

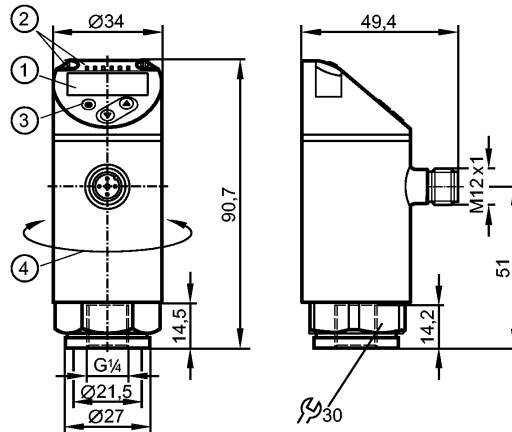


# PN3071

PN-250-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°



## Product characteristics

Electronic pressure sensor

M12 connector

Function programmable

Measuring element: metal thin film cell

Process connection: G  $\frac{1}{4}$  I / M6 I

2 Output

OUT1 = Switching output

OUT2 = Analog output

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

Measuring range: 0...250 bar / 0...3620 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
Operating voltage [V]	18...30 DC <sup>1)</sup>
Current consumption [mA]	< 35
Insulation resistance [M $\Omega$ ]	> 100 (500 V DC)
Protection class	III
Reverse polarity protection	yes

## Outputs

Output	2 Output OUT1 = Switching output OUT2 = Analog output
Output function	normally open / closed programmable; 4...20 mA or 0...10 V



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Pressure sensors

Current rating	[mA]	150; 200 (...60 °C); 250 (...40 °C)
Voltage drop	[V]	< 2.5
Short-circuit protection		yes (non-latching)
Overload protection		yes
Switching frequency	[Hz]	≤ 170
Analog 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...3620 psi	0...25 MPa
Setting range			
Set point, SP	2...250 bar	40...3620 psi	0.2...25 MPa
Reset point, rP	1...249 bar	20...3600 psi	0.1...24.9 MPa
in steps of	1 bar	20 psi	0.1 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 analog output (dAA)	[s] 0...4
Response time analog 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	428 d / 00 01 ac h
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
SIO mode	yes



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Pressure sensors

Required master port class	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	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]	165
UL approval number	J006

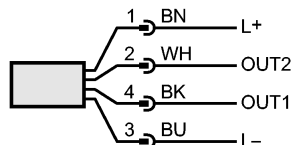
Mechanical data	
Process connection	G ¼ I / M6 I
Materials (wetted parts)	1.4542 (17-4 PH / 630) <sup>2</sup>
Housing materials	1.4542 (17-4 PH / 630) <sup>2</sup> ; stainless steel (316L / 1.4404) (V4A / 316L); PBT+PC-GF 30; PBT-GF 20; PC
Min. pressure cycles	100 million
Tightening torque [Nm]	25...35 (recommended tightening torque <sup>3</sup> )
Restrictor element integrated	no (can be retrofitted)
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 colors  
 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 60947-5-2

### 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
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<sup>2)</sup> Characteristics similar to stainless steel (e.g. 304/1.4301) but higher strength.

<sup>3)</sup> Depends on lubrication, seal and pressure rating

Pack quantity

[piece]

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