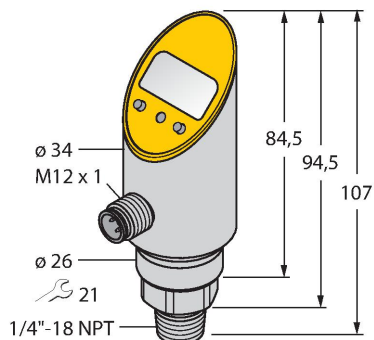


PS400R-303-LI2UPN8X-H1141

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

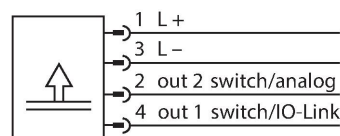
Output 2 Reprogrammable as Switching Output



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...400 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	PS400R-303-LI2UPN8X-H1141
ID	6833412
Medium temperature	-40...+85 °C
Pressure type	Relative pressure
Pressure range	0...400 bar
	0...5801.51 psi
	0...40 MPa
Admissible overpressure	≤ 700 bar
Burst pressure	≥ 700 bar
Response time	< 3 ms
Power supply	
Operating voltage U_s	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 or switching output
Switching output	
Communication protocol	IO-Link

Technical data

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	
Current output	4...20 mA
Voltage output	0...10 V
Load	≤ 0.5 kΩ
Accuracy LHR	± 0.5 % FS BSL
IO-Link	
IO-Link specification	V 1.0
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
Switching point information	2 bit
Frame type	2.2
Programming	FDT / DTM
Accuracy	± 0.5 % FS BSL
Included in the SIDI GSDML	Yes
Programming options	start/end value analog output; switch/ release points; PNP/NPN; NO/NC contact; hysteresis/window mode; damping; pressure unit; peak pressure memory
Mechanical data	
Housing material	Stainless-steel/Plastic, 1.4305 (AISI 303)
Process connection	1/4" NPT-18 male thread
Pressure connection material	Stainless steel 1.4305 (AISI 303)
Material pressure transducer	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

Technical data

Protection class	IP67 IP69K
Environmental conditions	
Ambient temperature	-40...+80 °C
Storage temperature	-40...+80 °C
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	
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°, with switch-off function
Switching state	2 × LEDs, Yellow
Unit display	5 x LEDs green (bar, psi, kPa, MPa, misc)
Temperature behaviour	
Temperature coefficient range TK_s	± 0.15 % of full scale/10 K
Temperature coefficient zero point TK_0	± 0.15 % of full scale/10 K
MTTF	242 years acc. to SN 29500 (Ed. 99) 40 °C

Technical data

Type	PS400R-303-LI2UPN8X-H1141
ID	6833412
Pressure type	Relative pressure
Pressure range	0...400 bar 0...5801.51 psi 0...40 MPa
Admissible overpressure	≤ 700 bar
Burst pressure	≥ 700 bar
Response time	< 3 ms

Technical data

Power supply	
Operating voltage U_s	18...30 VDC
Current consumption	≤ 50 mA
Voltage drop at I_s	≤ 2 V
Protective measure	SELV; PELV according to EN 50178
Short-circuit/reverse polarity protection	yes / yes
Protection class	IP67 IP69K
Insulation class	III
Outputs	
Output 1	Switching output or IO-Link mode
Output 2	Analog or switching 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. + $0.005 \times$ range)...100 % of full scale
Release point(s)	min up to (SP - $0.005 \times$ range)
Switching cycles	≥ 100 mil.
Analog output	
Current output	4...20 mA
Voltage output	0...10 V
Load	≤ 0.5 k Ω
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

Technical data

Temperature behaviour	
Medium temperature	-40...+85 °C
Temperature coefficient zero point TK ₀	± 0.15 % of full scale/10 K
Temperature coefficient range TK _s	± 0.15 % of full scale/10 K
Environmental conditions	
Ambient temperature	-40...+80 °C
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
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Material pressure transducer	Ceramic Al ₂ O ₃
Sealing material	FPM spez.
Process connection	1/4" NPT-18 male 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°, with switch-off function
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 points; PNP/NPN; NO/NC contact; hysteresis/window mode; damping; pressure unit; peak pressure memory

Technical data

Tests/approvals	
MTTF	242 years acc. to SN 29500 (Ed. 99) 40 °C