



## PBS plus

Multifunctional IO-Link sensor for pressure measurement, control and monitoring

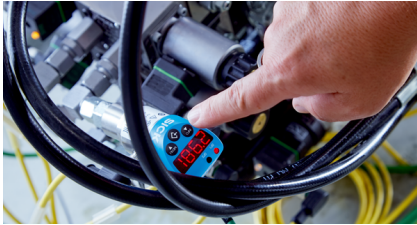
**PRESSURE SENSORS**

**SICK**  
Sensor Intelligence.

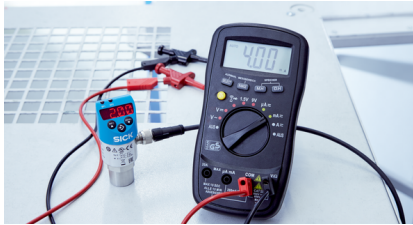
## Advantages

### Lots of functions at a low cost: Measuring transducer, switch, display, logic and Industry 4.0 connectivity in one device

The PBS plus pressure switch has been designed with regard to optimum functionality and range of use. The result: A wide range of setting options reduces the number of sensor variants required within a production process, which in turn reduces potential warehousing costs for customers. For example, with the practical switchover function, you can determine on site at the sensor whether a PNP or NPN switching signal is to be output or whether a current or voltage output is required with the analog signal.



Variants with up to two switching points, analog output and IO-Link make the PBS plus a sensor with great variability.



The scalable analog output allows for individual adaptation to the pressure range relevant for the application.



IO-Link enables diagnostic functions and predictive maintenance. External parameterization also makes handling easier and ensures low maintenance costs.



**Thanks to its versatile functions, one and the same version of the PBS plus is suitable for many different applications. This effectively reduces effort and costs for warehousing.**

### High flexibility during integration

The PBS plus can be completely adapted to the respective application and installation situation on site. For example, the housing can be rotated twice – at the process connection and at the display cap. This means the electrical connection can be rotated in the desired direction at any time. The display can also rotate 180°. This allows integration into almost any machine design, and good accessibility of the display and the setting elements is ensured. In addition, the large number of available process connections, including flush-mounted membrane for sticky, crystallizing and viscous media, increases the integration possibilities of the PBS plus.



Depending on the requirements on site, the PBS plus is available with standard threaded connections or flush-mounted membrane.



The pressure sensor can be optimally aligned in the direction of the specialist in almost any machine design, which makes operation and readability much easier.



The PBS plus can be integrated quickly and easily. Parameterization can be performed automatically via IO-Link.



**Suitable for a wide range of machine designs: The PBS plus is flexible and can adapt to any installation situation.**

## Made for challenging conditions

Whether in aggressive environments, with high pressures up to 1,000 bar or viscous liquids, the PBS plus is very comfortable in challenging environments. Due to the integrated electrochemical cell with fully welded stainless steel membrane, it can withstand even aggressive media, as no sealing medium is required between the electrochemical cell and membrane, which can potentially be attacked. Media temperatures between  $-20^{\circ}\text{C}$  and  $+85^{\circ}\text{C}$  are also no problem for the PBS plus. This ensures very high reliability for switching operations as well as pressure measurement.



The PBS plus is effectively protected against corrosion thanks to a fully-welded stainless steel membrane.



Thanks to enclosure rating IP67, the sensor is resistant to water and dust.



High precision from pressures of 0.4 bar means the device is particularly economical for hydrostatic level measurements with low water columns.



**Constant performance during operation: The PBS plus ensures very high process reliability in applications with demanding measurement conditions.**



## Technical data overview

|  |   |
|--|---|
| <b>Device type</b>                           | Pressure switch   |
| <b>Measuring ranges</b>                      |   |
| Gauge pressure                               | 0 bar ... 0.4 bar (0 psi ... 6 psi) to 0 bar ... 1,000 bar (0 psi ... 14,504 psi)   |
| Absolute pressure                            | 0 bar ... 0.4 bar (0 psi ... 6 psi) to 0 bar ... 25 bar (0 psi ... 363 psi)   |
| Compound pressure                            | -1 bar ... 0 bar (-14.5 psi ... 0 psi) to -1 bar ... +24 bar (-14.5 psi ... +348 psi)                                     |
| <b>Pressure unit</b>                         | Bar (can be switched to psi, MPa, kPa, kg/cm <sup>2</sup> )   |
| <b>Accuracy</b>                              | ≤ ± 0.5 % of the span   |
| <b>Setting accuracy of switching outputs</b> | ≤ ± 0.5 % of span   |
| <b>Output signal</b>                         | Output 1: PNP/IO-Link, Output 2 (optional): PNP/NPN switchable, Analog output (optional): 4...20 mA / 0...10 V switchable |
| <b>Electrical connection</b>                 | Round connector M12 x 1   |

## Product description

The PBS plus is an electronic pressure switch, pressure transmitter and display in one and is available with up to two switching outputs, analog output and IO-Link. It is set using three large pushbuttons and the display or via IO-Link. The housing can be twisted in two places - the display and the electrical connection can be optimally aligned in any mounting situation. With measuring ranges of 0.4 bar to 1,000 bar (gauge pressure), the PBS plus can be used in many different applications. It also has absolute pressure and vacuum measuring ranges. The PBS plus is highly resistant to corrosion due to the fully-welded stainless steel membrane. Process data is transmitted to the control via IO-Link as measured values in bar. The diagnostic options make it possible for temperature values to be read out in °C and minimum and maximum values for temperature and pressure to be monitored.

## At a glance

- Switchable switching outputs (PNP/NPN) and analog output (current/voltage)
- Scalable analog output (5:1 turn down)
- High measurement accuracy: ± 0.5%
- IO-Link for transmitting process data to the control as measured values in bar
- Housing can be twisted in two places (process connection/display) and display can be rotated by 180°
- Common process connections, also with flush-mounted membrane

## Your benefits

- Low storage costs, short delivery times, low number of variants
- Reduced installation time since housing and display can be rotated at two points
- Rugged design: stainless steel measuring cell
- No special conversion of IO-Link process data is required - it is shown automatically as measured values in bar
- Extensive diagnosis options via IO-Link (e.g. pressure peaks, ambient temperature) deliver data for predictive maintenance
- Economic solution for hydrostatic level measurement (thanks to high accuracy and small measuring ranges)

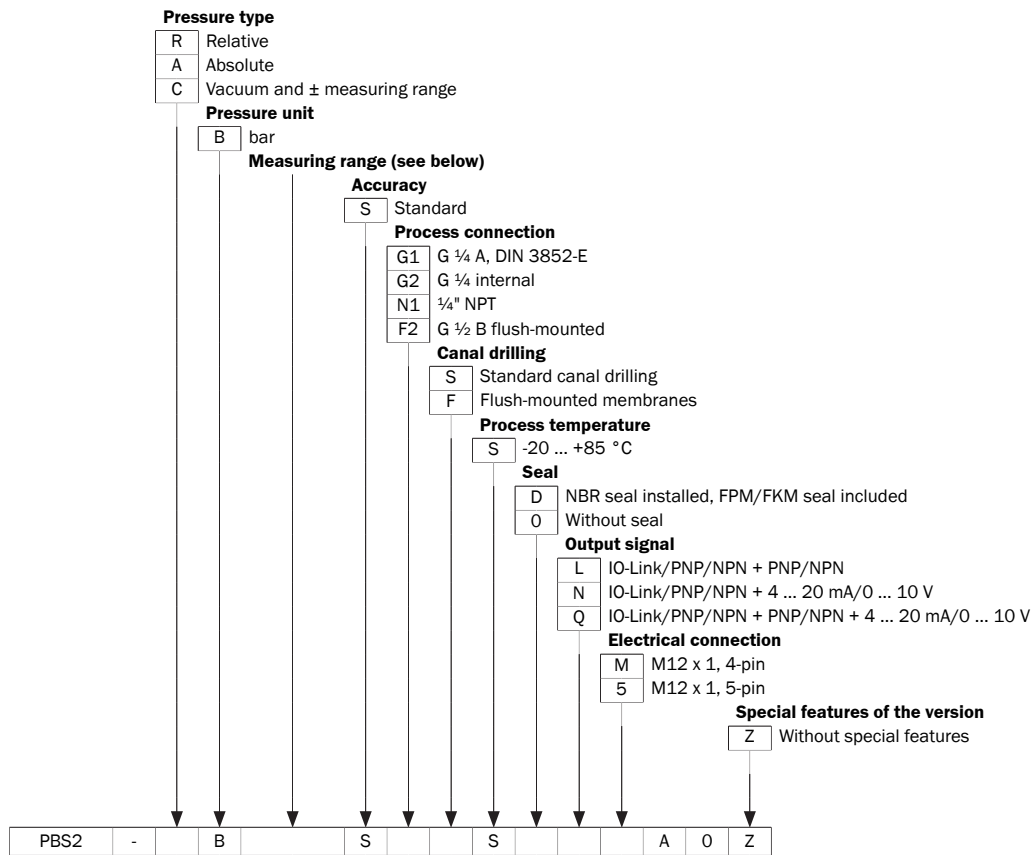
## Fields of application

- Measurement of system pressure in hydraulic systems
- Control of the clamping pressure in CNC machines
- Monitoring of the cylinder pressure in hydraulic presses
- Control of the pressure in cooling and lubricant systems
- Hydrostatic level measurement
- Measurement of system pressure in PET bottle production

## Type code

Other models and accessories → [www.sick.com/PBS\\_plus](http://www.sick.com/PBS_plus)

## Type code



Not all variants of the type code can be combined!

## Measuring range

|     | Gauge pressure measuring range | Overload limit |
|-----|--------------------------------|----------------|
| X40 | 0 ... 0.4 bar                  | 0.8 bar        |
| X60 | 0 ... 0.6 bar                  | 1.2 bar        |
| 1X0 | 0 ... 1 bar                    | 2 bar          |
| 1X6 | 0 ... 1.6 bar                  | 3.2 bar        |
| 2X5 | 0 ... 2.5 bar                  | 5 bar          |
| 4X0 | 0 ... 4 bar                    | 8 bar          |
| 6X0 | 0 ... 6 bar                    | 12 bar         |
| 010 | 0 ... 10 bar                   | 20 bar         |
| 016 | 0 ... 16 bar                   | 32 bar         |
| 025 | 0 ... 25 bar                   | 50 bar         |
| 040 | 0 ... 40 bar                   | 80 bar         |
| 060 | 0 ... 60 bar                   | 120 bar        |
| 100 | 0 ... 100 bar                  | 200 bar        |
| 160 | 0 ... 160 bar                  | 320 bar        |
| 250 | 0 ... 250 bar                  | 500 bar        |
| 400 | 0 ... 400 bar                  | 800 bar        |
| 600 | 0 ... 600 bar                  | 1,200 bar      |
| 1K0 | 0 ... 1,000 bar                | 2,000 bar      |

|     | Absolute pressure measuring range | Overload limit |
|-----|-----------------------------------|----------------|
| X40 | 0 ... 0.4 bar abs                 | 0.8 bar abs    |
| X60 | 0 ... 0.6 bar abs                 | 1.2 bar abs    |
| 1X0 | 0 ... 1 bar abs                   | 2 bar abs      |
| 1X6 | 0 ... 1.6 bar abs                 | 3.2 bar abs    |
| 2X5 | 0 ... 2.5 bar abs                 | 5 bar abs      |
| 4X0 | 0 ... 4 bar abs                   | 8 bar abs      |
| 6X0 | 0 ... 6 bar abs                   | 12 bar abs     |
| 010 | 0 ... 10 bar abs                  | 20 bar abs     |
| 016 | 0 ... 16 bar abs                  | 32 bar abs     |
| 025 | 0 ... 25 bar abs                  | 50 bar abs     |

|     | ± measuring range | Overload limit |
|-----|-------------------|----------------|
| 1X0 | -1 ... 0 bar      | 2 bar          |
| 2X5 | -1 ... +1.5 bar   | 3 bar          |
| 4X0 | -1 ... +3 bar     | 6 bar          |
| 6X0 | -1 ... +5 bar     | 10 bar         |
| 010 | -1 ... +9 bar     | 18 bar         |
| 016 | -1 ... +15 bar    | 30 bar         |
| 025 | -1 ... +24 bar    | 48 bar         |



## SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**For us, that is “Sensor Intelligence.”**

## WORLDWIDE PRESENCE:

Contacts and other locations –[www.sick.com](http://www.sick.com)