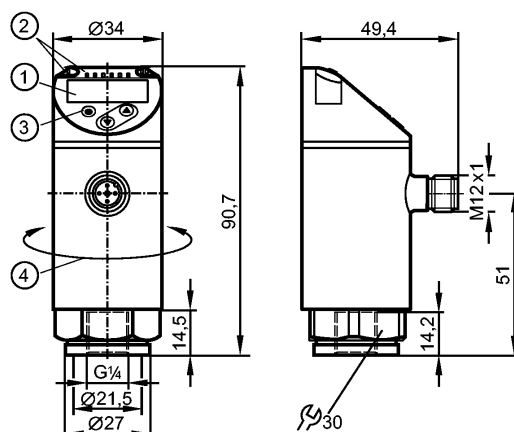


PN2071

PN-250-SER14-MFRKG/US/ /V

Pressure sensors



- 1: 4-digit alphanumeric display / alternating indication of red and green
- 2: LEDs (display unit / switching status)
- 3: Programming button
- 4: Upper part of the housing can be rotated by 345°



Product characteristics

Electronic pressure sensor

M12 connector

Function programmable

Measuring element: metal thin film cell

Process connection: G 1/4 I (according to DIN EN ISO 1179-2)

2 outputs

OUT1 = switching output

OUT2 = switching output or analogue output

4-digit alphanumeric display / alternating indication of red and green

Measuring range: 0...250 bar / 0...3625 psi / 0...25 MPa

Application

Application	Type of pressure: relative pressure Group 2 fluids according to the Pressure Equipment Directive (PED), group 1 fluids on request		
Pressure rating	500 bar	7250 psi	50 MPa
Bursting pressure min.	1200 bar	17400 psi	120 MPa
Vacuum resistance [mbar]	-1000		
Medium temperature [°C]	-25...80		

Electrical data

Electrical design	DC PNP/NPN		
Operating voltage [V]	18...30 DC ¹⁾		
Current consumption [mA]	< 35		
Insulation resistance [MΩ]	> 100 (500 V DC)		
Protection class	III		
Reverse polarity protection	yes		

Outputs

Output	2 outputs OUT1 = switching output OUT2 = switching output or analogue output		
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Pressure sensors

Output function	2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x analogue (4...20 mA / 0...10 V; scaleable 1:5)		
Current rating [mA]	250		
Voltage drop [V]	< 2		
Short-circuit protection	pulsed		
Overload protection	yes		
Switching frequency [Hz]	≤ 500		
Analogue output	4...20 mA; 0...10 V		
Max. load [Ω]	4...20 mA: max. 500		
Min. load resistance [Ω]	0...10 V: min. 2000		

Measuring / setting range

Measuring range	0...250 bar	0...3625 psi	0...25 MPa
Setting range			
Set point, SP	1...250 bar	15...3625 psi	0.1...25 MPa
Reset point, rP	0.5...249.5 bar	10...3620 psi	0.05...24.95 MPa
Analogue start point, ASP	0...200 bar	0...2900 psi	0...20 MPa
Analogue end point, AEP	50...250 bar	725...3625 psi	5...25 MPa
in steps of	0.5 bar	5 psi	0.05 MPa

Accuracy / deviations

Accuracy / deviations (in % of the span) Turn down 1:1	
Switch point accuracy	< ± 0.4
Characteristics deviation *)	< ± 0.25 (BFSL) / < ± 0.5 (LS)
Hysteresis	< ± 0.1
Repeatability **)	< ± 0.1
Long-term stability ***)	< ± 0.05
Temperature coefficients (TEMPCO) in the temperature range -25...80° C (in % of the span per 10 K)	
Greatest TEMPCO of the zero point	0.2
Greatest TEMPCO of the span	0.2

Reaction times

Power-on delay time [s]	0.3		
Min. response time switching output [ms]	< 1.5		
Delay time programmable dS, dr [s]	0...50		
Damping for the switching output (dAP) [s]	0...4		
Damping for the analogue output (dAA) [s]	0...4		
Response time analogue output [ms]	< 3		
Integrated watchdog	yes		

Software / programming

Programming options	hysteresis / window function; NO / NC; on delay, off delay; damping; display unit; current/ voltage output		
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Interfaces

IO-Link device			
Transfer type	COM2		
IO-Link revision	1.1		

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Pressure sensors

SDCI standard	IEC 61131-9
IO-Link device ID	460 d / 00 01 cc h
Profiles	Smart Sensor: Process Data Variable; Device Identification; Device Diagnosis
SIO mode	yes
Required master port class	A
Process data analogue	1
Process data binary	2
Min. process cycle time [ms]	2.3

Environment	
Ambient temperature [°C]	-25...80
Storage temperature [°C]	-40...100
Protection	IP 65 / IP 67

Tests / approvals	
Pressure equipment directive	Sound engineering practice
EMC	DIN EN 61000-6-2 DIN EN 61000-6-3
Shock resistance	DIN EN 60068-2-27 50 g (11 ms)
Vibration resistance	DIN EN 60068-2-6 20 g (10...2000 Hz)
MTTF [Years]	129
UL approval number	J014

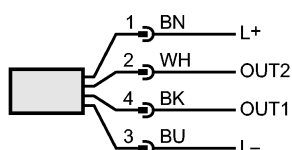
Mechanical data	
Process connection	G ¼ I (according to DIN EN ISO 1179-2)
Materials (wetted parts)	1.4542 (17-4 PH / 630) ²
Housing materials	1.4542 (17-4 PH / 630) ² ; stainless steel (316L / 1.4404); PBT+PC-GF 30; PBT-GF 20; PC
Min. pressure cycles	100 million
Tightening torque [Nm]	25...35 (recommended tightening torque ³)
Weight [kg]	0.217

Displays / operating elements	
Display	Display unit 3 x LED green (bar, psi, MPa) Switching status 2 x LED yellow 4-digit alphanumeric display / alternating indication Measured values of red and green

Electrical connection	
Connection	M12 connector; Gold-plated contacts

Wiring

Core colours
 BK black
 BN brown
 BU blue
 WH white



OUT1: switching output or IO-Link
 OUT2: switching output or 4...20 mA / 0...10 V
 Colours to DIN EN 60947-5-2

Remarks



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PN-250-SER14-MFRKG/US/ /V

Pressure sensors

Remarks

*) BFSL = Best Fit Straight Line / LS = Limit Value Setting
 **) with temperature fluctuations < 10 K
 ***) in% of the span / 6 months
 1) to EN50178, SELV, PELV
 2) Characteristics similar to stainless steel (e.g. 304/1.4301) but higher strength.
 3) Depends on lubrication, seal and pressure rating

Pack quantity

[piece]

1