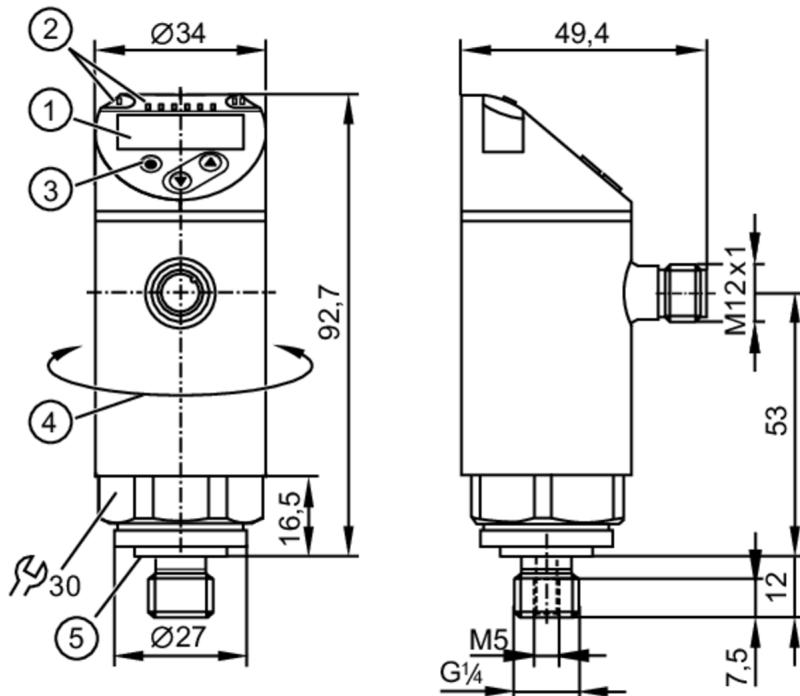


Pressure sensor with display

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 analogue 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

Special feature	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		
Vacuum resistance [MPa]	-0.1		
Type of pressure	relative pressure		

Electrical data

Operating voltage [V]	18...30 DC; (to SELV/PELV)		
Current consumption [mA]	< 35		
Min. insulation resistance [$M\Omega$]	100; (500 V DC)		

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Pressure sensor with display

PN-160-SEG14-MFRKG/US/ /V

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	
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	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
Analogue start point	0...128 bar	0...1856 psi	0...12.8 MPa
Analogue 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		< ± 0,2; (-0...80 °C)	

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[% of the span / 10 K]										
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%								
Response times										
Response time [ms]		< 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 ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)									
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]	0.05									
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	Type of operation	DeviceID								
	default	1200								
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)								
UL approval	UL Approval no.	J020								
	File number UL	E174189								

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Pressure Equipment Directive Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request

Mechanical data

Weight	[g]	309
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 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

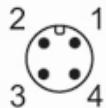
Display	Display unit	3 x LED, green (bar, psi, MPa)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, red/green 4-digit

Remarks

Pack quantity	1 pcs.
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Electrical connection

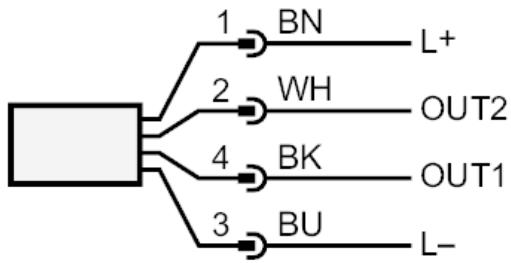
Connector: 1 x M12; coding: A; Contacts: gold-plated



Pressure sensor with display

PN-160-SEG14-MFRKG/US / V

Connection



OUT1 switching output
 IO-Link

OUT2 switching output
 analogue output
Core colours :

BK = black

BN = brown

BU = blue

WH = white