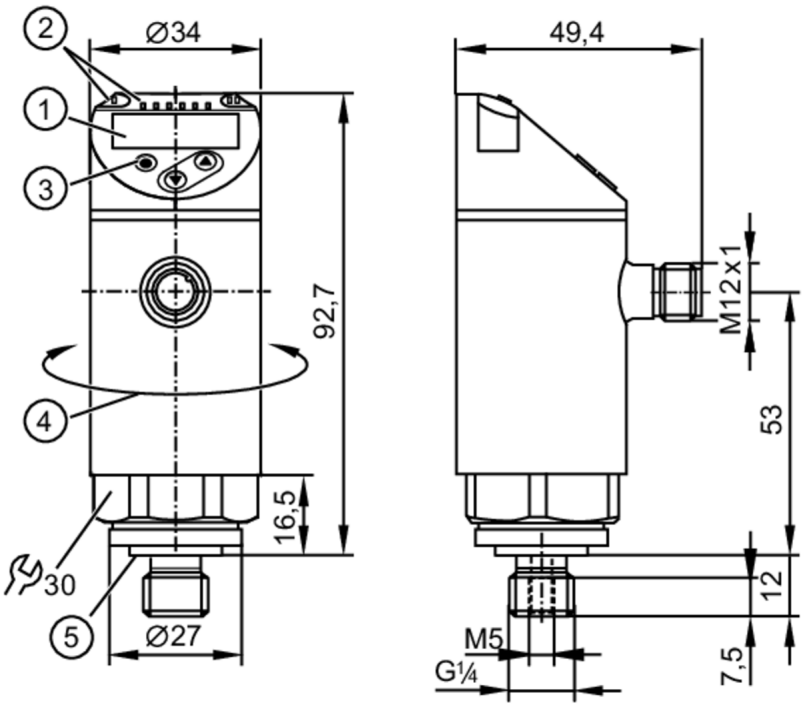
PN7599

Pressure sensor with display

PN-1-1BREG14-QFRKG/US/ /V



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				
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 G 1/4 external thread 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	30000 mbar	450 psi	880 inHg	3000 kPa	
Pressure rating	10000 mbar	145 psi	290 inHg	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				

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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	0.1 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	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
Long-term stability	[% of the span]	< ± 0,05; (per 6 months)
Temperature coefficient zero point		< ± 0,2; (-25...80 °C)

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[% of the span / 10 K]		
Temperature coefficient span [% of the span / 10 K]		< ± 0,2; (-25...80 °C)
Response times		
Response time [ms]		< 3
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)
Process data analogue		1
Process data binary		2
Supported DeviceIDs	**Type of operation**	**DeviceID**
	Factory setting / CMPT = 2	406
	PN7009	314
	Status_B High Resolution / CMPT = 3	604
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]		0.0001
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]		0.0001
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

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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]	260	
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]	259.5	
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]	25...35; (recommended tightening torque; depends on lubrication, seal and pressure rating)	
Process connection		threaded connection G 1/4 external thread internal thread:M5	
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

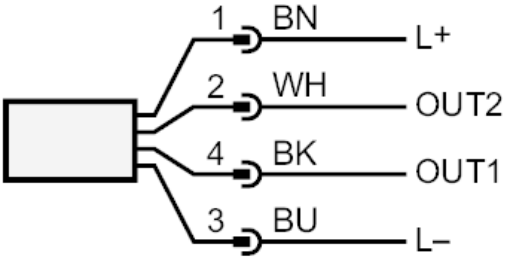


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Connection



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