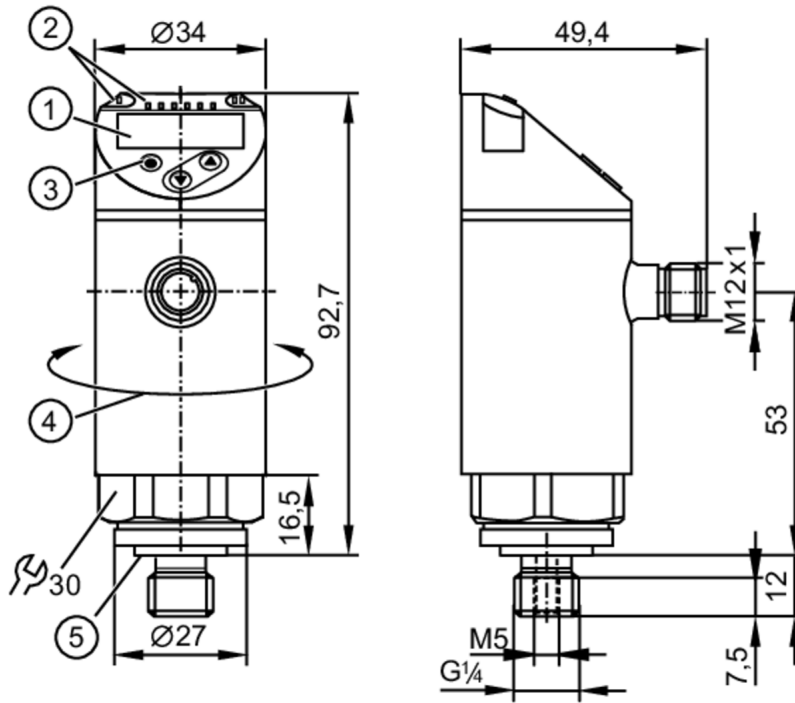


PN2597



Pressure sensor with display

PN-001BREG14-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°
- 5 Sealing



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1			
Measuring range	-0.05...1 bar	-50...1000 mbar	-0.72...14.5 psi	-5...100 kPa
Process connection	threaded connection G 1/4 external thread (DIN EN ISO 1179-2); internal thread:M5			

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		

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		

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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	-0.05...1 bar	-50...1000 mbar	-0.72...14.5 psi	-5...100 kPa
Set point SP	-44...1000 mbar	-0.64...14.5 psi	-4.4...100 kPa	
Reset point rP	-48...996 mbar	-0.7...14.44 psi	-4.8...99.6 kPa	
Analogue start point	-50...800 mbar	-0.72...11.6 psi	-5...80 kPa	
Analogue end point	150...1000 mbar	2.18...14.5 psi	15...100 kPa	
In steps of	2 mbar	0.02 psi	0.2 kPa	

Accuracy / deviations

Switch point accuracy		< ± 0,4; (Turn down 1:1)
	[% of the span]	
Repeatability		< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)
	[% of the span]	
Characteristics deviation		< ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)
	[% of the span]	
Hysteresis deviation		< ± 0,1; (Turn down 1:1)
	[% of the span]	
Long-term stability		< ± 0,05; (Turn down 1:1; per 6 months)
	[% of the span]	
Temperature coefficient zero point		< ± 0,2; (-0...80 °C)
	[% of the span / 10 K]	
Temperature coefficient span		< ± 0,2; (-0...80 °C)
	[% of the span / 10 K]	

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Notes on the accuracy / deviation

switch point accuracy, linearity error under DNV GL: $< \pm 1\%$: $< \pm 1\%$

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
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Interfaces

Communication interface	IO-Link
Transmission type	COM2 (38,4 kBaud)
IO-Link revision	1.1
SDCI standard	IEC 61131-9
Profiles	Smart Sensor - SSP 0 Generic Profiled Sensor Function Device identification Function Process data variable Function Device diagnosis
SIO mode	yes
Required master port type	A
Process data analogue	1
Process data binary	2
Min. process cycle time [ms]	2.3
Supported DeviceIDs	Type of operation default DeviceID 465

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]	263
Housing	cylindrical
Dimensions [mm]	Ø 34 / L = 92.7

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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]	25...35; (recommended tightening torque; depends on the lubrication, the seal and the pressure load)
Process connection	threaded connection G 1/4 external thread (DIN EN ISO 1179-2); internal thread:M5
Process connection sealing	FKM (to DIN 3869)
Restrictor element integrated	no (can be retrofitted)

Displays / operating elements

Display	Display unit	3 x LED, green (bar, psi, MPa)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, red/green 4-digit

Remarks

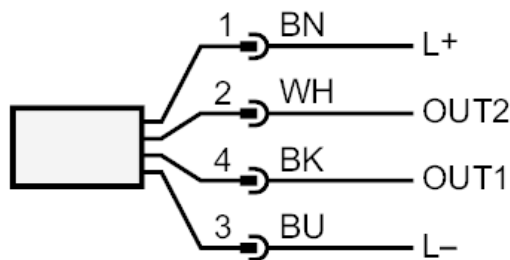
Pack quantity	1 pcs.
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Electrical connection

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



Connection



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