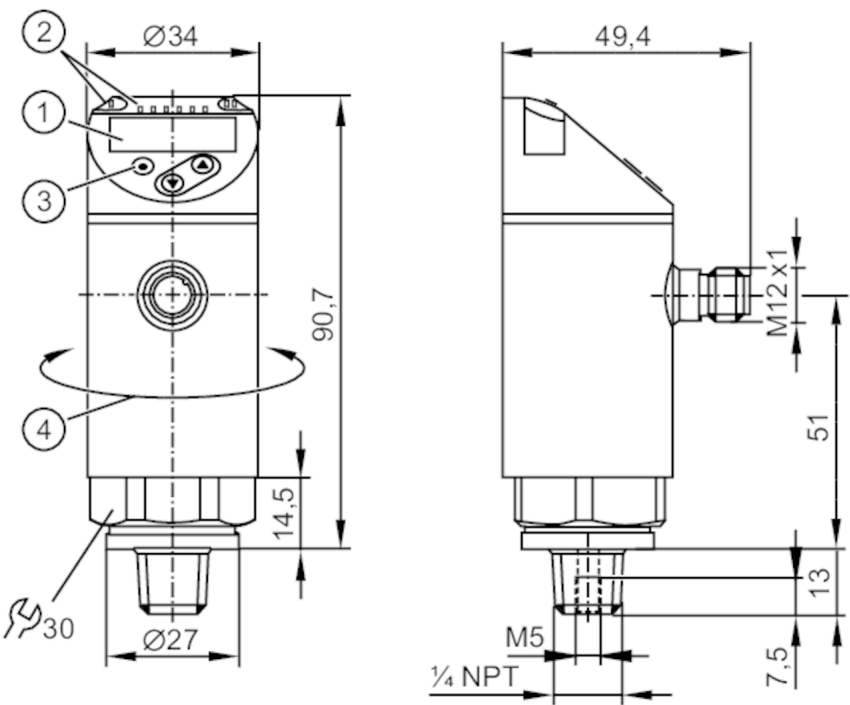




Pressure sensor with display

PN-1-1BREN14-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 analogue outputs: 1					
Measuring range	-1...1 bar	-1000...1000 mbar	-14.5...14.5 psi	-29.5...29.5 inHg	-402...402 inH2O	-100...100 kPa
Process connection	threaded connection 1/4" NPT external thread					
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. bursting pressure	30000 mbar	450 psi			3000 kPa	
Pressure rating	10000 mbar	145 psi			1000 kPa	
Vacuum resistance [mbar]	-1000					
Vacuum resistance [MPa]	-0.1					
Type of pressure	relative pressure; vacuum					
MAWP (for applications according to CRN)	20 bar	20000 mbar	290 psi		2000 kPa	
Electrical data						
Operating voltage [V]	18...30 DC; (to SELV/PELV)					
Current consumption [mA]	< 35					



Pressure sensor with display

PN-1-1BREN14-MFRKG/US/ /V

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 analogue outputs: 1
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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	-402...402 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	< ± 0,4; (Turn down 1:1)
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Pressure sensor with display

PN-1-1BREN14-MFRKG/US/ /V

	[% of the span]	
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%
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	477
	Status_B High Resolution / CMPT = 3	993
Note	For further information please see the IODD PDF file under "Downloads"	
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	



Pressure sensor with display

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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]	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]	246	
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 (96%; 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	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.	

PN2699



Pressure sensor with display

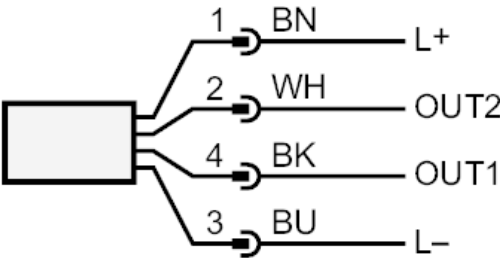
PN-1-1BREN14-MFRKG/US/ IV

Electrical connection

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



Connection



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