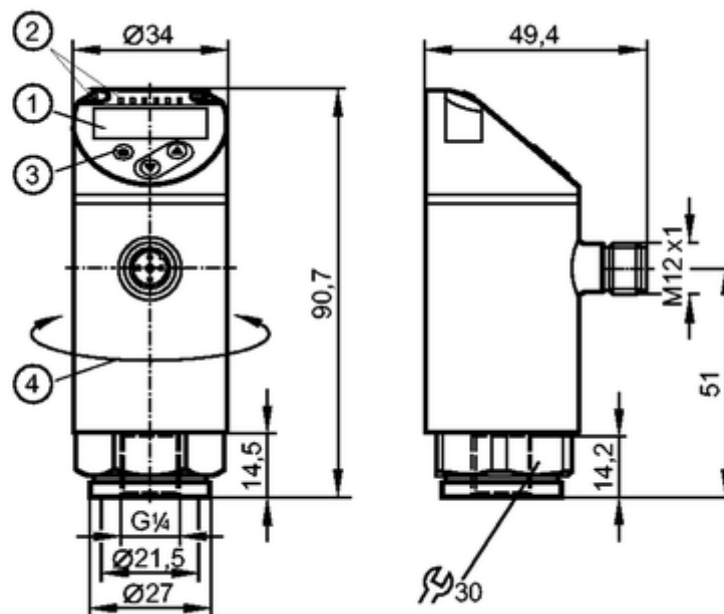


PN2093

PN-025-RER14-MFRKG/US/ /V

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: -1...25 bar / -14.5...362.5 psi / -0.1...2.5 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

150 bar

2175 psi

15 MPa

Bursting pressure min.

350 bar

5075 psi

35 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
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...25 bar	-14.5...362.5 psi	-0.1...2.5 MPa
Setting range			
Set point, SP	-0.9...25 bar	-13...362.5 psi	-0.09...2.5 MPa
Reset point, rP	-0.95...24.95 bar	-13.5...362 psi	-0.095...2.495 MPa
Analogue start point, ASP	-1...20 bar	-14.5...290 psi	-0.1...2 MPa
Analogue end point, AEP	4...25 bar	58...362.5 psi	0.4...2.5 MPa
in steps of	0.05 bar	0.5 psi	0.005 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
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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	462 d / 00 01 ce 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); Al ₂ O ₃ (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]	0.222	

Displays / operating elements

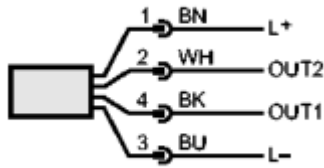
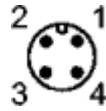
Display	Display unit	3 x LED green (bar, psi, MPa)
	Switching status	2 x LED yellow
	Measured values	4-digit alphanumeric display / alternating indication of red and green

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

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

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