

PN2514



Pressure sensor with display

PN-016-REG14-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	-1...16 bar	-14.6...232 psi	-0.1...1.6 MPa
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	150 bar	2200 psi	15 MPa
Pressure rating	85 bar	1250 psi	8.5 MPa
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	-1...16 bar	-14.6...232 psi	-0.1...1.6 MPa
Set point SP	-0.87...16 bar	-12.6...232.1 psi	-0.087...1.6 MPa
Reset point rP	-0.95...15.92 bar	-13.8...230.9 psi	-0.095...1.592 MPa
Analogue start point	-1...12.8 bar	-14.5...185.6 psi	0.1...1.28 MPa
Analogue end point	2.2...16 bar	31.9...232.1 psi	0.22...1.6 MPa
Min. difference between SP and rP	0.08 bar	1.2 psi	0.008 MPa
In steps of	0.01 bar	0.1 psi	0.001 MPa

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; (-0...80 °C)
Temperature coefficient span		< ± 0,2; (-0...80 °C)

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	[% of the span / 10 K]	
Notes on the accuracy / deviation		switch point accuracy, linearity error under DNV GL: $\lt; \pm 1\%$: $\lt; \pm 1\%$
Response 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 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
Profiles	Smart Sensor - SSP 3.1 Common - I&D	Measuring Sensor Identification and Diagnosis
SIO mode		yes
Required master port type		A; (when pin 2 not connected: B)
Min. process cycle time	[ms]	3
IO-Link resolution pressure	[bar]	0.002
IO-Link process data (cyclical)	function pressure device status binary switching information	bit length 16 4 2
IO-Link functions (acyclical)		application specific tag
Supported DeviceIDs	Type of operation default	DeviceID 1202
Note		For further information please see the IODD PDF file under "Downloads"
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]	167
UL approval	UL approval no. File number UL	J012 E174189
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]	271.4
Housing	cylindrical
Dimensions [mm]	Ø 34 / L = 92.7
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 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 (DIN EN ISO 1179-2)
Restrictor element integrated	no (can be retrofitted)

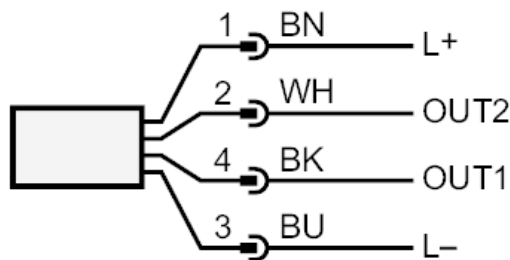
Displays / operating elements		
Display	Display unit	3 x LED, green (bar, psi, MPa)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, red/green 4-digit

Remarks	
Pack quantity	1 pcs.

Electrical connection
 Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



Connection



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