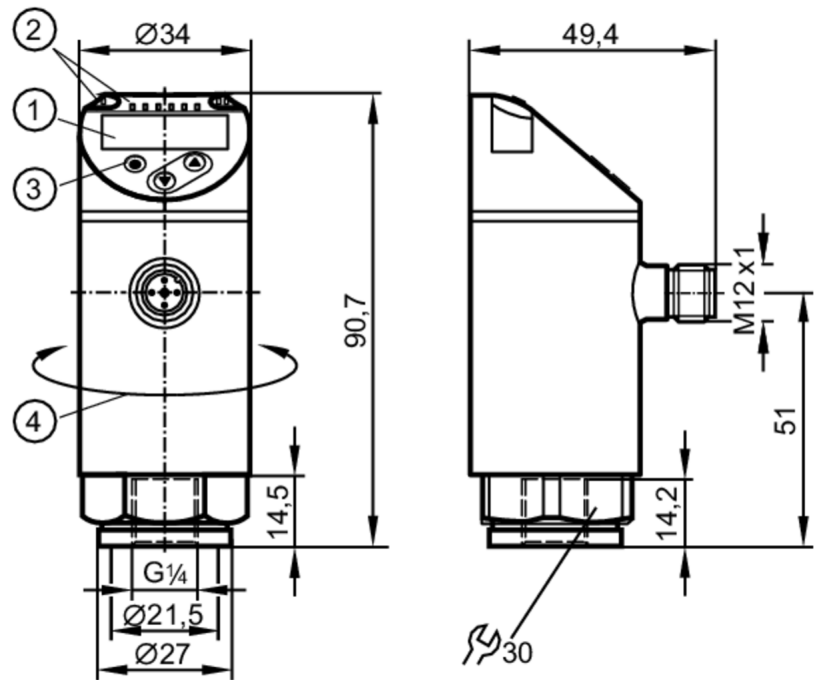


PNU099



Pressure sensor with display

PN-1-1BRER14-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	-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. bursting pressure	30000 mbar	3000 kPa	
Pressure rating	10000 mbar	1000 kPa	
Vacuum resistance [mbar]	-1000		
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		



Pressure sensor with display

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

Integrated watchdog	yes		
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	-100...100 kPa
Set point SP	-987...1000 mbar	-98.7...100 kPa	
Reset point rP	-996...992 mbar	-99.6...99.2 kPa	
Analogue start point	-1000...600 mbar	-100...60 kPa	
Analogue end point	-600...1000 mbar	-60...100 kPa	
Min. difference between SP and rP	9 mbar	0.9 kPa	
In steps of	1 mbar	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)		



Pressure sensor with display

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

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	
Profiles	Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)	
SIO mode	yes	
Required master port type	A; (when pin 2 not connected: B)	
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	
Supported DeviceIDs	Type of operation	DeviceID
	default	1665
Note	For further information please see the IODD PDF file under "Downloads"	
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]	167	
UL approval	UL Approval no.	J012
	File number UL	E174189
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

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

Mechanical data		
Weight	[g]	215.9
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 lubrication, seal and pressure rating)
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, kPa)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, red/green 4-digit

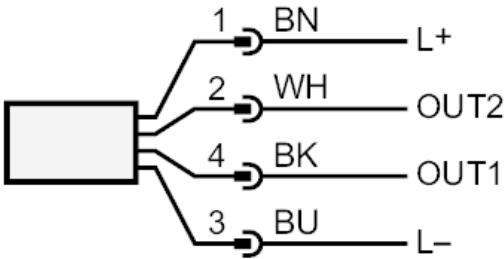
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



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