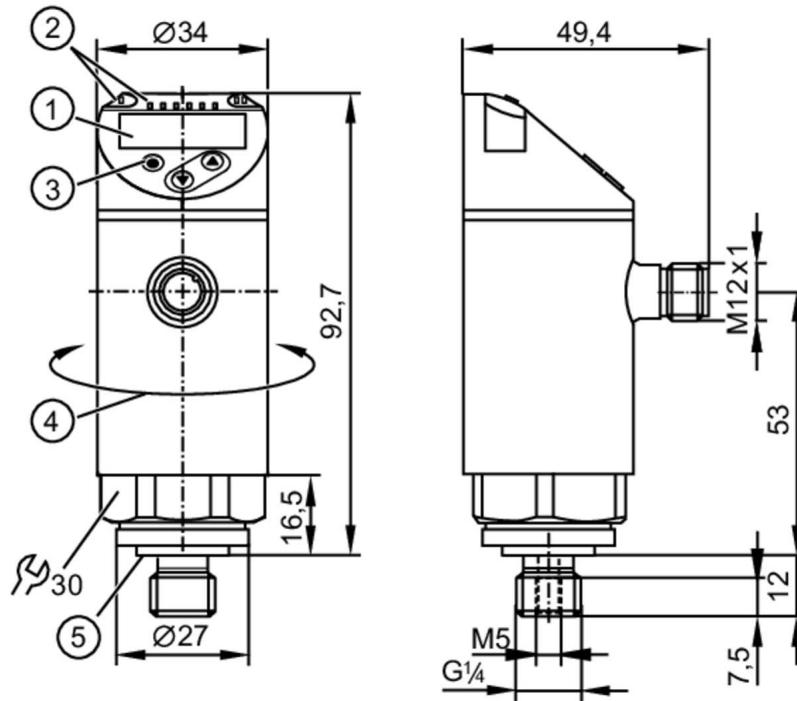


PN2512



Pressure sensor with display

PN-160-SEG14-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...160 bar	0...2320 psi	0...16 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		
Conditionally suitable for	use in gases at pressures > 25 bar only on request		
Medium temperature [°C]	-25...80		
Min. bursting pressure	750 bar	10900 psi	75 MPa
Pressure rating	350 bar	5100 psi	35 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		

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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; 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...160 bar	0...2320 psi	0...16 MPa
Set point SP	1.3...160 bar	19...2321 psi	0.13...16 MPa
Reset point rP	0.5...159.2 bar	7...2309 psi	0.05...15.92 MPa
Analog start point	0...128 bar	0...1856 psi	0...12.8 MPa
Analog end point	32...160 bar	464...2321 psi	3.2...16 MPa
Min. difference between SP and rP	0.8 bar	12 psi	0.08 MPa
In steps of	0.1 bar	1 psi	0.01 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)

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Temperature coefficient span [% of the span / 10 K]	< ± 0,2; (-0...80 °C)
Notes on the accuracy / deviation	switch point accuracy, linearity error under DNV GL: < ± 1%: < ± 1%

Reaction times

Response time [ms]	< 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
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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><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><thead><tr><th>Type of operation</th><th>DeviceID</th></tr></thead><tbody><tr><td>default</td><td>1200</td></tr></tbody></table>	Type of operation	DeviceID	default	1200				
Type of operation	DeviceID								
default	1200								
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)
UL approval	UL approval number	J020
	File number UL	E174189
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

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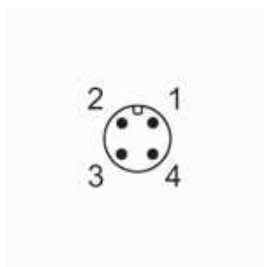
Mechanical data	
Weight [g]	309
Material	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC
Materials (wetted parts)	stainless steel (1.4404 / 316L); Al2O3 (ceramics); FKM
Min. pressure cycles	100 million
Tightening torque [Nm]	25...35; (recommended tightening torque; Depends on lubrication, 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

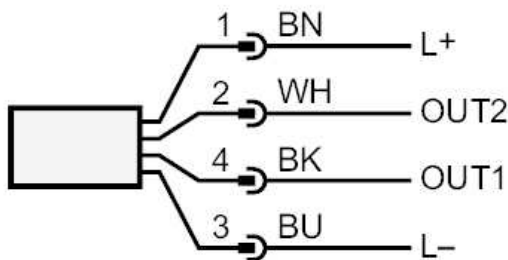
Remarks	
Pack quantity	1 pcs.

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