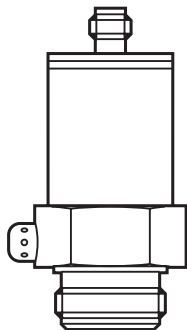




Operating instructions
Electronic pressure sensor
PL205x

UK

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Contents

| | |
|---|---|
| 1 Preliminary note..... | 2 |
| 1.1 Symbols used..... | 2 |
| 2 Safety instructions | 3 |
| 3 Functions and features | 4 |
| 3.1 Applications | 4 |
| 4 Function..... | 4 |
| 4.1 Processing of the measured signals..... | 4 |
| 5 Installation..... | 5 |
| 6 Electrical connection..... | 7 |
| 7 Operation..... | 8 |
| 7.1 Cleaning of the filter cover..... | 8 |
| 8 Parameter setting | 8 |
| 8.1 Adjustable parameters..... | 9 |

1 Preliminary note

1.1 Symbols used

- ▶ Instruction
- > Reaction, result
- [...] Designation of buttons, switches or indications
- Cross-reference



Important note

Non-compliance can result in malfunctions or interference.

2 Safety instructions

- The device described is a subcomponent for integration into a system.
 - The manufacturer is responsible for the safety of the system.
 - The system manufacturer undertakes to perform a risk assessment and to create a documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the manufacturer of the system.
- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose (→ Functions and features).
- Only use the product for permissible media (→ Technical data).
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the product or incorrect use by the operator.
- Installation, electrical connection, set-up, programming, configuration, operation and maintenance of the product must be carried out by personnel qualified and authorised for the respective activity.
- Protect units and cables against damage.

3 Functions and features

The pressure sensor detects the system pressure of machines and installations.

3.1 Applications

Type of pressure: relative pressure



Information on pressure rating and bursting pressure → data sheet.



Static and dynamic overpressures exceeding the indicated overload pressure are to be avoided by taking appropriate measures.

The indicated bursting pressure must not be exceeded. Even if the bursting pressure is exceeded only for a short time, the unit can be destroyed.

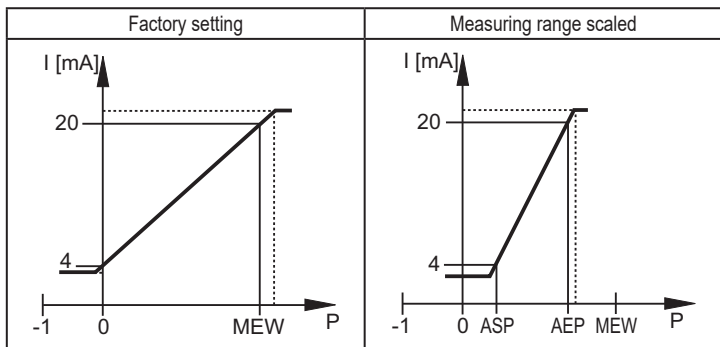
NOTE: Risk of injury!

4 Function

4.1 Processing of the measured signals

The unit converts the system pressure into an analogue output signal (4...20 mA). The measuring range can be scaled to up to 25% of the final value of the measuring range.

- By setting the parameter ASP you define the measured value at which the output signal is 4 mA.
- By setting the parameter AEP you define the measured value at which the output signal is 20 mA.



P = system pressure, MEW = final value of the measuring range

The output signal is between 4 and 20 mA. It is also indicated:

- System pressure above the measuring range: output signal > 20 mA .
- System pressure below the measuring range: output signal between 4 and 3.2 mA.

The unit is ready for operation when delivered. Factory preset: not scaled (ASP = 0 bar; AEP = 100% of the final value of the measuring range).

5 Installation



Ensure that no pressure is applied to the installation while mounting or removing the sensor.

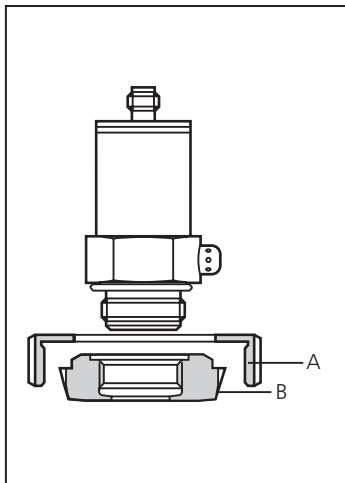
Aseptoflex adapters ensure that the sensor can be connected to different process connections.

(The adapters have to be ordered separately as accessories.)

Mounting operation:

- ▶ Mount the adapter (B) to the sensor.
- ▶ Fix sensor + adapter by means of a coupling nut, a clamp flange or similar (A) to the process connection.

If it is not possible to slide the fixing element (A) down over the top of the sensor: slide it up over the bottom of the sensor before the adapter is mounted.



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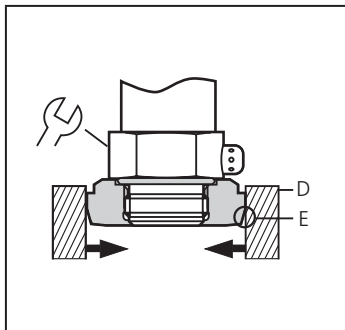
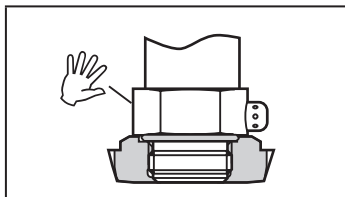
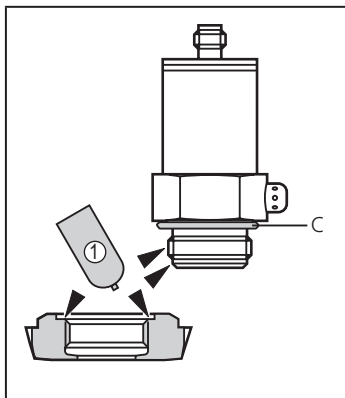
Mounting the Aseptoflex adapter

- ▶ Slightly grease the threads and sealing areas of the sensor and adapter with lubricating paste (1).

The paste must be suitable and approved for the application and compatible with the elastomers used.

Recommendation: Klüber paste UH1 84-201 with USDA-H1 approval for the food industry.

- ▶ Make sure that the O-ring (C) is correctly positioned.
- ▶ Screw the sensor into the adapter until it is hand-tight. Do not damage the sealing chamfers.
- ▶ Clamp sensor and adapter into a clamping device (D). Tighten the clamping device only slightly so that the adapter does not warp. The sealing chamfers (E) must not be damaged.
- ▶ Tighten the sensor using a spanner until you can feel the end stop (corresponding to a maximum tightening torque of 25 Nm / 18 ftlb). Note: Do not overtighten. This can have an adverse effect on the sealing.



NOTE: A guarantee for a long-term stable and maintenance-free fitting with no bug traps in the hygienic sealing of the metal seal (Aseptoflex connection) is only valid for once-only mounting.

Welding adapter

First weld the adapter, then mount the sensor. Follow the instructions included with the adapter.

6 Electrical connection

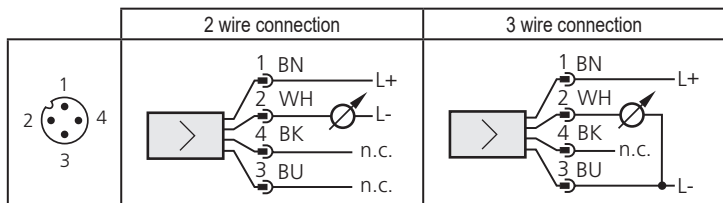


The unit must be connected by a qualified electrician.

The national and international regulations for the installation of electrical equipment must be adhered to.

Voltage supply to EN50178, SELV, PELV.

- ▶ Disconnect power.
- ▶ Connect the unit as follows:



Core colours of ifm sockets:

1 = BN (brown), 2 = WH (white), 3 = BU (blue), 4 = BK (black)

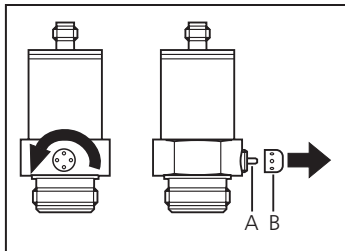
7 Operation

After power on of the supply voltage the unit is in the Run mode (= normal operation). It carries out its measurement and evaluation functions and provides an analogue signal proportional to the system pressure.

7.1 Cleaning of the filter cover

If viscous and residues producing media clog the filter cover of the sensor (and thus reduce the measuring accuracy slightly), you can clean it.

- ▶ Unscrew the filter cover (B) (use a pair of pliers with plastic-covered jaws for this).
- ▶ Clean the cover thoroughly.



The vent (A) should only be cleaned by skilled personnel and with utmost care. Possible medium residues must not be compressed and pressed into the vent. This could clog the filter system and reduce the measuring accuracy of the sensor.

- ▶ Screw the filter cover again tightly.

The sensor is sufficiently protected against harsh ambient conditions (protection IP 67). The protection rating can be increased by a special accessory (order no. E30043).

8 Parameter setting

Parameters can be set before installation and set-up of the unit or during operation.



If you change parameters during operation, the operating principle of the plant will be influenced.

- ▶ Ensure that there will be no malfunctions in your plant.

• Parameter setting with PP2001 → operating instructions enclosed to PP2001.

8.1 Adjustable parameters

| | |
|----------|---|
| ASP | Analogue start point Measured value at which 4 mA is provided. |
| AEP | Analogue end point Measured value at which 20 mA is provided. Minimum distance between ASP and AEP = 25% of the span. |
| HI LO | Min-Max memory for system pressure • HI: displays the highest measured pressure. • LO: displays the lowest measured pressure. |
| COF | Calibration offset The internal measured value (operating value of the sensor) is offset against the real measured value. • Setting range: -5 ... +5% of the value of the span (with scaling as factory setting (ASP = 0 bar and AEP = final value of measuring range) in steps of 0.1% of the value of the span. |
| CAr | Calibration reset Resets the calibration set by COF. |
| dAA | Damping for the analogue output Pressure peaks of short duration or high frequency can be filtered out. dAA-value = response time between pressure change and change of the switching status in milliseconds (ms). • Setting range: 0 (= dAA is not active) / 0.1 s / 0.5 s / 2 s. |
| Uni | Display unit The measured values and values for ASP / AEP can be indicated in the following units: bar, mbar, PSI, MPa, kPa, inH2O (only PL2058), mmWS (only PL2058). |
| diS | Setting of the display d1 / d2 / d3 = update of the measured value every 50ms / 200ms / 600ms. The update interval only refers to the display. ph = display of the measured peak value remains for a short time (peak hold). |

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