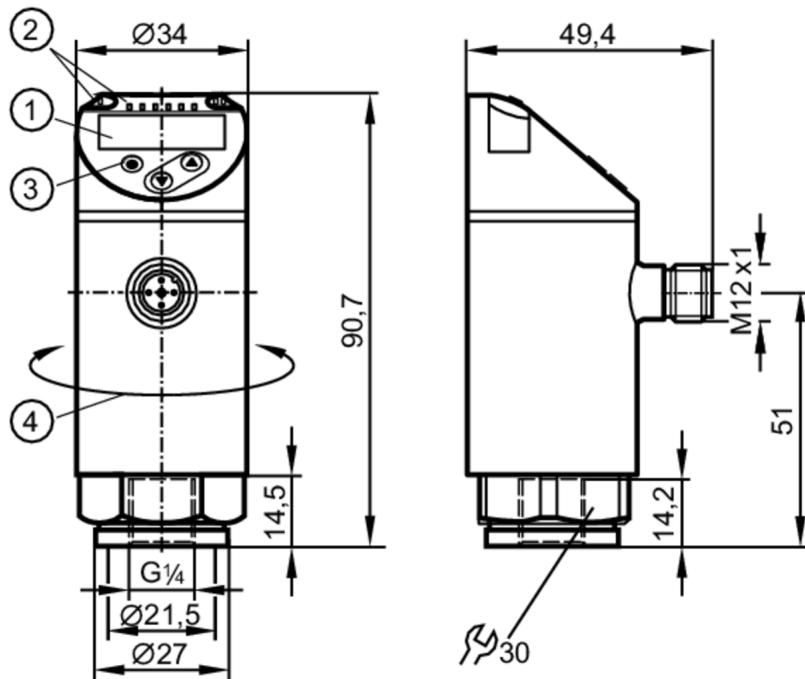


Pressure sensor with display

PN-250-SER14-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°



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1		
Measuring range	0...250 bar	0...3625 psi	0...25 MPa
Process connection	threaded connection G 1/4 internal thread (DIN EN ISO 1179-2)		

Application

Special feature	Gold-plated contacts		
Measuring element	metallic thin film cell		
Application	for industrial applications		
Media	liquids and gases		
Medium temperature [°C]	-25...80		
Min. bursting pressure	1200 bar	17400 psi	120 MPa
Pressure rating	500 bar	7250 psi	50 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		
Power-on delay time [s]	0.3		



Pressure sensor with display

PN-250-SER14-MFRKG/US/ IV

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...250 bar	0...3625 psi	0...25 MPa			
Analogue start point	0...200 bar	0...2900 psi	0...20 MPa			
Analogue end point	50...250 bar	725...3625 psi	5...25 MPa			
Factory setting / CMPT = 2						
Set point SP	1.5...250 bar	25...3625 psi	0.15...25 MPa			
Reset point rP	0.5...249 bar	10...3610 psi	0.05...24.9 MPa			
Min. difference between SP and rP	1.5 bar	15 psi	0.15 MPa			
In steps of	0.5 bar	5 psi	0.05 MPa			
Status_B High Resolution / CMPT = 3						
Set point SP	1.6...250 bar	23...3626 psi	0.16...25 MPa			
Reset point rP	0.5...249 bar	8...3611 psi	0.05...24.9 MPa			
Min. difference between SP and rP	1.1 bar	15 psi	0.11 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)					

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Long-term stability	< ± 0,05; (Turn down 1:1; per 6 months)							
Temperature coefficient zero point	0,2; (-25...80 °C)	[% of the span / 10 K]						
Temperature coefficient span	0,2; (-25...80 °C)	[% of the span / 10 K]						
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							
SIO mode	yes							
Required master port type	A; (when pin 2 not connected: B)							
Supported DeviceIDs	<table border="1"> <thead> <tr> <th>Type of operation</th> <th>DeviceID</th> </tr> </thead> <tbody> <tr> <td>Factory setting / CMPT = 2</td> <td>460</td> </tr> <tr> <td>Status_B High Resolution / CMPT = 3</td> <td>639</td> </tr> </tbody> </table>		Type of operation	DeviceID	Factory setting / CMPT = 2	460	Status_B High Resolution / CMPT = 3	639
Type of operation	DeviceID							
Factory setting / CMPT = 2	460							
Status_B High Resolution / CMPT = 3	639							
Note	For further information please see the IODD PDF file under "Downloads"							
Factory setting / CMPT = 2								
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis							
Min. process cycle time [ms]	2.3							
IO-Link resolution pressure [bar]	0.1							
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>14</td> </tr> <tr> <td>binary switching information</td> <td>2</td> </tr> </tbody> </table>		function	bit length	pressure	14	binary switching information	2
function	bit length							
pressure	14							
binary switching information	2							
IO-Link functions (acyclical)	application specific tag							
Status_B High Resolution / CMPT = 3								
Profiles	Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)							
Min. process cycle time [ms]	3							
IO-Link resolution pressure [bar]	0.1							

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Pressure sensor with display

PN-250-SER14-MFRKG/US/IV

IO-Link process data (cyclical)	function	bit length		
	pressure	16		
	device status	4		
	binary switching information	2		
IO-Link functions (acyclical)	application specific tag			
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]		129		
UL approval	UL Approval no.	J014		
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request			
Mechanical data				
Weight [g]		234.5		
Materials	stainless steel (630/1.4542/17-4 PH); stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC			
Materials (wetted parts)	stainless steel (630/1.4542/17-4 PH)			
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 internal thread (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				



Pressure sensor with display

PN-250-SER14-MFRKG/US/ /V

Connection



OUT1 switching output
IO-Link

OUT2 switching output
analogue output
Core colours :

BK = black

BN = brown

BU = blue

WH = white