

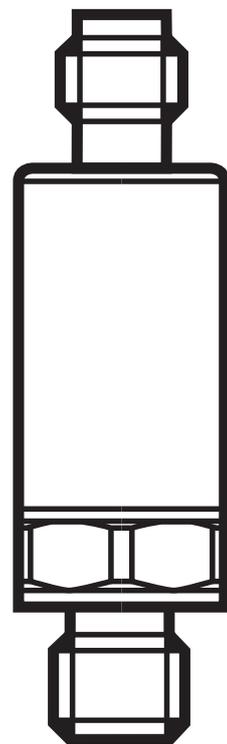
Operating instructions
Electronic pressure sensor
for mobile applications

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PU85xx

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1 Preliminary note

Symbols used

▶ Instructions

→ Cross-reference



Important note

Non-compliance may result in malfunction or interference.



Information

Supplementary note.



CAUTION

Warning of personal injury.

Slight reversible injuries may result.

2 Safety instructions

- The device described is a subcomponent for integration into a system.
 - The manufacturer of the system 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, operation and maintenance of the unit must be carried out by qualified personnel authorised by the machine 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.

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CAUTION

For high medium temperatures, parts of the unit may heat up.

- > Risk of burns
- ▶ Do not touch the unit
- ▶ Protect the housing against contact with flammable substances and unintentional contact.

3 Functions and features

The pressure sensor detects the system pressure and converts it into an analogue output signal.

3.1 Applications

- Type of pressure: relative pressure

Order number	Final value of the measuring range (nominal pressure)		Static pressure resistance (max. permissible pressure)		Bursting pressure	
	bar	psi	bar	psi	bar	psi
PU8504	10	145	25	360	300	4350
PU8503	25	360	65	940	600	8700
PU8523	60	870	150	2175	900	13050
PU8502	100	1450	250	3625	1000	14500
PU8501	250	3625	625	9060	1200	17400
PU8500	400	5800	1000	14500	1700	24655
PU8560	600	8700	1500	21755	2500	36255

$$\text{MPa} = \text{bar} \div 10 / \text{kPa} = \text{bar} \times 100$$

-  Avoid static and dynamic overpressure exceeding the indicated pressure rating 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 may be destroyed. ATTENTION: Risk of injury.
-  For units with a final value of the measuring range of 600 bar, the limits of the pressure cycles over the lifetime apply (→ 7).
-  If the cable length exceeds 30 m or if used outside buildings, there is a risk of overvoltage pulses from external sources. We recommend to use the unit in protected operating environments and to limit overvoltage pulses to max. 500 V.
-  Pressure Equipment Directive (PED):
The units with a final value of the measuring range of 10...400 bar comply with the Pressure Equipment Directive. They are designed for group 2 fluids and are manufactured in accordance with sound engineering practice. Use of media from group 1 fluids on request.
-  Pressure Equipment Directive (PED):
The units with a final value of the measuring range of 600 bar comply with the Pressure Equipment Directive. They are designed for group 2 fluids and manufactured and tested according to Module A.
Use of group 1 fluids on request.



The units are vacuum resistant.

3.2 Use in hydraulic systems of mobile machines

Restrictor in the process connection:

In hydraulic systems of mobile machines, highly dynamic effects such as pressure peaks, cavitation etc. may arise depending on the operating conditions. To reduce these effects on the measuring element of the sensor, a diaphragm attachment is integrated into the process connection.

The specific thread pitch of the diaphragm attachment has the effect of a hole of 0.3 mm.

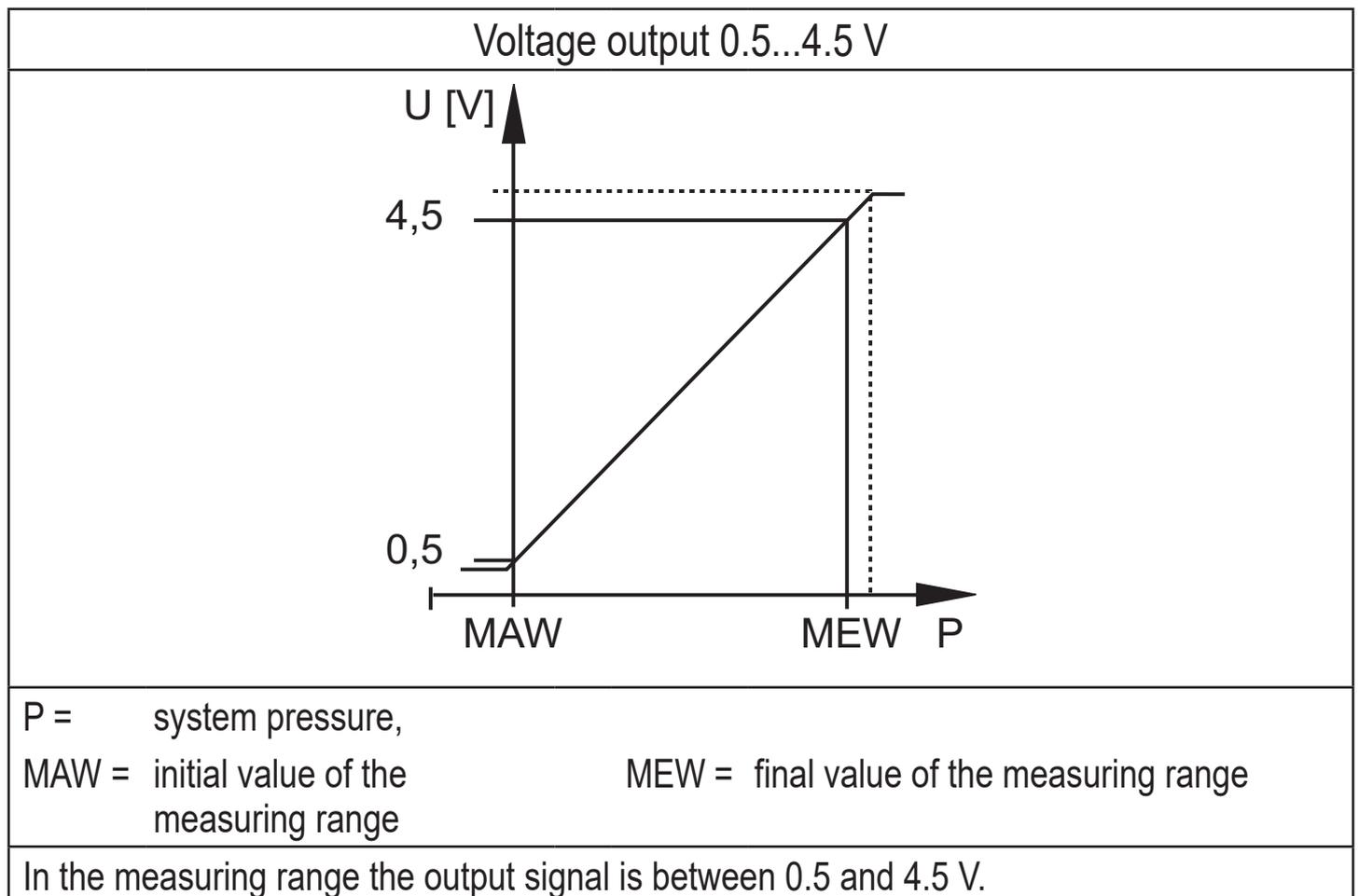
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Please note:

High viscosity may reduce the response time by some milliseconds. Heavy soiling may affect the functionality.

4 Function



5 Installation



Before installing and removing the unit:

Make sure that no pressure is applied to the system.

- ▶ Insert the unit in a G $\frac{1}{4}$ process connection.
- ▶ Tighten firmly. Recommended tightening torque:

Final value of the measuring range in bar	Tightening torque in Nm
10...400	25...35
600	30...50
Depends on lubrication, seal and pressure load.	

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:

PU85xx (0.5...4.5 V)

<table border="1"> <thead> <tr> <th colspan="2">Core colours</th> </tr> </thead> <tbody> <tr> <td>BN</td> <td>brown</td> </tr> <tr> <td>WH</td> <td>white</td> </tr> <tr> <td>BU</td> <td>blue</td> </tr> </tbody> </table>	Core colours		BN	brown	WH	white	BU	blue		
Core colours										
BN	brown									
WH	white									
BU	blue									
		OUT: Analogue output 0.5...4.5 V								
		Colours to DIN EN 60947-5-2								
Example circuits										

7 Technical data



The indication of the following technical data is required by the Pressure Equipment Directive (PED) for units with a final value of the measuring range of 600 bar.

PU8560	
Operating voltage [V].....	8...32 DC
Analogue output	0.5...4.5 V
Medium temperature [°C]	-40...125
Ambient temperature [°C]	-40...100
Storage temperature [°C].....	-40...100
Pressure cycles (min.) over lifetime.....	60 million for 1.2 x nominal pressure
Shock resistance [g]	500 (DIN EN 60068-2-27, 1 ms)
Vibration resistance [g]	20 (DIN EN 60068-2-6, 10...2000 Hz)

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Further information at www.ifm.com