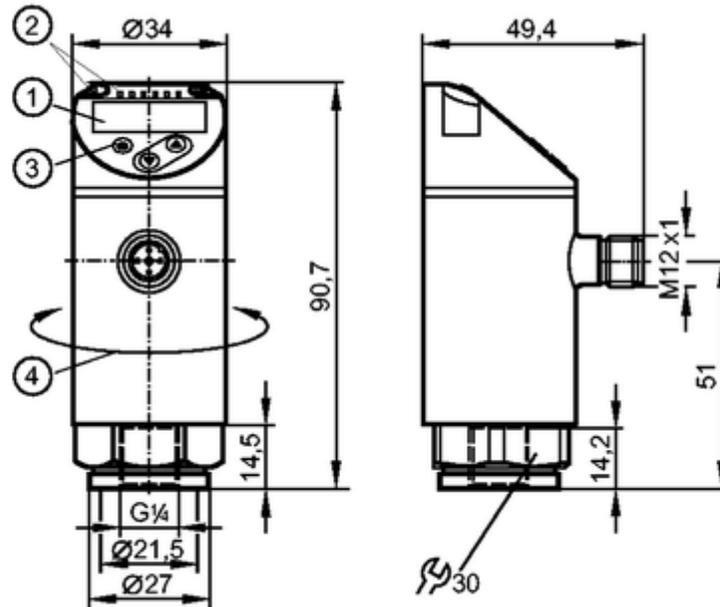


PN7099

PN-1-1BRER14-QFRKG/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 monitor

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

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

Measuring range: -1000...1000 mbar / -14.5...14.5 psi / -100...100 kPa / -29.4...29.4 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

20000 mbar

290 psi

2000 kPa

590 inHg

Bursting pressure min.

50000 mbar

725 psi

5000 kPa

1476 inHg

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
Output function	2 x normally open / closed programmable
Current rating [mA]	150; 200 (...60 °C); 250 (...40 °C)
Voltage drop [V]	< 2.5
Short-circuit protection	pulsed
Overload protection	yes
Switching frequency [Hz]	≤ 170

Measuring / setting range

Measuring range	-1000...1000 mbar	-14.5...14.5 psi	-100...100 kPa	-29.4...29.4 inHg
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Setting range

Set point, SP	-980...1000 mbar	-14.3...14.5 psi	-98...100 kPa	-29...29.6 inHg
Reset point, rP	-990...990 mbar	-14.4...14.4 psi	-99...99 kPa	-29.2...29.4 inHg
in steps of	10 mbar	0.1 psi	1 kPa	0.2 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
Integrated watchdog	yes

Software / programming

Programming options	hysteresis / window function; NO / NC; output polarity; on delay, off delay; damping; display unit
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Interfaces**IO-Link device**

Transfer type	COM2 (38.4 kBaud)
IO-Link revision	1.1
SDCI standard	IEC 61131-9
IO-Link device ID	406 d / 00 01 96 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]	224.01	
UL approval number	J001	

Mechanical data

Process connection	G ¼ I	
Materials (wetted parts)	1.4404; ceramics; FKM	
Housing materials	1.4404; PBT+PC-GF 30; PBT-GF 20; PC	
Switching cycles min.	100 million	
Tightening torque [Nm]	25...35 (recommended tightening torque ²)	
Weight [kg]	0.235	

Displays / operating elements

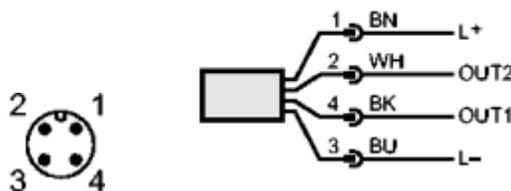
Display	Display unit	4 x LED green (bar, psi, kPa, inHg)
	Switching status	2 x LED yellow
	Measured values	4-digit alphanumeric display / alternating indication of red and green

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
 Colours to DIN EN 60947-5-2

Remarks

Remarks	¹) to EN50178, SELV, PELV [*]) BFSL = Best Fit Straight Line / LS = Limit Value Setting ^{**}) with temperature fluctuations < 10 K ^{***}) in% of the span / 6 months ²) Depends on lubrication, seal and pressure rating
Pack quantity [piece]	1

