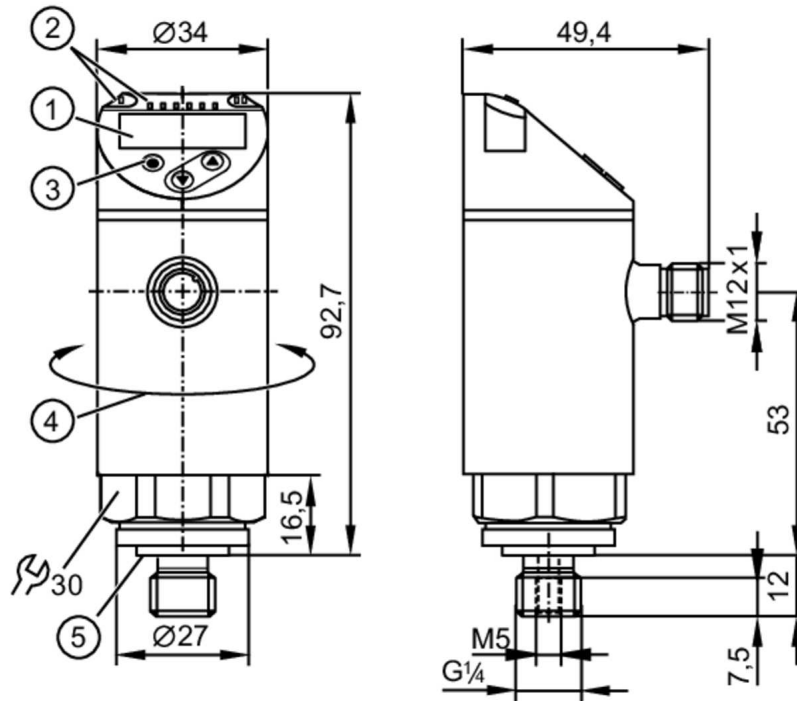


PN2514



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 analog outputs: 1		
Measuring range	0...16 bar	0...232 psi	0...1.6 MPa
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	150 bar	2200 psi	15 MPa
Pressure rating	85 bar	1250 psi	8.5 MPa
Vacuum resistance [mbar]	-1000		
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		

PN2514



Pressure sensor with display

PN-016-REG14-MFRKG/US/ IV

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
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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...16 bar	0...232 psi	0...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
Analog start point	-1...12.8 bar	-14.5...185.6 psi	0.1...1.28 MPa
Analog 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)

PN2514



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PN-016-REG14-MFRKG/US/ IV

	[% of the span / 10 K]									
Notes on the accuracy / deviation		switch point accuracy, linearity error under DNV GL: $\lt; \pm 1\%$: $\lt; \pm 1\%$								
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								
Profiles		Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)								
SIO mode		yes								
Required master port class		A; (when pin 2 not connected: B)								
Min. process cycle time	[ms]	3								
IO-Link resolution pressure	[bar]	0.2								
IO-Link process data (cyclical)		<table border="1"><thead><tr><th>Function</th><th>bit length</th></tr></thead><tbody><tr><td>pressure</td><td>16</td></tr><tr><td>device status</td><td>4</td></tr><tr><td>binary switching information</td><td>2</td></tr></tbody></table>	Function	bit length	pressure	16	device status	4	binary switching information	2
Function	bit length									
pressure	16									
device status	4									
binary switching information	2									
IO-Link functions (acyclical)		application specific tag								
Supported DeviceIDs		<table border="1"><thead><tr><th>Type of operation</th><th>DeviceID</th></tr></thead><tbody><tr><td>default</td><td>1202</td></tr></tbody></table>	Type of operation	DeviceID	default	1202				
Type of operation	DeviceID									
default	1202									
Note		For further information please see the IODD PDF file at "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 number J012 File number UL E174189								
Pressure equipment directive		sound engineering practice; can be used for group 2 fluids; group 1 fluids on request								

PN2514



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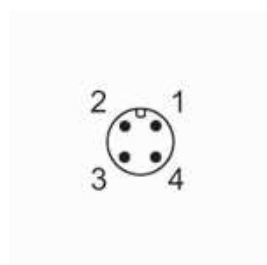
Mechanical data	
Weight [g]	271.4
Material	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC
Materials (wetted parts)	stainless steel (1.4404 / 316L); Al2O3 (ceramics); FKM
Min. pressure cycles	100 million
Tightening torque [Nm]	25...35; (recommended tightening torque; Depends on lubrication, 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

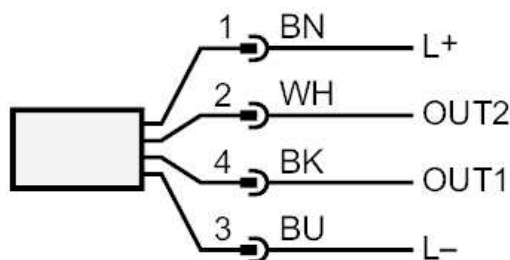
Remarks	
Pack quantity	1 pcs.

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