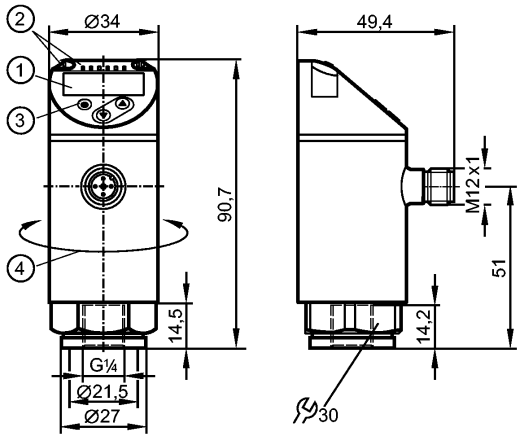
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PN-010-RER14-MFRKG/US/ /V

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: ceramic-capacitive pressure measuring cell				
Process connection: G ¼ 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: -1...10 bar / -14.6...145 psi / -0.1...1 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		75 bar	1087 psi	7.5 MPa
Bursting pressure min.		150 bar	2175 psi	15 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	-1...10 bar	-14.6...145 psi	-0.1...1 MPa
Setting range			
Set point, SP	-0.96...10 bar	-14...145 psi	-0.096...1 MPa
Reset point, rP	-0.98...9.98 bar	-14.2...144.8 psi	-0.098...0.998 MPa
Analogue start point, ASP	-1...8 bar	-14.6...116 psi	-0.1...0.8 MPa
Analogue end point, AEP	1...10 bar	14.6...145 psi	0.1...1 MPa
in steps of	0.02 bar	0.2 psi	0.002 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		
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		463 d / 00 01 cf 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]	138
UL approval number		J012

Mechanical data

Process connection		G ¼ I (according to DIN EN ISO 1179-2)
Materials (wetted parts)		stainless steel (316L / 1.4404); Al2O3 (ceramics); FKM
Housing materials		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 torque²)
Weight	[kg]	0.221

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

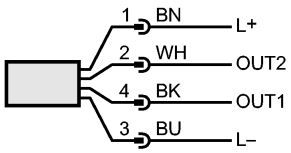
Connection		M12 connector; Gold-plated contacts

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

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]) Depends on lubrication, seal and pressure rating
Pack quantity [piece]	1