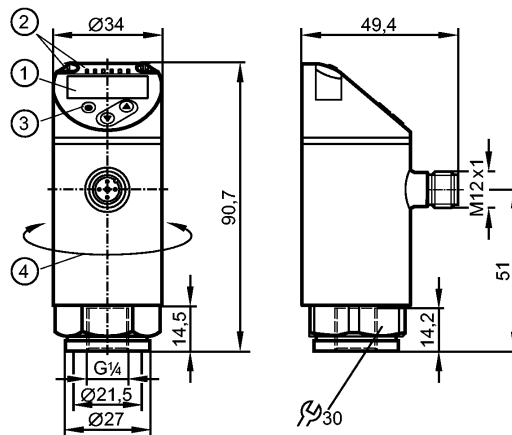


PN3070

PN-400-SER14-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°

Made in Germany



Product characteristics

Electronic pressure sensor
M12 connector
Function programmable
Measuring element: metal thin film cell
Process connection: G ¼ I
2 outputs OUT1 = switching output OUT2 = analogue output
4-digit alphanumeric display / alternating indication of red and green
Measuring range: 0...400 bar / 0...5800 psi / 0...40 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	800 bar	11580 psi	80 MPa
Bursting pressure min.	1700 bar	24650 psi	170 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
Output function	normally open / closed programmable; 4...20 mA or 0...10 V



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PN-400-SER14-MFRKG/US/ /V

Pressure sensors

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	0...400 bar	0...5800 psi	0...40 MPa
Setting range			
Set point, SP	4...400 bar	40...5800 psi	0.4...40 MPa
Reset point, rP	2...398 bar	20...5780 psi	0.2...39.8 MPa
in steps of	2 bar	20 psi	0.2 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
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Interfaces

IO-Link Device	
Transfer type	COM2
IO-Link revision	1.1
SDCI standard	IEC 61131-9
IO-Link Device ID	427 d / 00 01 ab h
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
SIO mode	yes

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Pressure sensors

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 I
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]	0.228

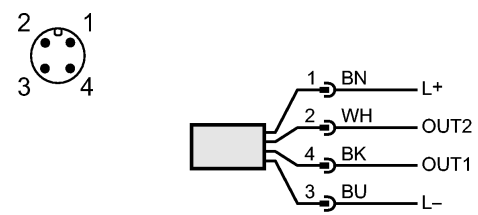
Displays / operating elements	
Display	Display unit 3 x LED green (bar, psi, MPa) Switching status 1 x LED yellow 4-digit alphanumeric display / alternating indication Measured values of red and green

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

Pack quantity [piece]	1
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Pressure sensors