

PN2071



Pressure sensor with display

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



- 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 analog 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			
System	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	-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		
Power-on delay time [s]	0.3		



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Integrated watchdog	yes		
Inputs / outputs			
Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1		
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...250 bar	0...3625 psi	0...25 MPa
Analog start point	0...200 bar	0...2900 psi	0...20 MPa
Analog 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 [% of the span]	< ± 0,05; (Turn down 1:1; per 6 months)	
Temperature coefficient zero point [% of the span / 10 K]	0,2; (-25...80 °C)	
Temperature coefficient span [% of the span / 10 K]	0,2; (-25...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	
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 class	A; (when pin 2 not connected: B)	
Supported DeviceIDs	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 at "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)	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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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 number	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
Housing		tubular
Dimensions	[mm]	Ø 34 / L = 90.7
Material		stainless steel (630/1.4542/17-4 PH); stainless steel (1.4404 / 316L); 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



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Connection



OUT1	Switching output
	IO-Link
OUT2	Switching output
	analog output
	Core colors :
BK =	black
BN =	brown
BU =	blue
WH =	white