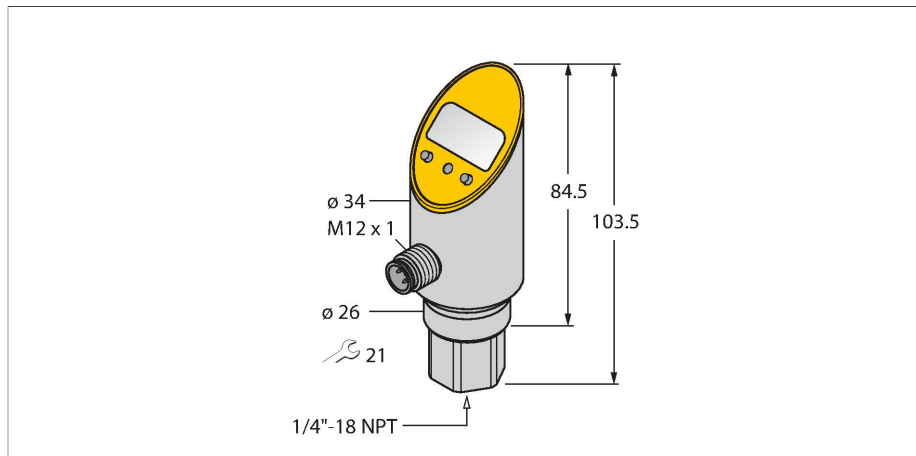


# PS250R-302-LUUPN8X-H1141

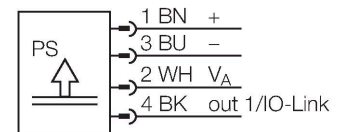
## Pressure sensor – With Voltage Output and PNP/NPN Transistor Switching Output



### Features

- Rigid process connection, non-rotatable body
- Reading of adjusted values without tool
- Recessed pushbutton and keylock for secure programming
- Permanent indication of pressure (bar, psi, kPa, MPa, misc)
- Peak pressure memory
- Pressure range 0...250 bar rel.

### Wiring diagram



### Functional principle

The pressure sensors in the PS product series operate with ceramic measuring cells. As a result of the pressure acting on the ceramic substrate, a signal that is proportional to the pressure is generated and processed electronically. The processed signal is available either as a switching or an analog output signal, depending on the sensor type used. Maximum flexibility thanks to a rigid or rotatable sensor body, a variety of thread types, front-flush or dead-space-free pressure membranes and an accuracy of 0.5 % of full scale guarantee a safe connection to the process.

### Technical data

Type	PS250R-302-LUUPN8X-H1141
ID	6833369
Medium temperature	-40...+85 °C
<b>Pressure range</b>	
Pressure type	Relative pressure
Pressure range	0...250 bar
	0...3625.95 psi
	0...25 MPa
Admissible overpressure	≤ 500 bar
Burst pressure	≥ 500 bar
Response time	< 3 ms
<b>Power supply</b>	
Operating voltage	18...30 VDC
Current consumption	≤ 50 mA
Protective measure	SELV; PELV according to EN 50178
Short-circuit/reverse polarity protection	yes / yes
Insulation class	III
<b>Outputs</b>	
Output 1	Switching output or IO-Link mode
Output 2	Analog output
<b>Switching output</b>	
Communication protocol	IO-Link
Output function	NO/NC, PNP/NPN

## Technical data

Accuracy	± 0.5 % FS BSL
Rated operational current	0.2 A
Switching frequency	≤ 180 Hz
Switching point distance	≥ 0.5 %
Switch point:	(Min. + 0.005 × range)...100 % of full scale
Release point(s)	min up to (SP - 0.005 x range)
Switching cycles	≥ 100 mil.
<b>Analog output</b>	
Voltage output	0...10 V
Load	≥ 2 kΩ
Accuracy LHR	± 0.5 % FS BSL
<b>IO-Link</b>	
IO-Link specification	V 1.0
Transmission physics	corresponds to 3-wire physics (PHY2)
Frame type	2.2
Transmission rate	COM 2 / 38.4 kbps
Process data width	16 bit
Measured value information	14 bit
Switchpoint information	2 bit
Programming	FDT / DTM
Accuracy	± 0.5 % FS BSL
Included in the SIDI GSDML	Yes
Programming options	start/end value analog output; switch/release point; PNP/NPN; NO/NC contact; hysteresis/window mode; damping; pressure unit; peak pressure memory
Housing material	Stainless-steel/Plastic, 1.4305 (AISI 303)
Process connection	1/4" NPT-18 female thread
Pressure connection material	Stainless steel 1.4305 (AISI 303)
Pressure transducer material	Ceramic Al <sub>2</sub> O <sub>3</sub>
Sealing material	FPM spez.
Wrench size pressure connection / coupling nut	21
Max. tightening torque of housing nut	35 Nm
Electrical connection	Connector, M12 × 1
Protection class	IP67 IP69K
Ambient temperature	-40...+80 °C
Storage temperature	-40...+80 °C

## Technical data

Shock resistance	50 g (11 ms) , acc. to IEC 68-2-27
Vibration resistance	20 g (9...2000 Hz), according to IEC 68-2-6
EMV	EN 61000-4-2 ESD:4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 15 V/m EN 61000-4-4 Burst: 2 kV EN 61000-4-5 Surge: 1000 V, 42 Ohm EN 61000-4-6 HF cable bound: 10 V
<b>Reference conditions acc. to IEC 61298-1</b>	
Temperature	15...+25 °C
Atmospheric pressure	860...1060 hPa abs.
Humidity	45...75 % rel.
Auxiliary power	24 VDC
Display	4-digit 7-segment display, rotatable by 180°, disengageable
Switching state	2 × LEDs, Yellow
Unit display	5 x LEDs green (bar, psi, kPa, MPa, misc)
<b>Temperature behaviour</b>	
Temperature coefficient span $T_{KS}$	± 0.15 % of full scale/10 K
Temperature coefficient zero point $T_{K0}$	± 0.15 % of full scale/10 K
MTTF	242 years acc. to SN 29500 (Ed. 99) 40 °C

## Technical data

Type	PS250R-302-LUUPN8X-H1141
ID	6833369
<b>Pressure range</b>	
Pressure type	Relative pressure
Pressure range	0...250 bar
	0...3625.95 psi
	0...25 MPa
Admissible overpressure	≤ 500 bar
Burst pressure	≥ 500 bar
Response time	< 3 ms
<b>Power supply</b>	
Operating voltage	18...30 VDC
Current consumption	≤ 50 mA
Voltage drop at $I_o$	≤ 2 V
Protective measure	SELV; PELV according to EN 50178
Short-circuit/reverse polarity protection	yes / yes

## Technical data

Protection type and class	IP67 IP69K / III
<b>Outputs</b>	
Output 1	Switching output or IO-Link mode
Output 2	Analog output
<b>Switching output</b>	
Communication protocol	IO-Link
Output function	NO/NC, PNP/NPN
Accuracy	± 0.5 % FS BSL
Rated operational current	0.2 A
Switching frequency	≤ 180 Hz
Switching point distance	≥ 0.5 %
Switch point:	(Min. + 0.005 × range)...100 % of full scale
Release point(s)	min up to (SP - 0.005 x range)
Switching cycles	≥ 100 mil.
<b>Analog output</b>	
Voltage output	0...10 V
Load	≥ 2 kΩ
Accuracy LHR	± 0.5 % FS BSL
<b>IO-Link</b>	
IO-Link specification	V 1.0
Programming	FDT / DTM
Transmission physics	corresponds to 3-wire physics (PHY2)
Transmission rate	COM 2 / 38.4 kbps
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Accuracy	± 0.5 % FS BSL
Included in the SIDI GSDML	Yes
<b>Temperature behaviour</b>	
Medium temperature	-40...+85 °C
Temperature coefficient zero point T <sub>k0</sub>	± 0.15 % of full scale/10 K
Temperature coefficient span T <sub>ks</sub>	± 0.15 % of full scale/10 K
<b>Ambient conditions</b>	
Ambient temperature	-40...+80 °C
Storage temperature	-40...+80 °C

## Technical data

Vibration resistance	20 g (9...2000 Hz), according to IEC 68-2-6
Shock resistance	50 g (11 ms) , acc. to IEC 68-2-27
EMV	EN 61000-4-2 ESD:4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 15 V/m EN 61000-4-4 Burst: 2 kV EN 61000-4-5 Surge: 1000 V, 42 Ohm EN 61000-4-6 HF cable bound: 10 V
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Housing material	Stainless-steel/Plastic, 1.4305 (AISI 303)
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Sealing material	FPM spez.
Process connection	1/4" NPT-18 female thread
Wrench size pressure connection / coupling nut	21
Electrical connection	Connector, M12 × 1
Max. tightening torque of housing nut	35 Nm
<b>Reference conditions acc. to IEC 61298-1</b>	
Temperature	15...+25 °C
Atmospheric pressure	860...1060 hPa abs.
Humidity	45...75 % rel.
Auxiliary power	24 VDC
Display	4-digit 7-segment display, rotatable by 180°, disengageable
Switching state	2 × LEDs, Yellow
Unit display	5 x LEDs green (bar, psi, kPa, MPa, misc)
Programming options	start/end value analog output; switch/release point; PNP/NPN; NO/NC contact; hysteresis/window mode; damping; pressure unit; peak pressure memory
MTTF	242 years acc. to SN 29500 (Ed. 99) 40 °C