





## Pressure Transmitter

- Ceramic/thick film measurement cell
- Two-wire version for 4... 20 mA output
- Compact, stable construction for the highest operational reliability

Type 8316 can be combined with...



**Type 8611**

Universal Controller  
eControl



**Type 8802-GD**

Continuous  
SideControl system



**Type 8619**

Multifunction  
transmitter/controller




**PLC**

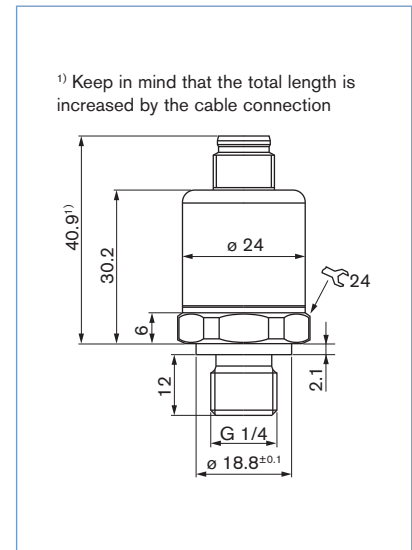
The compact Type 8316 pressure transmitter meets the highest requirements with regard to mechanical loading, EMC characteristics and operational reliability and is particularly suitable for demanding industrial applications.

| General data                       |   |
|------------------------------------|---|
| <b>Body material</b>               | Stainless steel 1.4305 AISI 303   |
| <b>Wetted parts materials</b>      | Ceramics (Al <sub>2</sub> O <sub>3</sub> ), stainless steel 1.4305, FKM seal<br>(for pressure 0 - 100 bar, only stainless steel 1.4305, no FKM seal, no ceramics) |
| <b>Electrical connection</b>       | Round male connector M12x1  |
| <b>Process connection</b>          | G 1/4" external to DIN 3852 Form E<br>NPT 1/4" external   |
| <b>Installation</b>                | As required, preferably with pressure connection in downward position   |
| <b>Measurement technology</b>      | Ceramic or thick film   |
| <b>Measurement procedure</b>       | Relative pressure measurement   |
| <b>Measuring range</b>             | 0 to 1, 4, 6, 10, 16, 40 or 100 bar (0 to 14.51, 58.04, 87.06, 145.1, 232.16, 580.4, 1451 PSI)  |
| <b>Overload, bursting pressure</b> | 3 x full scale at 0... 4 bar (0... 58.04 PSI)<br>2.5 x full scale at 6... 100 bar (87.06... 1451 PSI)   |
| <b>Fluid temperature</b>           | -15 to +125°C (5 to 257°F)  |
| <b>Accuracy</b>                    | Sum of linearity, hysteresis and reproducibility, balancing accuracy of zero point and full scale:<br>≤ 0.5% of F.S.*   |
| <b>Resolution</b>                  | 0.1% of F.S.  |
| <b>Dynamic response</b>            | Suitable for static and dynamic measurements<br>response time < 2 ms, typ. 1 ms   |



\* F.S. = full scale

| Electrical data                     |  |
|-------------------------------------|--|
| <b>Operating voltage (U)</b>        | 7 to 33 V DC, unregulated  |
| <b>Output signal</b>                | Standard 4... 20 mA (two-wire) or 0... 10 V DC (three-wire) signal   |
| <b>Load in <math>\Omega</math></b>  | $< (U - 7 V) / 0.02 A$   |
| <b>Protected connection</b>         | Short-circuit proof & protected against reverse polarity   |
| Environment                         |  |
| <b>Ambient temperature</b>          | -15 to + 85°C (5 to 185 °F)  |
| <b>Temperature coefficient</b>      | < 0.2% of F.S.* / 10K  |
| Standard and approvals              |  |
| <b>Protection class</b>             | IP67   |
| <b>EMC</b>                          | EN 61326-2-3   |
| <b>Approval</b>                     | CE; UL-Recognized for US and Canada (61010-1 + CAN/CSA-C22 No.61010-1)  |
| Test/Admissions                     |  |
| <b>Shock acc. EN 60068-2-27</b>     | 25g, 6 ms half sine wave, all three directions.  |
| <b>Drop test acc. EN 60068-2-23</b> | from 1 m on concrete   |
| <b>Vibration acc. EN 60770-1</b>    | 50m/s, 10... 1000 Hz, 1 Octave/min, 20 constant load per axis  |


## Dimensions [mm]





## Ordering chart for pressure transmitter Type 8316

| Process connection  | Pressure range | Operating voltage | Output signal      | Electrical connection | Item no.           |
|---|----------------|-------------------|--------------------|-----------------------|--------------------|
| G 1/4"<br>UL-Recognized for US and Canada    | 0 - 1.00 bar   | 7... 33 V DC      | 4... 20 mA         | M12 male connector    | 563 777            |
|   | 0 - 4.00 bar   | 7... 33 V DC      | 4... 20 mA         | M12 male connector    | 563 778            |
|   | 0 - 6.00 bar   | 7... 33 V DC      | 4... 20 mA         | M12 male connector    | 563 779            |
|   | 0 - 10.0 bar   | 7... 33 V DC      | 4... 20 mA         | M12 male connector    | 563 780            |
|   |                |                   |                    | 0... 10 V DC          | M12 male connector |
|   | 0 - 16.0 bar   | 7... 33 V DC      | 4... 20 mA         | M12 male connector    | 563 781            |
|   | 0 - 40.0 bar   | 7... 33 V DC      | 4... 20 mA         | M12 male connector    | 563 782            |
| 0 - 100.0 bar   | 7... 33 V DC   | 4... 20 mA        | M12 male connector | 563 783               |                    |
| NPT 1/4"<br>UL-Recognized for US and Canada  | 0 - 60 PSI     | 7... 33 V DC      | 4... 20 mA         | M12 male connector    | 564 466            |
|   | 0 - 150 PSI    | 7... 33 V DC      | 4... 20 mA         | M12 male connector    | 564 467            |
|   | 0 - 300 PSI    | 7... 33 V DC      | 4... 20 mA         | M12 male connector    | 564 468            |


 Further versions on request

 **Pressure**  
other measuring ranges

 **Port connection**  
NPT 1/4", ...


 **Electrical connection**  
connectors: mini DIN, DIN ...

 **Additional**  
electrical outputs: 0 - 10 V DC, 0 - 5 V DC

 **Materials**  
EPDM seal, stainless steel 1.4404 AISI 316L

## Ordering chart accessories

| Description   | Item no. |
|---|----------|
| 5-pin M12 female cable connector with plastic threaded locking ring | 917 116  |
| 5-pin M12 female connector moulded on cable (2 m, shielded)         | 438 680  |

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In case of special application conditions,  
please consult for advice.

Subject to alteration.  
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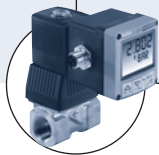
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## Pressure transmitter for general applications, 0 - 25 bar

- Piezoresistive or thin film sensor element
- Available with flush diaphragm standard or acc. to EHEDG
- Housing and wetted parts in corrosion-resistant stainless steel
- Standard signal 4...20 mA for connection to automation-systems
- Plug for quick installation and service

Type 8323 can be combined with...



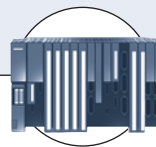
**Type 8624-2**  
PI controller



**Type 2712 (1067)**  
Control valve with SideControl



**Type 0911**  
Process indicator



**PLC**

This pressure transmitter is designed to cover the majority of industrial applications in the field of industrial pressure measurement technology. High accuracy, compact design, robust construction and flexibility make this instrument universal and suitable for different measurement functions. For technical reasons piezoresistive sensor element is used for measuring ranges up to 16 bar and thin film sensor element for the measuring range of 25 bar. Wetted parts are made of stainless steel and completely welded. Internal seal elements, which could restrict the choice of measuring materials, are excluded.

### General data

|  |   |
|--|---|
| <b>Compatibility</b><br>Standard version<br>Flush Diaphragm version  | Any pipe with sensor connection<br>G 1/2" A according to DIN 16288,<br>G 1" B with O-ring (range up to 1.6 bar)<br>G 1/2" B with O-ring (range > 1.6 bar)<br>G 1" B for EHEDG (all ranges)<br>(Weld-on socket with connection G1/2"B, G1"B) |
| <b>Materials</b><br>Housing<br>Wetted parts<br>Standard version<br>Flush Diaphragm version<br>Internal transmitting liquid | Stainless steel 1.4301<br><br>Stainless steel 1.4571 (and 1.4542 with 25 bar)<br>Stainless steel 1.4571, FKM seal<br>Synthetic Oil (only for pressure range up to 16 bar or flush diaphragm units)  |
| <b>Electrical connections</b>  | 4 pin cable plug acc. to EN 175301-803  |
| <b>Measuring range</b> (Pressure reference = relative pressure [atmospheric])  | 0 up to 0.1; 0.16; 0.25; 0.4; 0.6; 1.0; 1.6; 2.5; 4.0; 6.0; 10.0; 16.0 or 25.0 bar (in PSI on request)  |
| <b>Measuring element</b>   | piezo ( $\leq 16$ bar) / thin film (25 bar)   |
| <b>Fluid temperature</b><br>Standard version<br>Flush Diaphragm stand. vers.<br>Flush Diaphragm EHEDG vers.                | -20 up to +100°C<br>-30 up to +100°C<br>-20 up to +150°C  |
| <b>Compensated T° range</b>  | 0 up to +80°C   |
| <b>Temperature coefficient</b><br>Average Tc of zero<br>Standard version<br>Flush Diaphragm version<br>Average Tc of Span  | in compensated T° range<br><br>$\leq 0.2\%$ of F.S.* / 10K<br>$\leq -0.2...+0.3\%$ of F.S.* / 10K<br>$\leq 0.2\%$ of F.S.* / 10K  |
| <b>Accuracy</b>  | $\leq 0.5\%$ of F.S.* (2-point calibration) <sup>1)</sup><br>$\leq 0.25\%$ of F.S.* (Best fit calibration, BFSL) <sup>1)</sup>  |
| <b>Hysteresis</b>  | $\leq 0.1\%$ of F.S.*   |
| <b>Repeatability</b>   | $\leq 0.05\%$ of F.S.*  |
| <b>1-year stability</b>  | $\leq 0.2\%$ of F.S.* (at reference conditions)   |

<sup>1)</sup> Calibrated in vertical mounting position with pressure connection bottom

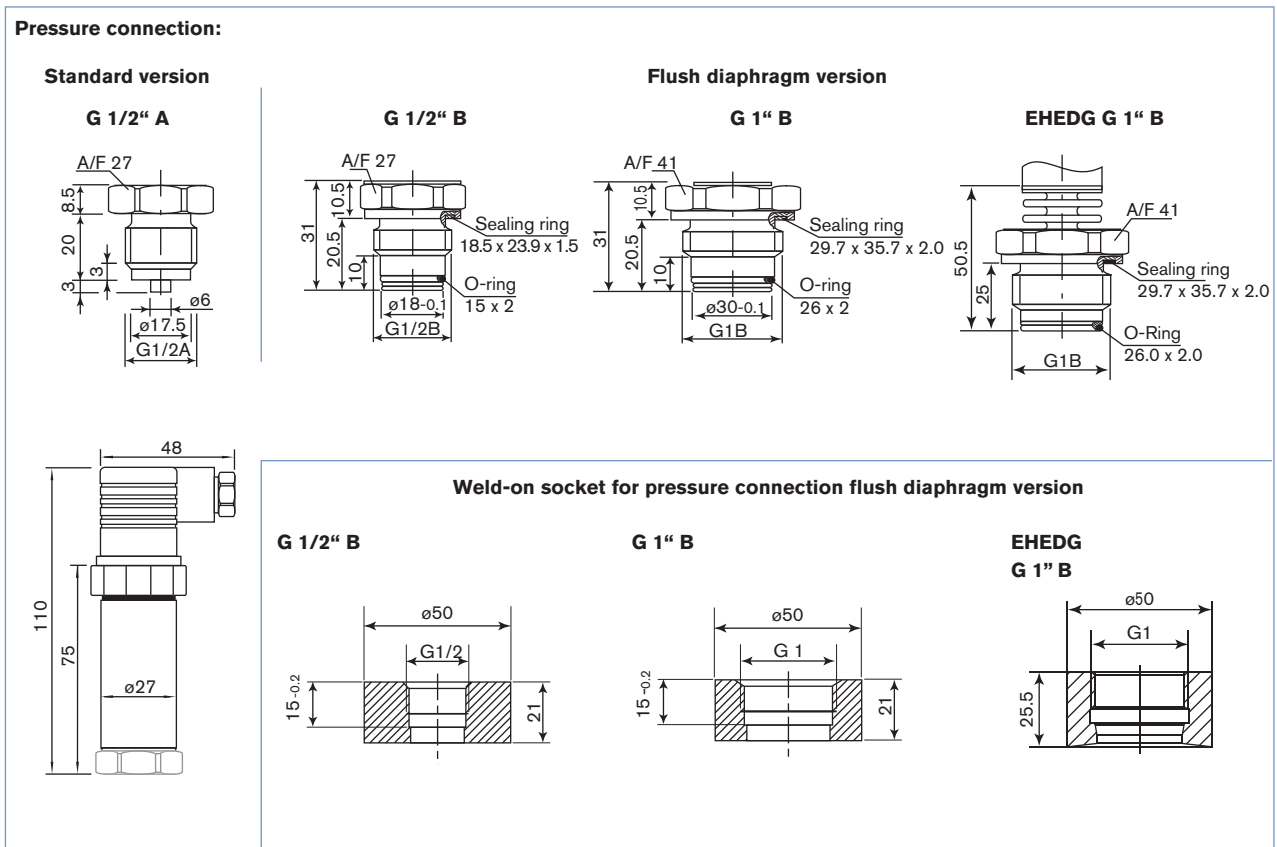
\* F.S.=Full scale

| Electrical data -          |                                     |
|----------------------------|-------------------------------------|
| Power supply [V+]          | 10 -30 V DC                         |
| Reversed polarity of DC    | Protected                           |
| Overvoltage protection     | Yes                                 |
| Short circuit protection   | Yes                                 |
| Output                     | Standard 4-20 mA signal, 2 wires    |
| Load in $\Omega$           | $\leq (V+ [V] - 10 [V]) / 0.02 [A]$ |
| Adjustability: Zero / span | $\pm 10\%$                          |
| Response time              | $\leq 1$ ms                         |

| Environment                  |                  |
|------------------------------|------------------|
| <b>Ambient temperature</b>   |                  |
| Standard version             | -20 up to +80°C  |
| Flush Diaphragm stand. vers. | -20 up to +80°C  |
| Flush Diaphragm EHEDG vers.  | -20 up to +80°C  |
| <b>Storage temperature</b>   |                  |
| Standard version             | -40 up to +100°C |
| Flush Diaphragm stand. vers. | -40 up to +100°C |
| Flush Diaphragm EHEDG vers.  | -20 up to +100°C |

| Standards and approvals |   |
|-------------------------|---|
| <b>Protection class</b> | IP65 with cable plug EN175301-803 mounted and tightened |
| <b>Standard:</b>        |   |
| EMC                     | EN 50081-1, 50081-2, 50082-2                            |
| Shock resistance        | IEC 770, 1000g (mechanical shock)                       |
| Vibration resistance    | IEC 770, 2g (vibration under resonance)                 |

## Dimensions



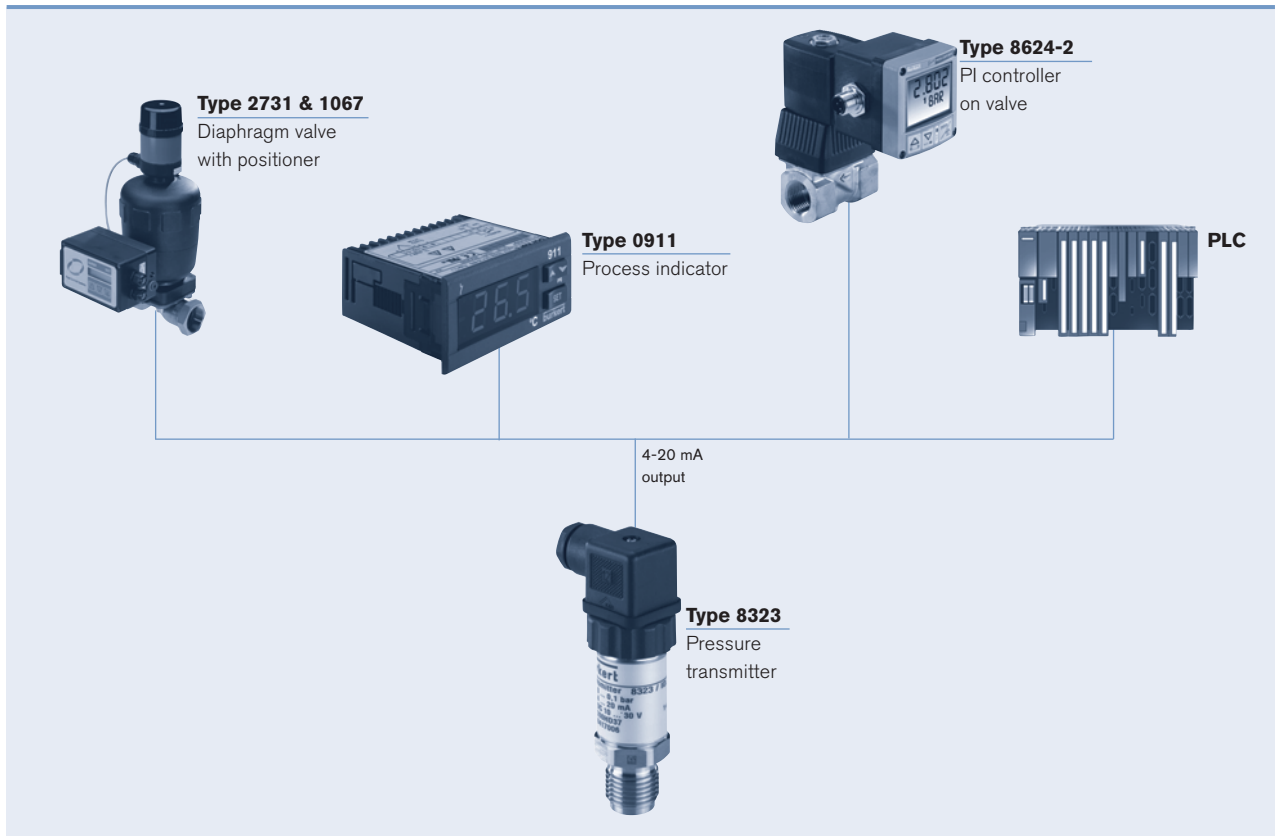
## Ordering chart for Type 8323 (other versions on request)

| Pressure range [bar] | Pressure max. [bar] | Bursting pressure [bar] | Power supply | Output signal | Standard | Item no.                          |                                 |                            |
|----------------------|---------------------|-------------------------|--------------|---------------|----------|-----------------------------------|---------------------------------|----------------------------|
|                      |                     |                         |              |               |          | Flush diaphragm standard G 1/2" B | Flush diaphragm standard G 1" B | Flush diaphragm EHEDG 1" B |
| 0 - 0.10             | 1                   | 2                       | 10 - 30 V DC | 4...20 mA     | 417 692  | -                                 | 552 063                         | 551 803                    |
| 0 - 0.16             | 1.5                 | 2                       | 10 - 30 V DC | 4...20 mA     | 417 693  | -                                 | 552 064                         | -                          |
| 0 - 0.25             | 2                   | 2                       | 10 - 30 V DC | 4...20 mA     | 417 694  | -                                 | -                               | -                          |
| 0 - 0.40             | 2                   | 2                       | 10 - 30 V DC | 4...20 mA     | 417 695  | -                                 | 552 065                         | 551 675                    |
| 0 - 0.60             | 4                   | 4                       | 10 - 30 V DC | 4...20 mA     | 417 696  | -                                 | -                               | 551 676                    |
| 0 - 1.00             | 5                   | 5                       | 10 - 30 V DC | 4...20 mA     | 417 697  | -                                 | 552 066                         | 551 677                    |
| 0 - 1.60             | 10                  | 10                      | 10 - 30 V DC | 4...20 mA     | 417 698  | -                                 | -                               | 551 678                    |
| 0 - 2.50             | 10                  | 10                      | 10 - 30 V DC | 4...20 mA     | 417 699  | -                                 | -                               | 551 679                    |
| 0 - 4.00             | 17                  | 17                      | 10 - 30 V DC | 4...20 mA     | 417 700  | -                                 | -                               | -                          |
| 0 - 6.00             | 35                  | 35                      | 10 - 30 V DC | 4...20 mA     | 417 701  | 552 067                           | -                               | -                          |
| 0 - 10.0             | 35                  | 35                      | 10 - 30 V DC | 4...20 mA     | 417 702  | 552 068                           | -                               | 551 684                    |
| 0 - 16.0             | 80                  | 80                      | 10 - 30 V DC | 4...20 mA     | 417 703  | 552 069                           | -                               | -                          |
| 0 - 25.0             | 50                  | 250                     | 10 - 30 V DC | 4...20 mA     | 417 704  | -                                 | -                               | -                          |

## Ordering chart for accessories (to be ordered separately)

| Description  | Item no. |
|--|----------|
| Weld-on socket for flush diaphragm standard version G 1/2" | 443 295  |
| Weld-on socket for flush diaphragm standard version G 1"   | 444 137  |
| Weld-on socket for flush diaphragm EHEDG version G 1"      | 443 296  |

## Interconnection possibilities with other Bürkert products



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In case of special application conditions,  
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