

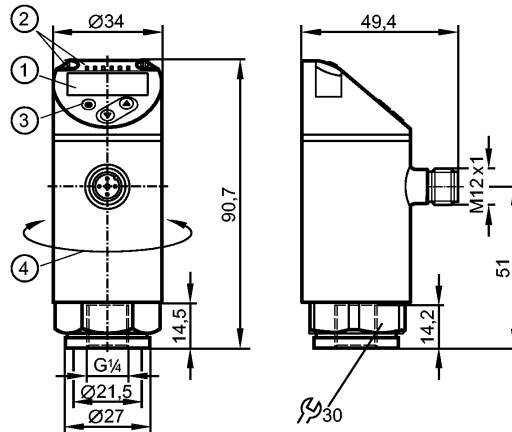


PN2094

PN-010-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 $\frac{1}{4}$ 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: -1...10 bar / -14.6...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/NPN

Operating voltage [V]

18...30 DC ¹⁾

Current consumption [mA]

< 35

Insulation resistance [M Ω]

> 100 (500 V DC)

Protection class

III

Reverse polarity protection

yes

Outputs

Output

2 outputs
OUT1 = switching output
OUT2 = switching output or analogue output



PN2094

PN-010-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	-1...10 bar	-14.6...145 psi	-0.1...1 MPa
Setting range			
Set point, SP	-0.96...10 bar	-14...145 psi	-0.096...1 MPa
Reset point, rP	-0.98...9.98 bar	-14.2...144.8 psi	-0.098...0.998 MPa
Analogue start point, ASP	-1...8 bar	-14.6...116 psi	-0.1...0.8 MPa
Analogue end point, AEP	1...10 bar	14.6...145 psi	0.1...1 MPa
in steps of	0.02 bar	0.2 psi	0.002 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		



PN2094

PN-010-RER14-MFRKG/US/ /V

Pressure sensors

SDCI standard	IEC 61131-9
IO-Link device ID	463 d / 00 01 cf 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	J012

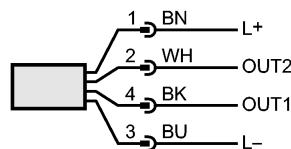
Mechanical data	
Process connection	G ¼ I (according to DIN EN ISO 1179-2)
Materials (wetted parts)	stainless steel (316L / 1.4404); Al2O3 (ceramics); FKM
Housing materials	stainless steel (316L / 1.4404); PBT+PC-GF 30; PBT-GF 20; PC
Min. pressure cycles	100 million
Tightening torque [Nm]	25...35 (recommended tightening torque ²)
Weight [kg]	0.221

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



PN2094

PN-010-RER14-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
---------------	---------	---