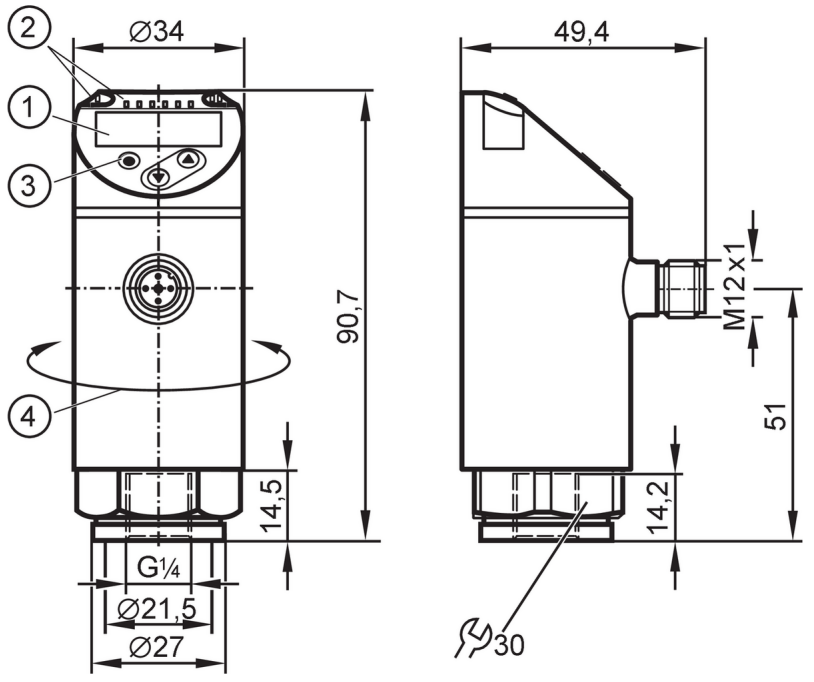
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Pressure sensor with display

PN-1-1BRER14-MFRKG/US/ /V



1 alphanumeric display 4-digit red/green
2 LEDs Display unit / switching status
3 programming button
4 upper part of the housing can be rotated 345°

Product characteristics						
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1					
Measuring range	-1...1 bar	-1000...1000 mbar	-14.5...14.5 psi	-29.5...29.5 inHg	-401...401 inH2O	-100...100 kPa
Process connection	threaded connection G 1/4 internal thread (DIN EN ISO 1179-2)					
Application						
Special feature	Gold-plated contacts					
Measuring element	ceramic-capacitive pressure measuring cell					
Application	for industrial applications					
Media	liquids and gases					
Medium temperature [°C]	-25...80					
Min. burst pressure	30000 mbar	450 psi	3000 kPa			
Pressure rating	10000 mbar	145 psi	1000 kPa			
Vacuum resistance	-1000 mbar	-0.1 MPa				
Type of pressure	relative pressure; vacuum					
Electrical data						
Operating voltage [V]	18...30 DC; (to SELV/PELV)					
Current consumption [mA]	< 35					
Min. insulation resistance [MΩ]	100; (500 V DC)					
Protection class	III					
Reverse polarity protection	yes					
Power-on delay time [s]	0.3					
Integrated watchdog	yes					

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Inputs / outputs						
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1					
Outputs						
Total number of outputs	2					
Output signal	switching signal; analogue signal; IO-Link; (configurable)					
Electrical design	PNP/NPN					
Number of digital outputs	2					
Output function	normally open / normally closed; (parameterisable)					
Max. voltage drop switching output DC [V]	2					
Permanent current rating of switching output DC [mA]	250					
Switching frequency DC [Hz]	< 500					
Number of analogue outputs	1					
Analogue current output [mA]	4...20; (scalable 1:5)					
Max. load [Ω]	500					
Analogue voltage output [V]	0...10; (scalable 1:5)					
Min. load resistance [Ω]	2000					
Short-circuit protection	yes					
Type of short-circuit protection	pulsed					
Overload protection	yes					
Measuring/setting range						
Measuring range	-1...1 bar	-1000...1000 mbar	-14.5...14.5 psi	-29.5...29.5 inHg	-401...401 inH2O	-100...100 kPa
Analogue start point	-1000...600 mbar	-14.5...8.7 psi	-29.5...17.7 inHg	-402...240 inH2O	-100...60 kPa	
Analogue end point	-600...1000 mbar	-8.7...14.5 psi	-17.7...29.5 inHg	-240...402 inH2O	-60...100 kPa	
Factory setting / CMPT = 2						
Set point SP	-985...1000 mbar	-14.3...14.5 psi	-29.2...29.5 inHg	-396...402 inH2O	-98.5...100 kPa	
Reset point rP	-995...990 mbar	-14.45...14.4 psi	-29.4...29.3 inHg	-400...398 inH2O	-99.5...99 kPa	
Min. difference between SP and rP	10 mbar	0.15 psi	0.3 inHg	4 inH2O	1 kPa	
In steps of	5 mbar	0.05 psi	0.1 inHg	2 inH2O	0.5 kPa	
Status_B High Resolution / CMPT = 3						
Set point SP	-987...1000 mbar	-14.32...14.5 psi	-29.2...29.5 inHg	-396...401 inH2O	-98.7...100 kPa	
Reset point rP	-996...992 mbar	-14.44...14.38 psi	-29.4...29.3 inHg	-400...398 inH2O	-99.6...99.2 kPa	
Min. difference between SP and rP	9 mbar	0.12 psi	0.3 inHg	4 inH2O	0.9 kPa	
In steps of	1 mbar	0.01 psi	0.1 inHg	1 inH2O	0.1 kPa	
Accuracy / deviations						
Switch point accuracy [% of the span]	< ± 0,4; (Turn down 1:1)					
Repeatability [% of the span]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)					
Characteristics deviation [% of the span]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)					
Hysteresis deviation [% of the span]	< ± 0,1; (Turn down 1:1)					

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Long-term stability [% of the span]	< ± 0,05; (Turn down 1:1; per 6 months)	
Temperature coefficient zero point [% of the span / 10 K]	< ± 0,2; (-0...80 °C)	
Temperature coefficient span [% of the span / 10 K]	< ± 0,2; (-0...80 °C)	
Notes on the accuracy / deviation	switch point accuracy, linearity error under DNV GL: < ± 1%: < ± 1%	
Response times		
Response time [ms]	< 1.5	
Delay time programmable dS, dr [s]	0...50	
Damping process value dAP [s]	0...4	
Damping for the analogue output dAA [s]	0...4	
Max. response time analogue output [ms]	3	
Software / programming		
Parameter setting options	hysteresis / window; normally open / normally closed; switch-on/ switch-off delay; Damping; Display unit; current/voltage output	
Interfaces		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
SIO mode	yes	
Required master port type	A; (when pin 2 not connected: B)	
Supported DeviceIDs	**Type of operation**	**DeviceID**
	Factory setting / CMPT = 2	467
	Status_B High Resolution / CMPT = 3	983
Note	For further information please see the IODD PDF file under "Downloads"	
Factory setting / CMPT = 2		
Profiles	Smart Sensor - SSP 0	Generic Profiled Sensor
	Function	Device identification
	Function	Process data variable
	Function	Device diagnosis
Min. process cycle time [ms]	2.3	
IO-Link resolution pressure [mbar]	1	
IO-Link process data (cyclical)	**function**	**bit length**
	pressure	14
	binary switching information	2
IO-Link functions (acyclical)	application specific tag	
Status_B High Resolution / CMPT = 3		
Profiles	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
Min. process cycle time [ms]	3	

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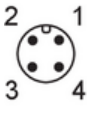
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IO-Link resolution pressure	[mbar]	1	
IO-Link process data (cyclical)		**function**	**bit length**
		pressure	16
		device status	4
		binary switching information	2
IO-Link functions (acyclical)		application specific tag	
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection		IP 65; IP 67	
Tests / approvals			
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		UL approval no.	J012
Pressure Equipment Directive		Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	237.5	
Housing		cylindrical	
Dimensions	[mm]	Ø 34 / L = 90.7	
Materials		stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)		stainless steel (316L/1.4404); Al2O3 (ceramics); FKM	
Min. pressure cycles		100 million	
Tightening torque	[Nm]	25...35; (recommended tightening torque; depends on the lubrication, the seal and the pressure load)	
Process connection		threaded connection G 1/4 internal thread (DIN EN ISO 1179-2)	
Restrictor element integrated		no (can be retrofitted)	
Displays / operating elements			
Display		Display unit	5 x LED, green (mbar, psi, kPa, inH2O, inHg)
		switching status	2 x LED, yellow
		measured values	alphanumeric display, red/green 4-digit
Remarks			
Pack quantity		1 pcs.	

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated

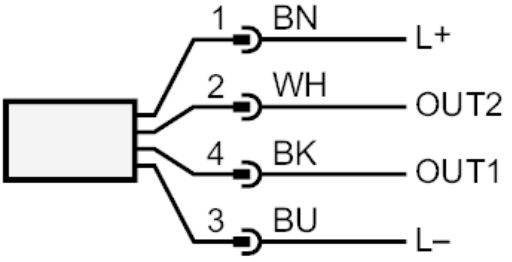


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Connection



OUT1	switching output IO-Link
OUT2	switching output analogue output
	Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white