

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 analog outputs: 1				
Measuring range	-0.05...1 bar	-50...1000 mbar	-0.72...14.5 psi	-20.1...401.5 inH2O	-5...100 kPa
Process connection	threaded connection G 1/4 external thread (DIN EN ISO 1179-2); Internal thread:M5				

Application

System	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				
Type of pressure	relative pressure; vacuum				

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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				
Integrated watchdog		yes				
Inputs / outputs						
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1				
Outputs						
Total number of outputs		2				
Output signal		switching signal; analog signal; IO-Link; (configurable)				
Electrical design		PNP/NPN				
Number of digital outputs		2				
Output function		normally open / closed; (configurable)				
Max. voltage drop switching output DC	[V]	2				
Permanent current rating of switching output DC	[mA]	250				
Switching frequency DC	[Hz]	< 500				
Number of analog outputs		1				
Analog current output	[mA]	4...20; (scalable 1:5)				
Max. load	[Ω]	500				
Analog voltage output	[V]	0...10; (scalable 1:5)				
Min. load resistance	[Ω]	2000				
Short-circuit protection		yes				
Type of short-circuit protection		yes (non-latching)				
Overload protection		yes				
Measuring/setting range						
Measuring range		-0.05...1 bar	-50...1000 mbar	-0.72...14.5 psi	-20.1...401.5 inH2O	-5...100 kPa
Analog start point		-50...800 mbar	-0.72...11.6 psi	-20...321 inH2O		-5...80 kPa
Analog end point		150...1000 mbar	2.18...14.5 psi	60.5...401.5 inH2O		15...100 kPa
Factory setting / CMPT = 2						
Set point SP		-44...1000 mbar	-0.64...14.5 psi	-17.5...401.5 inH2O		-4.4...100 kPa
Reset point rP		-48...996 mbar	-0.7...14.44 psi	-19...400 inH2O		-4.8...99.6 kPa
Min. difference between SP and rP		6 mbar	0.06 psi	2 inH2O		0.6 kPa
In steps of		2 mbar	0.02 psi	0.5 inH2O		0.2 kPa

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Status_B High Resolution / CMPT = 3				
Set point SP	-44...1000 mbar	-0.63...14.5 psi	-17.5...401.5 inH2O	-4.4...100 kPa
Reset point rP	-48...996 mbar	-0.69...14.44 psi	-19.2...399.8 inH2O	-4.8...99.6 kPa
Min. difference between SP and rP	5 mbar	0.06 psi	1.7 inH2O	0.5 kPa
In steps of	1 mbar	0.01 psi	0.1 inH2O	0.1 kPa
Accuracy / deviations				
Notes on the accuracy / deviation	switch point accuracy, linearity error under DNV GL: $\lt; \pm 1\%$			
Switch point accuracy [% of the span]	$\lt; \pm 0,4$; (Turn down 1:1)			
Repeatability [% of the span]	$\lt; \pm 0,1$; (with temperature fluctuations $\lt; 10\text{ K}$; Turn down 1:1)			
Characteristics deviation [% of the span]	$\lt; \pm 0,25$ (BFSL) / $\lt; \pm 0,5$ (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)			
Hysteresis deviation [% of the span]	$\lt; \pm 0,1$; (Turn down 1:1)			
Long-term stability [% of the span]	$\lt; \pm 0,05$; (Turn down 1:1; per 6 months)			
Temperature coefficient zero point [% of the span / 10 K]	$\lt; \pm 0,2$; (-0...80 °C)			
Temperature coefficient span [% of the span / 10 K]	$\lt; \pm 0,2$; (-0...80 °C)			
Reaction times				
Response time [ms]	$\lt; 1,5$			
Delay time programmable dS, dr [s]	0...50			
Damping process value dAP [s]	0...4			
Damping for the analog output dAA [s]	0...4			
Max. response time analog output [ms]	3			
Software / programming				
Parameter setting options	hysteresis / window; normally open / 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 class	A; (wenn PIN 2 nicht verbunden: B)			
Supported DeviceIDs	Type of operation	DeviceID		
	Factory setting / CMPT = 2	465		
	Status_B High Resolution / CMPT = 3	976		
Note	For further information please see the IODD PDF file at "Downloads"			



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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	
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]	0.5	
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 number	J012
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight [g]	263	
Material	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (1.4404 / 316L); 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	3 x LED, green (bar, psi, MPa)
	Switching status	2 x LED, yellow
	Measured values	alphanumeric display, red/green 4-digit

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Remarks

Pack quantity

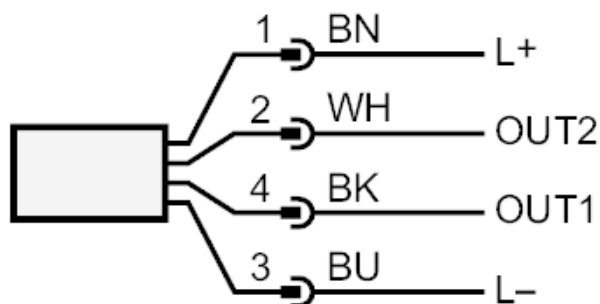
1 pcs.

Electrical connection

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



Connection



OUT1 Switching output
 IO-Link

OUT2 Switching output
 analog output

Core colors :

BK = black
BN = brown
BU = blue
WH = white