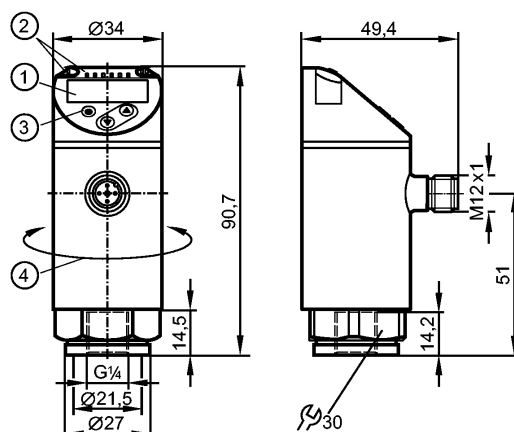


PN2096

PN-2.5-RER14-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

2 outputs

OUT1 = switching output

OUT2 = switching output or analogue output

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

Measuring range: -0.125...2.5 bar / -1.8...36.25 psi / -12.5...250 kPa

Application

Application	Type of pressure: relative pressure Group 2 fluids according to the Pressure Equipment Directive (PED), group 1 fluids on request		
Pressure rating	20 bar	290 psi	2000 kPa
Bursting pressure min.	50 bar	725 psi	5000 kPa
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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PN2096

PN-2.5-RER14-MFRKG/US/ /V

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	-0.125...2.5 bar	-1.8...36.25 psi	-12.5...250 kPa
Setting range			
Set point, SP	-0.11...2.5 bar	-1.6...36.25 psi	-11...250 kPa
Reset point, rP	-0.12...2.49 bar	-1.75...36.1 psi	-12...249 kPa
Analogue start point, ASP	-0.125...2.0 bar	-1.8...29.0 psi	-12.5...200 kPa
Analogue end point, AEP	0.375...2.5 bar	5.45...36.25 psi	37.5...250 kPa
in steps of	0.005 bar	0.05 psi	0.5 kPa

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
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Interfaces

IO-Link device	
Transfer type	COM2
IO-Link revision	1.1

PN2096

PN-2.5-RER14-MFRKG/US/ IV

Pressure sensors

SDCI standard	IEC 61131-9
IO-Link device ID	464 d / 00 01 d0 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	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)
MTTF [Years]	138
UL approval number	J012

Mechanical data

Process connection	G ¼ I
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)
Restrictor element integrated	no (can be retrofitted)
Weight [kg]	0.237

Displays / operating elements

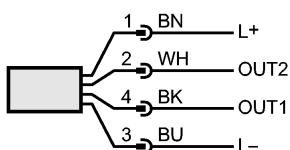
Display	Display unit 3 x LED green (bar, psi, kPa) Switching status 2 x LED yellow 4-digit alphanumeric display / alternating indication Measured values of red and green
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Electrical connection

Connection	M12 connector; Gold-plated contacts
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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



PN2096

PN-2.5-RER14-MFRKG/US/ /V

Pressure sensors

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