

# PE2599



## Pressure sensor with display

PE-1-1BREG14-MFRKG/US/ IE



- 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



### Application

Measuring element	ceramic-capacitive pressure measuring cell		
Application	for industrial applications		
Media	group 2 fluids according to the Pressure Equipment Directive (PED); group 1 fluids on request		
Medium temperature [°C]	-25...80		
Pressure rating	145 psi	1000 kPa	10000 mbar
Min. bursting pressure	435 psi	3000 kPa	30000 mbar
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		

### Electrical data

Operating voltage [V]	18...30 DC; (according to EN 50178 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 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		-14.5...14.5 psi	-100...100 kPa -1000...1000 mbar
Set point SP		-14.3...14.5 psi	-98.5...100 kPa -985...1000 mbar
Reset point rP		-14.45...14.4 psi	-99.5...99 kPa -995...990 mbar
Analogue start point		-14.5...8.7 psi	-100...60 kPa -1000...600 mbar
Analogue end point		-8.7...14.5 psi	-60...100 kPa -600...1000 mbar
In steps of		0.05 psi	0.5 kPa 5 mbar
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; (-25...80 °C)	
Temperature coefficient span	[% of the span / 10 K]	0,2; (-25...80 °C)	

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Response times		
Response time	[ms]	< 1.5
Delay time programmable dS, dr	[s]	0...50
Damping for the switching output 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	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
IO-Link device ID	467 d / 00 01 d3 h	
Profiles	Smart Sensor: Process Data Variable; Device Identification, 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
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]	171
UL approval	UL Approval no.	J012
Pressure Equipment Directive	Sound Engineering Practice; can be used for group 2 fluids; group 1 fluids on request	

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Mechanical data	
Weight [g]	260.6
Materials	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC; EPDM
Materials (wetted parts)	stainless steel (1.4404 / 316L); Al2O3 (99.9 %; ceramics); EPDM
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; DIN EN ISO 1179-2
Process connection sealing	EPDM
Restrictor element integrated	no (can be retrofitted)

Displays / operating elements		
Display	Display unit	5 x LED, green (mbar, psi, kPa, inH2O, 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; Contacts: gold-plated



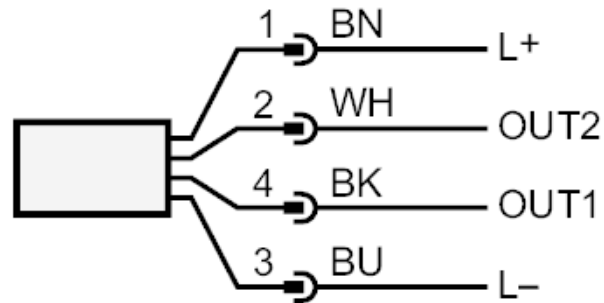
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### Connection



OUT1            switching output or IO-Link  
OUT2            switching output or analogue output  
                  colours to DIN EN 60947-5-2

Core colours :

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