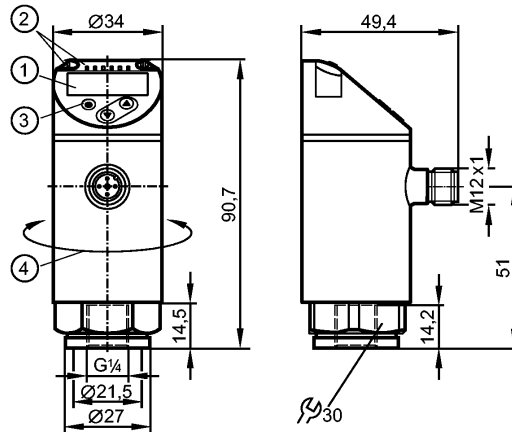


**PN3097**

PN-001BRER14-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°

Made in Germany



**Product characteristics**

Electronic pressure sensor
M12 connector
Function programmable
Measuring element: ceramic-capacitive pressure measuring cell
Process connection: G $\frac{1}{4}$ I
2 outputs OUT1 = switching output OUT2 = analogue output
4-digit alphanumeric display / alternating indication of red and green
Measuring range: 0...1000 mbar / 0...14.5 psi / 0...100 kPa / 0...29.5 inHg

**Application**

Application	Type of pressure: relative pressure Group 2 fluids according to the Pressure Equipment Directive (PED), group 1 fluids on request			
Pressure rating	10000 mbar	145 psi	1000 kPa	290 inHg
Bursting pressure min.	30000 mbar	450 psi	3000 kPa	880 inHg
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 outputs OUT1 = switching output OUT2 = analogue output
Output function	normally open / closed programmable; 4...20 mA or 0...10 V

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**Pressure sensors**

Current rating	[mA]	150 (...80°C) / 200 (...60°C) / 250 (...40°C)
Voltage drop	[V]	< 2.5
Short-circuit protection		pulsed
Overload protection		yes
Switching frequency	[Hz]	≤ 170
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...1000 mbar	0...14.5 psi	0...100 kPa	0...29.5 inHg
Setting range				
Set point, SP	10...1000 mbar	0.1...14.5 psi	1...100 kPa	0.2...29.5 inHg
Reset point, rP	5...995 mbar	0.05...14.45 psi	0.5...99.5 kPa	0.1...29.4 inHg
in steps of	5 mbar	0.05 psi	0.5 kPa	0.1 inHg

**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 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	433 d / 00 01 b1 h
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
SIO mode	yes

**PN3097**

PN-001BRER14-MFRKG/US/ IV

**Pressure sensors**

Required master port type	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	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)

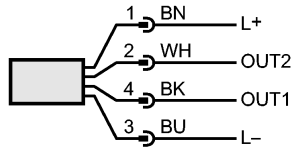
Mechanical data	
Process connection	G ¼ I
Materials (wetted parts)	stainless steel (316L / 1.4404); Al2O3 (ceramics); FKM
Housing materials	stainless steel (316L / 1.4404); PBT/PC-GF 30; PBT-GF 20; PC
Min. pressure cycles	100 million
Tightening torque [Nm]	25...35 (recommended tightening torque <sup>2</sup> )
Weight [kg]	0.231

Displays / operating elements	
Display	Display unit 4 x LED green (bar, psi, kPa, inHg) 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 colours  
 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 60947-5-6

**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
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Pack quantity [piece]	1
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