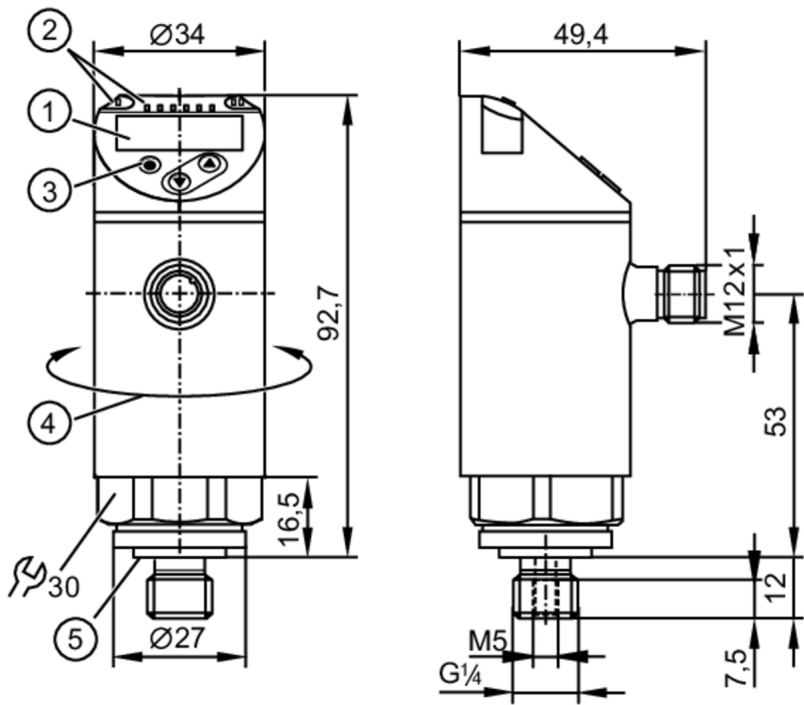


PN3529



Pressure sensor with display

PN-0-1BREG14-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: 1; Number of analogue outputs: 1				
Measuring range	-1...0 bar	-1000...0 mbar	-14.5...0 psi	-29.5...0 inHg	-100...0 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. bursting pressure	50000 mbar	725 psi	1450 inHg	5000 kPa
Pressure rating	20000 mbar	290 psi	590 inHg	2000 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



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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: 1; 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
Number of digital outputs	1
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
Number of analogue outputs	1
Analogue current output [mA]	4...20
Max. load [Ω]	500
Analogue voltage output [V]	0...10
Min. load resistance [Ω]	2000
Short-circuit protection	yes
Type of short-circuit protection	pulsed
Overload protection	yes

Measuring/setting range

Measuring range	-1...0 bar	-1000...0 mbar	-14.5...0 psi	-29.5...0 inHg	-100...0 kPa
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Factory setting / CMPT = 2

Set point SP	-990...0 mbar	-14.4...0 psi	-29.3...0 inHg	-99...0 kPa
Reset point rP	-995...-5 mbar	-14.45...-0.05 psi	-29.4...-0.1 inHg	-99.5...-0.5 kPa
Min. difference between SP and rP	5 mbar	0.1 psi	0.2 inHg	0.5 kPa
In steps of	5 mbar	0.05 psi	0.1 inHg	0.5 kPa

Status_B High Resolution / CMPT = 3

Set point SP	-992...0 mbar	-14.38...0 psi	-29.3...0 inHg	-99.2...0 kPa
Reset point rP	-997...-5 mbar	-14.45...-0.07 psi	-29.4...-0.1 inHg	-99.7...-0.5 kPa
Min. difference between SP and rP	5 mbar	0.08 psi	0.2 inHg	0.5 kPa
In steps of	1 mbar	0.01 psi	0.1 inHg	0.1 kPa

Accuracy / deviations

Switch point accuracy [% of the span]	< ± 0,5
Repeatability [% of the span]	< ± 0,1; (with temperature fluctuations < 10 K)
Characteristics deviation [% of the span]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting)
Hysteresis deviation [% of the span]	< ± 0,25



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Long-term stability [% of the span]	< ± 0,05; (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)	
Response times		
Response time [ms]	< 3	
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	
Process data analogue	1	
Process data binary	1	
Supported DeviceIDs	Type of operation	DeviceID
	Factory setting / CMPT = 2	434
	Status_B High Resolution / CMPT = 3	619
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	1
IO-Link functions (acyclical)	application specific tag	
Status_B High Resolution / CMPT = 3		
Profiles	Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)	
Min. process cycle time [ms]	3	
IO-Link resolution pressure [mbar]	0.5	
IO-Link resolution pressure [MPa]	0.0005	



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IO-Link process data (cyclical)	function	bit length
	pressure	16
	device status	4
	binary switching information	1
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]	226
UL approval	UL Approval no.	J004
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight	[g]	259.5
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 external thread (DIN EN ISO 1179-2); internal thread:M5	
Process connection sealing	FKM (DIN EN ISO 1179-2)	
Restrictor element integrated	no (can be retrofitted)	

Displays / operating elements

Display	Display unit	4 x LED, green (mbar, psi, kPa, inHg)
	switching status	1 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



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Connection



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