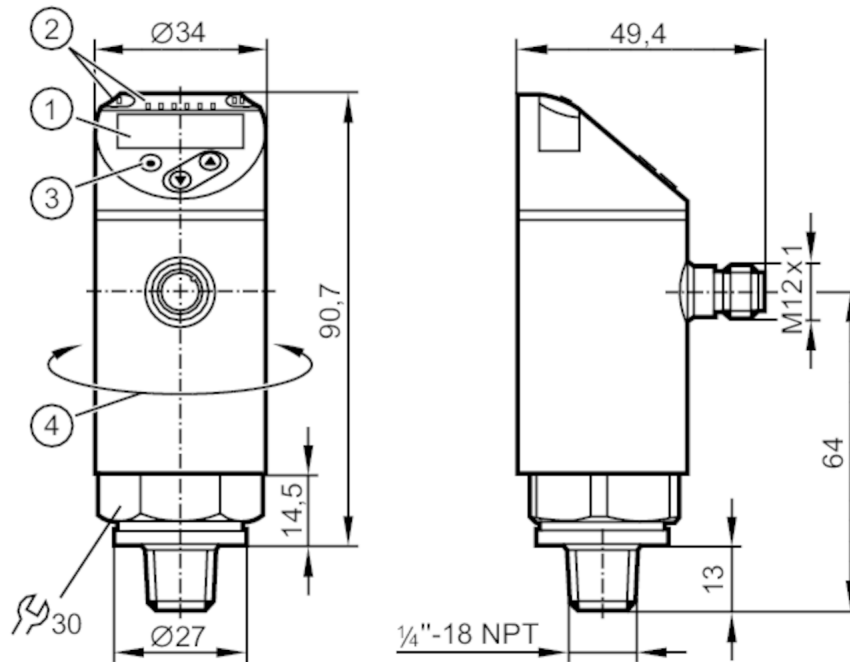


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Pressure sensor with display

PN-001BREN14-MFRKG/US/ IV



- 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 analog outputs: 1				
Measuring range	-0.05...1 bar	-50...1000 mbar	-0.72...14.5 psi	-20.1...401.5 inH2O	-5...100 kPa
Process connection	threaded connection 1/4" NPT external thread				

Application

System	gold-plated contacts				
Measuring element	ceramic-capacitive pressure measuring cell				
Application	for industrial applications				
Media	liquids and gases				
Medium temperature [°C]	-25...80				
Min. bursting pressure	30000 mbar	450 psi		3000 kPa	
Pressure rating	10000 mbar	145 psi		1000 kPa	
Vacuum resistance [mbar]	-1000				
Type of pressure	relative pressure				
MAWP (for applications according to CRN)	10 bar	10000 mbar	145 psi	1000 kPa	

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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
Inputs / outputs	
Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1
Outputs	
Total number of outputs	2
Output signal	switching signal; analog signal; IO-Link; (configurable)
Electrical design	PNP/NPN
Number of digital outputs	2
Output function	normally open / closed; (configurable)
Max. voltage drop switching output DC [V]	2
Permanent current rating of switching output DC [mA]	250
Switching frequency DC [Hz]	< 500
Number of analog outputs	1
Analog current output [mA]	4...20; (scalable 1:5)
Max. load [Ω]	500
Analog voltage output [V]	0...10; (scalable 1:5)
Min. load resistance [Ω]	2000
Short-circuit protection	yes
Type of short-circuit protection	yes (non-latching)
Overload protection	yes
Measuring/setting range	
Measuring range	-0.05...1 bar -50...1000 mbar -0.72...14.5 psi -20.1...401.5 inH2O -5...100 kPa
Analog start point	-50...800 mbar -0.72...11.6 psi -20...321 inH2O -5...80 kPa
Analog end point	150...1000 mbar 2.18...14.5 psi 60.5...401.5 inH2O 15...100 kPa
Factory setting / CMPT = 2	
Set point SP	-44...1000 mbar -0.64...14.5 psi -17.5...401.5 inH2O -4.4...100 kPa
Reset point rP	-48...996 mbar -0.7...14.44 psi -19...400 inH2O -4.4...99.6 kPa
Min. difference between SP and rP	6 mbar 0.06 psi 2 inH2O 0.6 kPa
In steps of	2 mbar 0.02 psi 0.5 inH2O 0.2 kPa

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Status_B High Resolution / CMPT = 3				
Set point SP	-44...1000 mbar	-0.63...14.5 psi	-17.5...401.5 inH2O	-4.4...100 kPa
Reset point rP	-48...996 mbar	-0.69...14.44 psi	-19.2...399.8 inH2O	-4.8...99.6 kPa
Min. difference between SP and rP	5 mbar	0.06 psi	1.7 inH2O	0.5 kPa
In steps of	1 mbar	0.01 psi	0.1 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)			
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%			
Reaction times				
Response time [ms]	< 1.5			
Delay time programmable dS, dr [s]	0...50			
Damping process value dAP [s]	0...4			
Damping for the analog output dAA [s]	0...4			
Max. response time analog output [ms]	3			
Software / programming				
Parameter setting options	hysteresis / window; normally open / 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 class	A; (wenn PIN 2 nicht verbunden: B)			
Supported DeviceIDs	Type of operation	DeviceID		
	Factory setting / CMPT = 2	475		
	Status_B High Resolution / CMPT = 3	991		
Note	For further information please see the IODD PDF file at "Downloads"			

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Pressure sensor with display

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Factory setting / CMPT = 2		
Profiles	Smart Sensor: Process Data Variable; Device Identification, 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 ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)	
Min. process cycle time [ms]	3	
IO-Link resolution pressure [mbar]	0.5	
IO-Link process data (cyclical)	Function	bit length
	pressure	16
	device status	4
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 number	J012
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight [g]	244.5	
Material	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (1.4404 / 316L); Al2O3 (ceramics); FKM	
Min. pressure cycles	100 million	
Tightening torque [Nm]	> 50; (Depends on lubrication, seal and pressure rating)	
Process connection	threaded connection 1/4" NPT external thread	
Restrictor element integrated	no (can be retrofitted)	
Displays / operating elements		
Display	Display unit	4 x LED, green (mbar, kPa, psi, inH2O)
	Switching status	2 x LED, yellow
	Measured values	alphanumeric display, red/green 4-digit
Remarks		
Pack quantity	1 pcs.	

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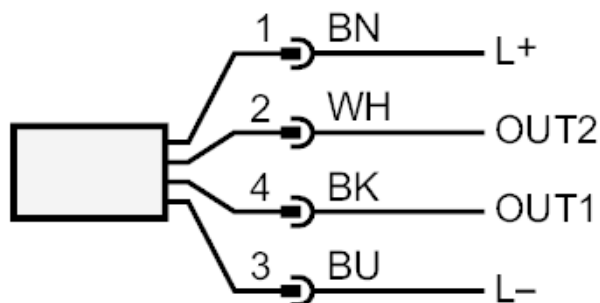
PN-001BREN14-MFRKG/US/ IV

Electrical connection

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



Connection



OUT1	Switching output IO-Link
OUT2	Switching output analog output
	Core colors :
BK =	black
BN =	brown
BU =	blue
WH =	white