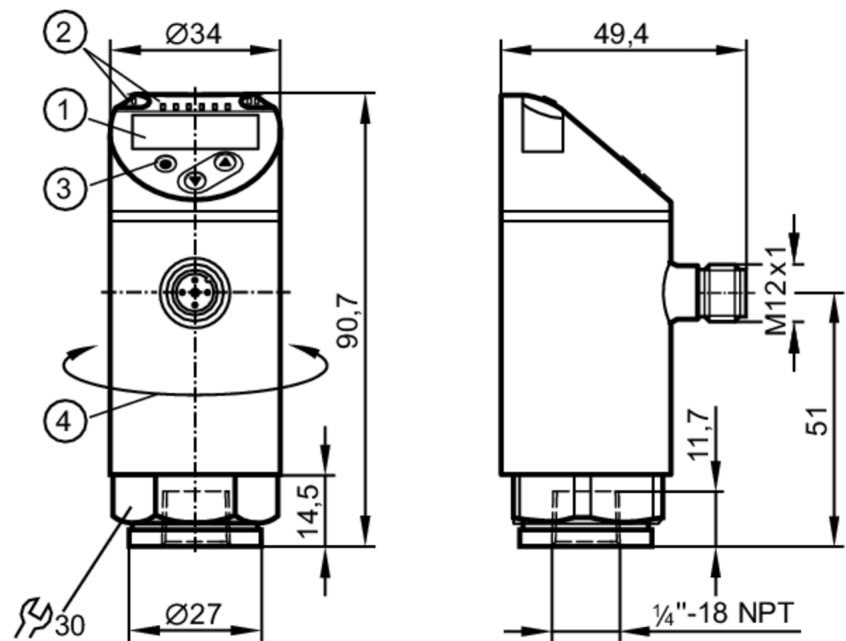




Pressure sensor with display

PN-1-1BREN14-QFRKG/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				
Measuring range	-1...1 bar	-1000...1000 mbar	-14.5...14.5 psi	-29.4...29.4 inHg	-100...100 kPa
Process connection	threaded connection 1/4" NPT internal 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	880 inHg	3000 kPa
Pressure rating	10000 mbar	145 psi	290 inHg	1000 kPa
Type of pressure	relative pressure; vacuum			
MAWP (for applications according to CRN)	20 bar	20000 mbar	290 psi	590.59 inHg 2000 kPa

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



Pressure sensor with display

PN-1-1BREN14-QFRKG/US/ /V

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
------------------------------	------------------------------

Outputs

Total number of outputs	2
Output signal	switching 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]	2.5
Permanent current rating of switching output DC [mA]	150; (200 (...60 °C) 250 (...40 °C))
Switching frequency DC [Hz]	< 170
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	-29.4...29.4 inHg	-100...100 kPa
-----------------	------------	-------------------	------------------	-------------------	----------------

Factory setting / CMPT = 2

Set point SP	-980...1000 mbar	-14.3...14.5 psi	-29...29.6 inHg	-98...100 kPa
Reset point rP	-990...990 mbar	-14.4...14.4 psi	-29.4...29.2 inHg	-99...99 kPa
Min. difference between SP and rP	10 mbar	0.2 psi	0.4 inHg	1 kPa
In steps of	10 mbar	0.1 psi	0.2 inHg	1 kPa

Status_B High Resolution / CMPT = 3

Set point SP	-983...1000 mbar	-14.3...14.5 psi	-29...29.5 inHg	-98...100 kPa
Reset point rP	-993...990 mbar	-14.4...14.4 psi	-29.3...29.2 inHg	-99...99 kPa
Min. difference between SP and rP	10 mbar	0.2 psi	0.3 inHg	1 kPa
In steps of	1 mbar	0.1 psi	0.1 inHg	1 kPa

Accuracy / deviations

Switch point accuracy [X21]	< ± 0,5
Repeatability [X21]	< ± 0,1; (with temperature fluctuations < 10 K)
Characteristics deviation [X21]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting)
Hysteresis deviation [X21]	< ± 0,25
Long-term stability [X21]	< ± 0,05; (per 6 months)
Temperature coefficient zero point [X22]	< ± 0,2; (-0...80 °C)
Temperature coefficient span [X22]	< ± 0,2; (-0...80 °C)

Response times

Response time [ms]	< 3
--------------------	-----



Pressure sensor with display

PN-1-1BREN14-QFRKG/US/ /V

Delay time programmable dS, dr	[s]	0...50
--------------------------------	-----	--------

Software / programming

Parameter setting options	hysteresis / window; normally open / normally closed; switching logic; switch-on/switch-off delay; Damping; Display unit
---------------------------	--

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	457
	Status_B High Resolution / CMPT = 3	636
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 resolution pressure	[MPa]	0.001
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]	1
IO-Link resolution pressure	[MPa]	0.001
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	[ANN]	260



Pressure sensor with display

PN-1-1BREN14-QFRKG/US/ /V

UL approval	UL Approval no.	J001
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	221.5
Materials	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (1.4404 / 316L); ceramics; FKM	
Min. pressure cycles	100 million	
Tightening torque	[Nm]	2...3 turns after hand-fastening; recommended tightening torque; depends on lubrication, seal and pressure rating
Process connection	threaded connection 1/4" NPT internal thread	
Restrictor element integrated	no (can be retrofitted)	

Displays / operating elements		
Display	Display unit	4 x LED, green (bar, psi, kPa, 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: gold-plated



PN7299



Pressure sensor with display

PN-1-1BREN14-QFRKG/US/ /V

Connection



OUT1	switching output
	IO-Link
OUT2	switching output
	colours to DIN EN 60947-5-2
	Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white