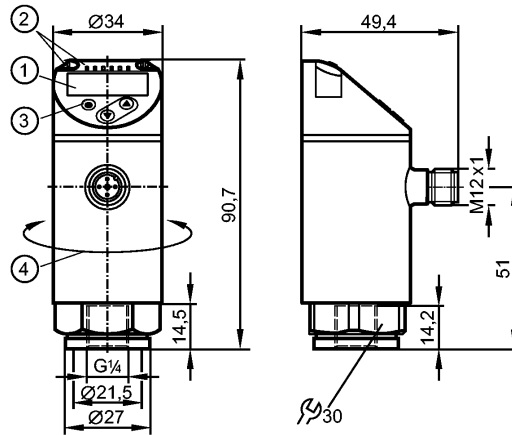




PN2097  
PN-001BRER14-MFRKG/US/V

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

2 outputs

OUT1 = switching output

OUT2 = switching output or analogue output

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

Measuring range: -50...1000 mbar / -0.72...14.50 psi / -5...100 kPa

Application

Application


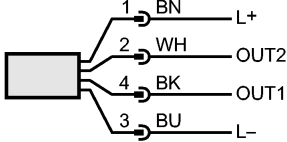
Type of pressure: relative pressure  
Group 2 fluids according to the Pressure Equipment Directive (PED),  
group 1 fluids on request

Pressure rating	10000 mbar	145 psi	1000 kPa
Bursting pressure min.	30000 mbar	450 psi	3000 kPa
Vacuum resistance [mbar]	-1000		
Medium temperature [°C]	-25...80		
Electrical data	DC PNP/NPN		
Electrical design	DC PNP/NPN		
Operating voltage [V]	18...30 DC <sup>1)</sup>		
Current consumption [mA]	< 35		
Insulation resistance [MΩ]	> 100 (500 V DC)		
Protection class	III		
Reverse polarity protection	yes		
Outputs	2 outputs		
Output	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		

**PN2097 - Electronic pressure sensor - eclass: 27201302 / 27-20-13-02**

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	-50...1000 mbar	-0.72...14.50 psi	-5...100 kPa
Setting range			
Set point, SP	-44...1000 mbar	-0.64...14.5 psi	-4.4...100 kPa
Reset point, rP	-48...996 mbar	-0.7...14.44 psi	-4.8...99.6 kPa
Analogue start point, ASP	-50...800 mbar	-0.72...11.6 psi	-5...80 kPa
Analogue end point, AEP	150...1000 mbar	2.18...14.5 psi	15...100 kPa
in steps of	2 mbar	0.02 psi	0.2 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		
Interfaces			
IO-Link device			
Transfer type	COM2		
IO-Link revision	1.1		
SDCI standard	IEC 61131-9		
IO-Link device ID	465 d / 00 01 d1 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		

**PN2097 - Electronic pressure sensor - eclass: 27201302 / 27-20-13-02**

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
<b>Mechanical data</b>		
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> )	
Restrictor element integrated	no (can be retrofitted)	
Weight [kg]	0.238	
<b>Displays / operating elements</b>		
Display	Display unit	4 x LED green (mbar, kPa, psi, inH2O)
	Switching status	2 x LED yellow 4-digit alphanumeric display / alternating indication
	Measured values of red and green	
<b>Electrical connection</b>		
Connection	M12 connector; Gold-plated contacts	
<b>Wiring</b>		
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	
<b>Remarks</b>		
Remarks	<p>*) BFSL = Best Fit Straight Line / LS = Limit Value Setting</p> <p>**) with temperature fluctuations &lt; 10 K</p> <p>**) in% of the span / 6 months</p> <p>1) to EN50178, SELV, PELV</p> <p>2) Depends on lubrication, seal and pressure rating</p>	
Pack quantity [piece]	1	