

## Pressure sensors for general application

with internal diaphragm  
for gauge pressure and absolute pressure

Accuracy 0.25% and 0.5%

Standard output: 4 ... 20 mA; 2-wire  
or 0 ... 5 VDC; 3-wire  
or 0 ... 10 VDC; 3-wire



### Description

Pressure sensors for general application are top of the range pressure transducers.

Their accuracy, reliability, resistance to corrosion and mechanical load make them suitable for all pressure measuring tasks - in production, development or in the laboratory.

The measuring ranges, graded in accordance with EN, range from 25 mbar to the maximum pressure range of 2500 bar. The case and wetted parts comprise stainless steel and are thus resistant to chemically aggressive media. The pressure connection and measuring element are welded together, making the measuring system particularly resistant to mechanical shock or vibration.

For more difficult measuring tasks (e.g. hydrostatic column), two potentiometers enable the zero point and measuring range to be set.

The pressure sensors for general application meet the electronic magnetic compatibility (EMC) requirements to EN 61 326.

### Features

- o Measuring ranges from 25 mbar to 2500 bar
- o Finely graded selection of nominal ranges according to EN
- o Corrosion resistant, stainless steel design
- o High overload protection
- o Highly resistant to shock and vibration
- o For dynamic or static measurements
- o Good reproducibility
- o Simple installation

### Measuring Ranges

Gauge pressure

|                   |                 |                     |
|-------------------|-----------------|---------------------|
| Negative          | -1... 0 bar     | to - 0.025 ...0 bar |
| Positive          | 0 ... 0.025 bar | to 0 ... 2500 bar   |
| Absolute pressure | 0 ... 0.25 bar  | to 0 ... 16 bar     |

### Applications

Development and laboratory, process engineering,  
plant and apparatus construction,  
hydraulics and pneumatics

Models: P3276

## Technical data

| Model                           | P3276  |                           |                                      |                           |                                    |                           | Option   |
|---------------------------------|--|---------------------------|--------------------------------------|---------------------------|------------------------------------|---------------------------|--|
| Pressure type                   | negative or positive gauge pressure  |                           |                                      | absolute pressure         |                                    |                           | negative or positive gauge pressure                |
| Output signal                   | 4 ... 20 mA - 2-wire<br>0 ... 5 VDC - 3-wire<br>0 ... 10 VDC - 3-wire  |                           |                                      |                           |                                    |                           | other signals on request                           |
| Accuracy % of F. S. 1)          | 0,5<br><i>0,25% BFSL</i>   | 0,25<br><i>0,13% BFSL</i> | 0,5<br><i>0,25% BFSL</i>             | 0,25<br><i>0,13% BFSL</i> | 0,5<br><i>0,25% BFSL</i>           | 0,25<br><i>0,13% BFSL</i> |  |
| Ranges accord. to EN            | 0 ... 0.1 bar 2)<br>to<br>0 ... 25 bar   |                           | 0 ... 40 bar<br>to<br>0 ... 2500 bar |                           | 0 ... 25 bar<br>to<br>0 ... 16 bar |                           | 0 ... 25 mbar 3)<br>0 ... 40 mbar<br>0 ... 60 mbar |
| Sensor element                  | piezoresistive   |                           | Thin film                            |                           | piezoresistive                     |                           |  |
| Repeatability                   | ≤ ± 0.05% of F. S.   |                           |                                      |                           |                                    |                           |  |
| Stability (annual)              | ≤ ± 0.2% of F. S. in rated conditions  |                           |                                      |                           |                                    |                           |  |
| Case                            | Stainless steel  |                           |                                      |                           |                                    |                           |  |
| Pressure connection 4)          | G 1/2 B to DIN 16 288  |                           |                                      |                           |                                    |                           | G 1/4 B; 1/4 NPT; 1/2 NPT                          |
| Wetted parts                    | Stainless steel 1.4571 and 1.4542  |                           |                                      |                           |                                    |                           |  |
| Overload limit                  | ≤ 16 bar 3,5 x; ≤ 600 bar 2 x; > 600 bar 1.5 x;<br>≥ 1600 bar 1,2 x  |                           |                                      |                           |                                    |                           |  |
| Electrical connection           | plug according to DIN EN 175301-803 form A with junction box round connector M12x1; 4-pin                                  |                           |                                      |                           |                                    |                           | cable outlet with 1 m cable                        |
| Power supply                    | 10 ... 30 VDC (14 ... 30 VDC for output 0 ... 10 V)  |                           |                                      |                           |                                    |                           |  |
| Power consumption               | current output 4 ... 20 mA; signal currency<br>voltage output: 8 mA  |                           |                                      |                           |                                    |                           |  |
| for output (0) 4 ... 20 mA Load | $\leq \frac{UB - 10V}{0,020A}$ for output 0(4)...20 mA<br>> 5 kOhm for output 0 ... 5 V<br>> 10 kOhm for output 0 ... 10 V |                           |                                      |                           |                                    |                           |  |
| Temp. compens. range            | 0 ... 80 °C  |                           |                                      |                           |                                    |                           |  |
| Temperature influence           | ± 0.2% / 10 K 5)   |                           |                                      |                           |                                    |                           |  |
| - Zero point                    | ± 0.2% / 10 K  |                           |                                      |                           |                                    |                           |  |
| - Measuring range               | ± 0.2% / 10 K  |                           |                                      |                           |                                    |                           |  |
| Adjustability                   | zero point and full scale up to ± 10%  |                           |                                      |                           |                                    |                           |  |
| Response time                   | ≤ 1 ms (within 10% to 90% of F. S.)  |                           |                                      |                           |                                    |                           |  |
| Protection type                 | IP 65 to EN 60 529 / IEC 529<br>IP 67 to M12x1 connector   |                           |                                      |                           |                                    |                           | IP 67 for cable outlet                             |
| Emission 6)                     | according to EN 61 326   |                           |                                      |                           |                                    |                           |  |
| Interference 6)                 | according to EN 61 326   |                           |                                      |                           |                                    |                           |  |
| Electrical protection types     | polarity, overload and short-circuit protection  |                           |                                      |                           |                                    |                           |  |
| Temperature ranges              | - Storage -40 ... 100 °C<br>- Medium -30 ... 100 °C<br>- Ambient -20 ... 80 °C   |                           |                                      |                           |                                    |                           | media temperature -40 ... 125 °C                   |
| Weight                          | approx. 0.2 kg   |                           |                                      |                           |                                    |                           |  |

<sup>1)</sup> Terminal point adjustment according to DIN 16 086, incl. linearity and hysteresis

of F. S. = of full scale value

<sup>2)</sup> 0.25% accuracy for ranges ≥ 0.25 bar

<sup>3)</sup> For ranges < 0.1 bar: model P3275; technical data as model P3276; wetted parts 1.4571, Si, Al and Au; only applicable for dry and non aggressive gases

<sup>4)</sup> 0 ... 2500 bar; M 16 x 1.5 female

<sup>5)</sup> ≤ ± 0.4 %/10 K for measuring ranges 0 ... 0.1 and 0 ... 0.16 bar

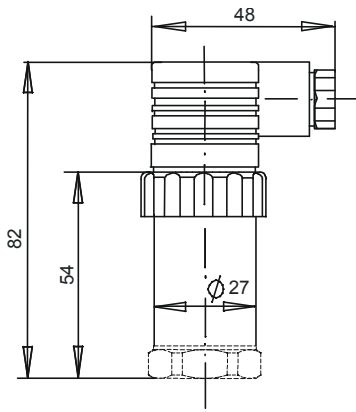
<sup>6)</sup> Declaration of conformity on request

# Dimensions

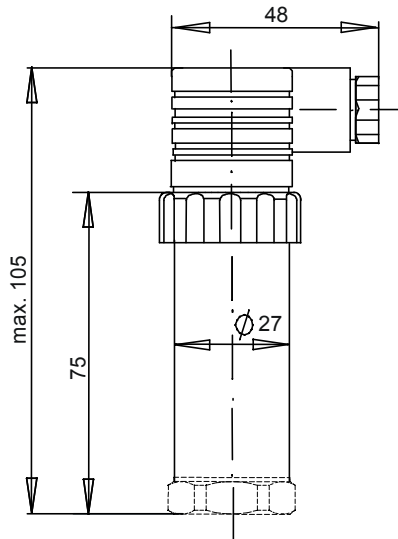
## Case

plug according to DIN EN 175301-803 form A with junction box

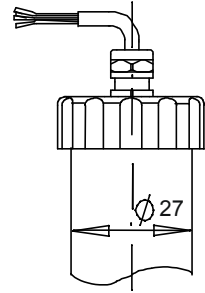
Accuracy 0.5%



Accuracy 0.25%

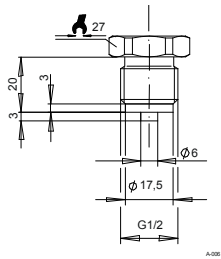


cable outlet

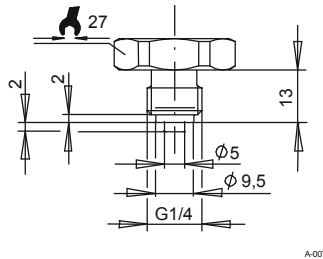


## Pressure connections

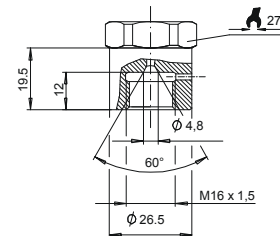
G 1/2 B



G 1/4 B

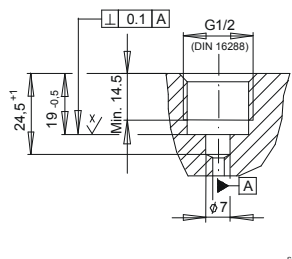


High pressure connection  
M16x1.5 female

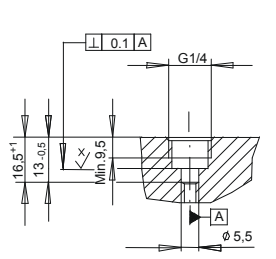


## Screw-in aperture according to DIN 16 288

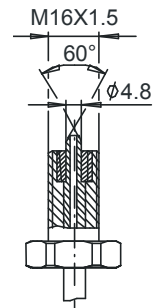
G 1/2



G 1/4



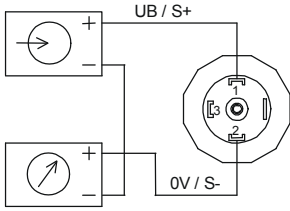
High pressure connection  
M16x1.5 female



# Electrical connection

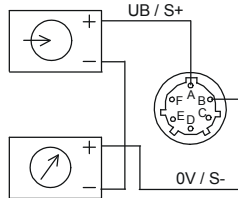
## Two-wire system

plug according to DIN EN 175301-803 form A with junction box



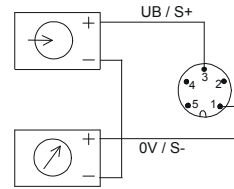
E-001

MIL-plug



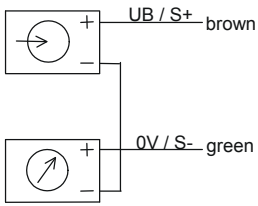
E-011

PT 02 E-10 6P 5-pin plug



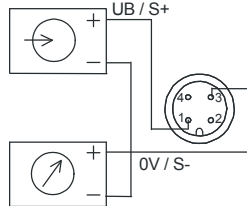
E-035

cable outlet



E-015

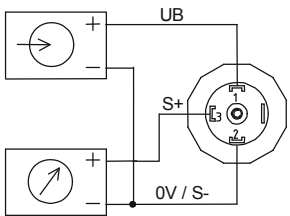
M12x1



E-033

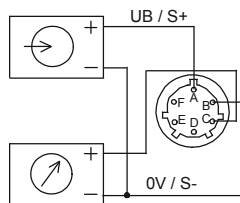
## Three-wire system

plug according to DIN EN 175301-803 form A with junction box



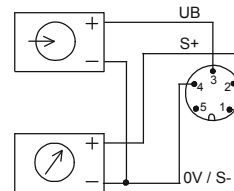
E-002

MIL-plug



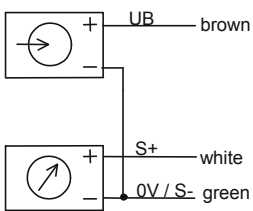
E-012

PT 02 E-10 6P 5-pin plug



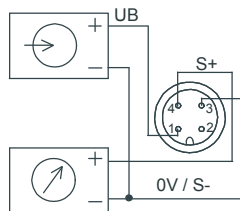
E-036

cable outlet



E-017

M12x1



E-034

## Connection table for DIN plug or cable outlet

|             | 4 ... 20 mA<br>(2-wire) |       | 0 ... 10 VDC<br>(3-wire) |       |
|-------------|-------------------------|-------|--------------------------|-------|
| Supply: UB+ | 1                       | brown | 1                        | brown |
| Supply: 0V  | 2                       | green | 2                        | green |
| Signal: S+  | ---                     | ----- | 3                        | white |
| Signal:     | ---                     | ----- | 2                        | green |

### Order details

1. Model
2. Measuring range
3. Output signal
4. Options

Modifications reserved