**Pressure sensors for general application**

### with front flush diaphragm

**for gauge pressure and absolute pressure Accuracy 0.25% and 0.5%**

**Standard output: 4 . . . 20 mA; 2-wire system**

**or 0 . . . 5 VDC; 3-wire system or 0 . . . 10 VDC; 3-wire system**

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| Force | Pressure | Temperature | Switch

**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 front flush pressure diaphragm avoids zones, in which medium could crystallize or residues could form, thus ensuring trouble-free pressure measurement and hygienic cleaning of the pressure sensors.

The measuring ranges, graded in accordance with EN, range from 0,1 bar to 600 bar. The case and wetted parts comprise stainless steel and are thus resistant to chemically aggressive media. With the aid of an integrated cooling element, the sensors can be supplied with medium temperatures of up to 150 °C.

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

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

# Features

* For pasty or crystallizing media
* Finely graded selection of nominal ranges according to EN
* Corrosion resistant, stainless steel design
* High overload protection
* Highly resistant to shock and vibration
* For dynamic or static measurements
* Good reproducibility
* Integrated cooling element for medium temperatures of up to 150° C

# Measuring Ranges

Gauge pressure

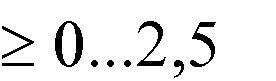
Negative -1 . . . 0 bar to -0,1. . . 0 bar Positive 0 . . . 0.01 bar to 0 . . . 600 bar Absolute pressure 0 . . . 0.25 bar to 0 . . . 16 bar

# Applications

Process engineering,

Plant and apparatus construction, Development and laboratory applications

#### Models: P3251



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|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Model** | **P3251** | | | | | | **Option** |
| Pressure type | negative or positive gauge pressure | | | | absolute pressure | | negative or positive gauge pressure |
| Output signal | 4 . . . 20 mA - 2-wire system  0 . . . 5 VDC - 3-wire system 0 . . . 10 VDC - 3-wire system | | | | | | other signals on request |
| Accuracy % of F. S. 1) | 0,5 | 0,25 | 0,5 | 0,25 | 0,5 | 0,25 |  |
| Ranges accord. to EN | 0 0.1 bar 2)  to  0 16 bar | | 0 . . . 25 bar to  0 . . . 600 bar | | 0 . . . 0,25 bar  to  0 . . . 16 bar | |
| 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 | ≤ 0…1,6 bar G 1 B; bar G 1/2 B | | | | | |
| Wetted parts | Stainless steel | | | | | |
| Overload limit | ≤ 16 bar 3,5 x; ≤ 600 bar 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 | output 4 . . . 20 mA: signal currency voltage output: 8 mA | | | | | |
| Load | ≤ UB - 12 V for output (0) 4 . . . 20 mA  0.020 A   * 5 kOhm for output 0 . . . 5 V * 10 kOhm for output 0 . . . 10 V | | | | | |
| Temp. compens. range | 0 . . . 80 °C | | | | | |
| Temperature influence   * Zero point * Measuring range | ± 0.2% / 10 K 3)  ± 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 | | | | | | IP 67 for cable outlet |
| Emission 4) | according to EN 61 326 | | | | | |  |
| Interference 4) | according to EN 61 326 | | | | | |
| Electrical protection types | polarity, overload and short-circuit protection | | | | | |
| Temperature ranges   * Storage * Medium * Ambient | -40 . . .100 °C  -30 . . .100 °C  -20 . . . 80 °C | | | | | | medium temperature  -40 . . . 125 °C  integrated cooling element for temperatures  up to 150° C |
| Weight | approx. 0.2 kg | | | | | |  |

of F. S. = of full scale value

1) 0.25% accuracy for ranges ≥ 0.25 bar

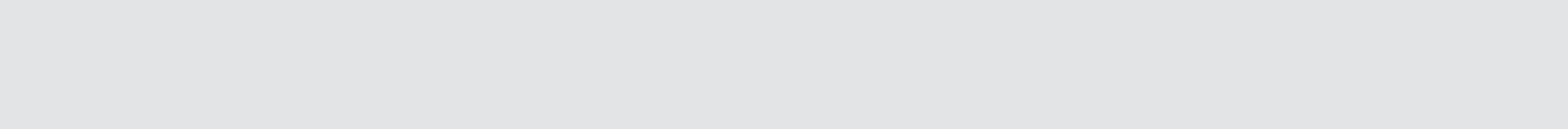
2) For ranges < 0.1 bar: model P3275; technical data as model P3276;

wetted parts 1.4571, Si, Al and Au; only applicable for dry and non aggressive gases

3) ≥ 0 . . . 2500 bar; M 16 x 1.5 female

4) ≤ ± 0,4%/10 K for measuring ranges 0 . . . 0.1 and 0 0.16 bar

5) Declaration of conformity on request



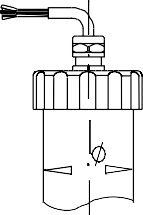
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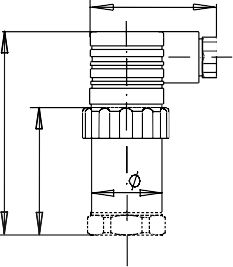
**Case**

**Plug according to DIN EN 175301-803 form A**

Accuracy 0,5% Accuracy 0,25% with integrated cooling element cable outlet



27



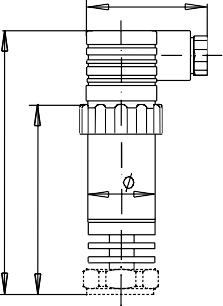
48

27



48

27



48

27

82

\* for long version + 22 mm

54

max. 105

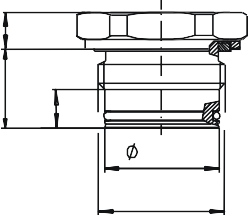
75

102\*

73\*

#### Pressure connections

G ½ B G 1 B



30 -0,1

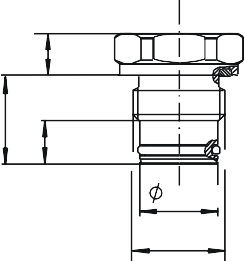
G1

10.5

20,5 10.5

10

A-005



18 -0.1

G1/2

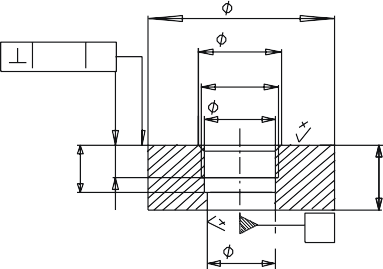
20.5

10

A-004

#### weld-on socket or screw-in aperture

G ½ G 1



0.1 A

50

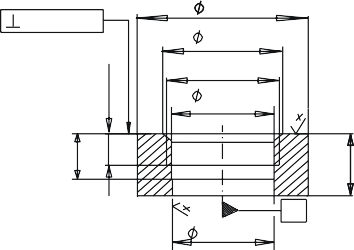
21.3 -0,2

G1/2 19.4+0.1

18.2

+0.1

A



50

33.5 -0.2

G1 30.5 +0.1

30.1 +0.1

A

A

0.1

Min.10.5

Min.10.5

S-004

15 -0.2

21

15 -0.2

21

S-003

### Two-wire system

DIN EN 175301-803 form A plug MIL-plug PT 02 E-10 6P 5-pin plug



UB / S+

1

3

2

0V / S-



UB / S+

F A B E D C

0V / S-



UB / S+

4 3 2

5 1

0V / S-

E-001

cable outlet M12x1

brown



UB / S+

4 3

1 2

0V / S-



UB / S+

0V / S-

green

E-011

E-035

### Three-wire system

E-015

E-033

DIN EN 175301-803 form A plug MIL-plug PT 02 E-10 6P 5-pin plug



UB

S+

0V / S-



UB / S+

F A B E DC

0V / S-



UB / S+

F A B E DC

0V / S-

E-002

cable outlet M12x1

braun

E-012

E-012

## 



UB

brown

S+

white

0V / S-

green



UB

S+

4 3

1

2

0V / S-

E-034

weiß

grün

E-017

# Connection table for DIN plug or cable outlet

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 4 . . . 20 mA  (2-wire) | | 0 . . . 10 VDC  (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

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Modifications reserved