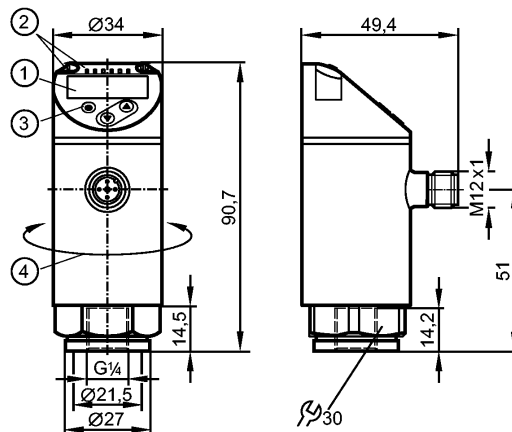


PN2092

PN-100-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: ceramic-capacitive pressure measuring 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...100 bar / 0...1450 psi / 0...10 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	300 bar	4350 psi	30 MPa
Bursting pressure min.	650 bar	9400 psi	65 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...100 bar	0...1450 psi	0...10 MPa
Setting range			
Set point, SP	0.4...100 bar	6...1450 psi	0.04...10 MPa
Reset point, rP	0.2...99.8 bar	4...1448 psi	0.02...9.98 MPa
Analogue start point, ASP	0...80 bar	0...1160 psi	0...8 MPa
Analogue end point, AEP	20...100 bar	290...1450 psi	2...10 MPa
in steps of	0.2 bar	2 psi	0.02 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	461 d / 00 01 cd 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	J013

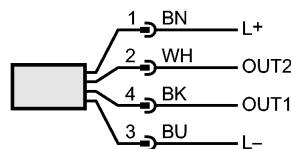
Mechanical data	
Process connection	G ¼ I (according to DIN EN ISO 1179-2)
Materials (wetted parts)	stainless steel (316L / 1.4404); Al2O3 (ceramics); FKM
Housing materials	stainless steel (316L / 1.4404); PBT+PC-GF 30; PBT-GF 20; PC
Min. pressure cycles	100 million
Tightening torque [Nm]	25...35 (recommended tightening torque²)
Weight [kg]	0.261

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

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PN-100-SER14-MFRKG/US/ IV

Pressure sensors

**) 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