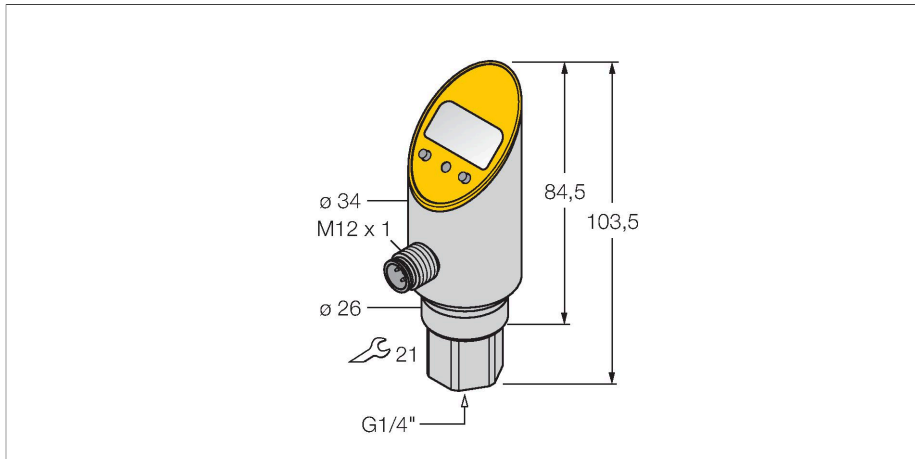


PS100R-301-LUUPN8X-H1141

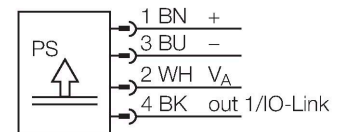
Pressure sensor – With Voltage Output and PNP/NPN Transistor Switching Output



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...100 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	PS100R-301-LUUPN8X-H1141
ID	6833332
Medium temperature	-40...+85 °C
Pressure range	
Pressure type	Relative pressure
Pressure range	0...100 bar
	0...1450.38 psi
	0...10 MPa
Admissible overpressure	≤ 420 bar
Burst pressure	≥ 420 bar
Response time	< 3 ms
Power supply	
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
Outputs	
Output 1	Switching output or IO-Link mode
Output 2	Analog output
Switching output	
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.
Analog output	
Voltage output	0...10 V
Load	≥ 2 kΩ
Accuracy LHR	± 0.5 % FS BSL
IO-Link	
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	G 1/4" female thread
Pressure connection material	Stainless steel 1.4305 (AISI 303)
Pressure transducer material	Ceramic Al ₂ O ₃
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

Tests/approvals

UL registration number	E183243
------------------------	---------

Reference conditions acc. to IEC 61298-1

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 × LEDs green (bar, psi, kPa, MPa, misc)

Temperature behaviour

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	PS100R-301-LUUPN8X-H1141
ID	6833332

Pressure range

Pressure type	Relative pressure
Pressure range	0...100 bar
	0...1450.38 psi
	0...10 MPa
Admissible overpressure	≤ 420 bar
Burst pressure	≥ 420 bar
Response time	< 3 ms

Power supply

Operating voltage	18...30 VDC
Current consumption	≤ 50 mA
Voltage drop at I_o	≤ 2 V

Technical data

Protective measure	SELV; PELV according to EN 50178
Short-circuit/reverse polarity protection	yes / yes
Protection type and class	IP67 IP69K / III
Outputs	
Output 1	Switching output or IO-Link mode
Output 2	Analog output
Switching output	
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.
Analog output	
Voltage output	0...10 V
Load	≥ 2 kΩ
Accuracy LHR	± 0.5 % FS BSL
IO-Link	
IO-Link specification	V 1.0
Programming	FDT / DTM
Transmission physics	corresponds to 3-wire physics (PHY2)
Transmission rate	COM 2 / 38.4 kbps
Process data width	16 bit
Measured value information	14 bit
Switchpoint information	2 bit
Frame type	2.2
Accuracy	± 0.5 % FS BSL
Included in the SIDI GSDML	Yes
Temperature behaviour	
Medium temperature	-40...+85 °C
Temperature coefficient zero point Tk0	± 0.15 % of full scale/10 K
Temperature coefficient span T _{KS}	± 0.15 % of full scale/10 K
Ambient conditions	
Ambient temperature	-40...+80 °C

Technical data

Storage temperature	-40...+80 °C
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
Mechanical data	
Housing material	Stainless-steel/Plastic, 1.4305 (AISI 303)
Pressure connection material	Stainless steel 1.4305 (AISI 303)
Pressure transducer material	Ceramic Al ₂ O ₃
Sealing material	FPM spez.
Process connection	G 1/4" female thread
Wrench size pressure connection / coupling nut	21
Electrical connection	Connector, M12 × 1
Max. tightening torque of housing nut	35 Nm
Reference conditions acc. to IEC 61298-1	
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
Tests/approvals	
Approvals	cULus
UL registration number	E183243
MTTF	242 years acc. to SN 29500 (Ed. 99) 40 °C