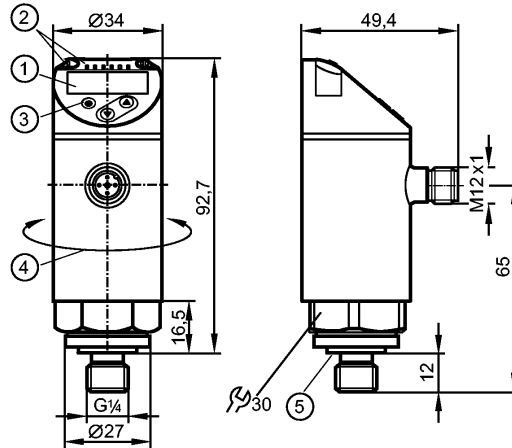


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PN-010-REG14-MFRKG/US/ IV

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°
- 5: Process connection sealing FKM / DIN 3869

Made in Germany



Product characteristics

Electronic pressure sensor
M12 connector
Function programmable
Measuring element: ceramic-capacitive pressure measuring cell
Process connection: G 1/4 A / M5 I (according to DIN EN ISO 1179-2)
2 outputs OUT1 = switching output OUT2 = analogue output (0 bar = 4 mA / 0 V; 10bar = 20 mA / 10 V)
4-digit alphanumeric display / alternating indication of red and green
Measuring range: -1...10 bar / -14.5...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
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 = analogue output (0 bar = 4 mA / 0 V; 10bar = 20 mA / 10 V)
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Pressure sensors

Output function		normally open / closed programmable; 4...20 mA or 0...10 V
Current rating	[mA]	150 (...80°C) / 200 (...60°C) / 250 (...40°C)
Voltage drop	[V]	< 2.5
Short-circuit protection		pulsed
Overload protection		yes
Switching frequency	[Hz]	≤ 170
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	-14.5...145 psi	-0.1...1 MPa
Setting range			
Set point, SP	-0.9...10 bar	-13.5...145 psi	-0.09...1 MPa
Reset point, rP	-0.95...9.95 bar	-14...144.5 psi	-0.095...0.995 MPa
in steps of	0.05 bar	0.5 psi	0.005 MPa

Accuracy / deviations	
Accuracy / deviations (in % of the span)	
Switch point accuracy	< ± 0.5
Characteristics deviation *)	< ± 0.25 (BFSL) / < ± 0.5 (LS)
Hysteresis	< ± 0.25
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] < 3
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
SDCI standard	IEC 61131-9
IO-Link Device ID	431 d / 00 01 af h
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis

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Pressure sensors

SIO mode	yes
Required master port type	A
Process data analogue	1
Process data binary	1
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	97/23/EG: 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)

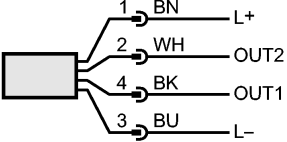
Mechanical data	
Process connection	G ¼ A / M5 I (according to DIN EN ISO 1179-2)
Process connection sealing	FKM (nach DIN 3869)
Materials (wetted parts)	stainless steel (316L / 1.4404); Al2O3 (ceramics); FKM
Housing materials	stainless steel (316L / 1.4404); PBT/PC-GF 30; PBT-GF 20; PC
Switching cycles min.	100 million
Tightening torque [Nm]	25...35 (recommended tightening torque ²)
Weight [kg]	0.257

Displays / operating elements	
Display	Display unit 3 x LED green (bar, psi, MPa) Switching status 1 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: 4...20 mA / 0...10 V
Colours to DIN EN 60947-5-6

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



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Pressure sensors