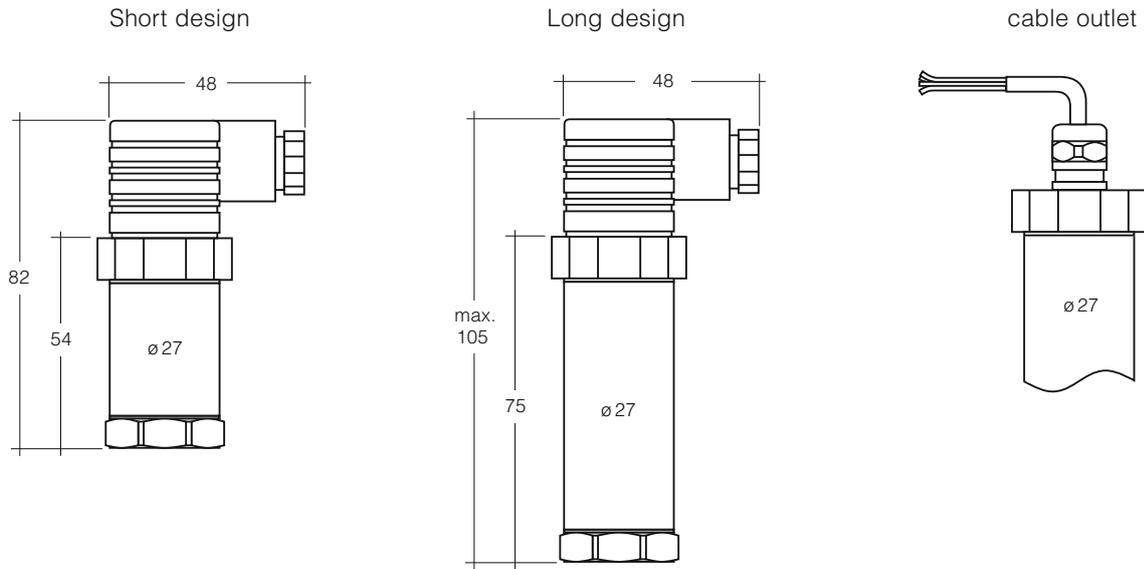
|  |               |           |           |           |           |                    |            |
|--|---------------|-----------|-----------|-----------|-----------|--------------------|------------|
| <b>order number:</b>   | <b>PUM03.</b> | <b>2.</b> | <b>1.</b> | <b>2.</b> | <b>1.</b> | <b>1.</b>          | <b>R76</b> |
| <b>Pressure transmitter, class 0.25</b>                                      |               |           |           |           |           |                    |            |
| <b>Output signal:</b>  |               |           |           |           |           |                    |            |
| 1 = 4 to 20 mA, 2-wire   |               |           |           |           |           |                    |            |
| 2 = 0 to 10 V, 3-wire  |               |           |           |           |           |                    |            |
| <b>Calibration:</b>  |               |           |           |           |           |                    |            |
| 1 = Relative pressure  |               |           |           |           |           |                    |            |
| 2 = Absolute pressure  |               |           |           |           |           |                    |            |
| <b>Electrical connection:</b>  |               |           |           |           |           |                    |            |
| 1 = Plug connector   |               |           |           |           |           |                    |            |
| 2 = Permanently attached connection cable                                    |               |           |           |           |           |                    |            |
| <b>Process connection:</b>   |               |           |           |           |           |                    |            |
| 1 = G1/2 B   |               |           |           |           |           |                    |            |
| 2 = G 1 B (with flush-mounted diaphragm for measuring range of 0 to 1.6 bar) |               |           |           |           |           |                    |            |
| 3 = M16 X 1.5 female thread (for measuring range > 1600 bar)                 |               |           |           |           |           |                    |            |
| 4 = Special thread (G1/4, 1/4" NPT, 1/2" NPT)                                |               |           |           |           |           |                    |            |
| <b>Design:</b>   |               |           |           |           |           |                    |            |
| 1 = Internal diaphragm   |               |           |           |           |           |                    |            |
| 2 = Flush-mounted diaphragm  |               |           |           |           |           |                    |            |
| <b>Measuring range:</b>  |               |           |           |           |           |                    |            |
| R = relative   |               |           |           |           |           | A = absolute       |            |
| R13 = -0.25 - 0 bar  |               |           |           |           |           |                    |            |
| R14 = -0.4 - 0 bar   |               |           |           |           |           |                    |            |
| R15 = -0.6 - 0 bar   |               |           |           |           |           |                    |            |
| R16 = -1 - 0 bar   |               |           |           |           |           |                    |            |
| R43 = -1 - 1.5 bar   |               |           |           |           |           |                    |            |
| R45 = -1 - 5 bar   |               |           |           |           |           |                    |            |
| R65 = 0 - 0.25 bar   |               |           |           |           |           | A65 = 0 - 0.25 bar |            |
| R66 = 0 - 0.4 bar  |               |           |           |           |           | A66 = 0 - 0.4 bar  |            |
| R67 = 0 - 0.6 bar  |               |           |           |           |           | A67 = 0 - 0.6 bar  |            |
| R69 = 0 - 1 bar  |               |           |           |           |           | A69 = 0 - 1 bar    |            |
| R70 = 0 - 1.6 bar  |               |           |           |           |           | A70 = 0 - 1.6 bar  |            |
| R72 = 0 - 2.5 bar  |               |           |           |           |           | A72 = 0 - 2.5 bar  |            |
| R73 = 0 - 4 bar  |               |           |           |           |           | A73 = 0 - 4 bar    |            |
| R74 = 0 - 6 bar  |               |           |           |           |           | A74 = 0 - 6 bar    |            |
| R75 = 0 - 10 bar   |               |           |           |           |           | A75 = 0 - 10 bar   |            |
| R76 = 0 - 16 bar   |               |           |           |           |           | A76 = 0 - 16 bar   |            |
| R78 = 0 - 25 bar   |               |           |           |           |           |                    |            |
| R79 = 0 - 40 bar   |               |           |           |           |           |                    |            |
| R80 = 0 - 60 bar   |               |           |           |           |           |                    |            |
| R81 = 0 - 100 bar  |               |           |           |           |           |                    |            |
| R82 = 0 - 160 bar  |               |           |           |           |           |                    |            |
| R84 = 0 - 250 bar  |               |           |           |           |           |                    |            |
| R85 = 0 - 315 bar  |               |           |           |           |           |                    |            |
| R86 = 0 - 400 bar  |               |           |           |           |           |                    |            |
| R87 = 0 - 600 bar  |               |           |           |           |           |                    |            |
| R88 = 0 - 1000 bar (without flush-mounted diaphragm)                         |               |           |           |           |           |                    |            |
| R89 = 0 - 1600 bar (without flush-mounted diaphragm)                         |               |           |           |           |           |                    |            |
| R90 = 0 - 2500 bar (without flush-mounted diaphragm)                         |               |           |           |           |           |                    |            |

|                            |  |
|----------------------------|--|
| <b>Max. media temp.:</b>   | -30...+100°C                                     |
| <b>Max. ambient temp.:</b> | -20...+80°C                                      |
| <b>Max. storage temp.:</b> | -40...+100°C                                     |
| <b>Compensated range:</b>  | 0 to 80°C  |
| <b>Housing:</b>            | stainless steel,<br>European standard no. 1.4301 |
| <b>Weight:</b>             | approx. 0.2 kg                                   |
| <b>Accuracy:</b>           | class 0.25                                       |
| <b>Reproducibility:</b>    | < +/- 0.05% f. s.                                |
| <b>Response time:</b>      | 1 ms (between 10%...90% f. s.)                   |
| <b>Adjustability:</b>      | zero-point and measuring range up to 10%         |

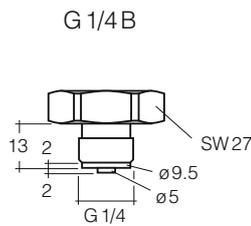
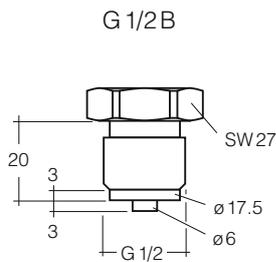
# PUM02/PUM03 – Pressure Transmitters

## Dimensions

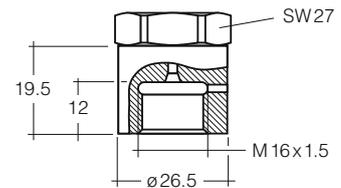
**Housing** – design with plug connector as per DIN43650



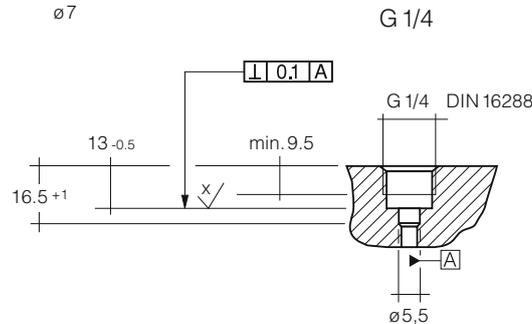
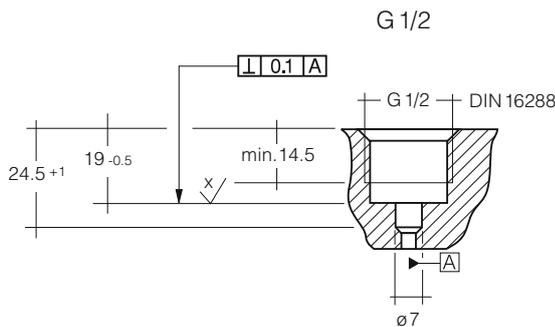
## Pressure ports



high-pressure threaded connection  
M 16x1.5 female



## Tapped hole and/or thread adapter as per DIN16288



high-pressure threaded connection  
M 16x1.5 female

