

PN3071



Pressure sensor with display

PN-250-SER14-MFRKG/US/ I/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: 1; Number of analog outputs: 1		
Measuring range	0...250 bar	0...3620 psi	0...25 MPa
Process connection	threaded connection G 1/4 Internal thread M6 I		
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: 1; Number of analog outputs: 1		
Outputs			
Total number of outputs	2		
Output signal	switching signal; analog signal; IO-Link; (configurable)		
Electrical design	PNP		
Number of digital outputs	1		
Output function	normally open / closed; (configurable)		
Max. voltage drop switching output DC [V]	2.5		
Permanent current rating of switching output DC [mA]	150; (200 (...60 °C) 250 (...40 °C))		
Switching frequency DC [Hz]	< 170		
Number of analog outputs	1		
Analog current output [mA]	4...20		
Max. load [Ω]	500		
Analog voltage output [V]	0...10		
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...3620 psi	0...25 MPa
Factory setting / CMPT = 2			
Set point SP	2...250 bar	40...3620 psi	0.2...25 MPa
Reset point rP	1...249 bar	20...3600 psi	0.1...24.9 MPa
Min. difference between SP and rP	2 bar	20 psi	0.2 MPa
In steps of	1 bar	20 psi	0.1 MPa
Status_B High Resolution / CMPT = 3			
Set point SP	2...250 bar	30...3626 psi	0.2...25 MPa
Reset point rP	1...249 bar	12...3608 psi	0.1...24.9 MPa
Min. difference between SP and rP	2 bar	19 psi	0.2 MPa
In steps of	1 bar	1 psi	0.1 MPa
Accuracy / deviations			
Switch point accuracy [% of the span]	< ± 0,5		
Repeatability [% of the span]	< ± 0,1; (with temperature fluctuations < 10 K)		
Characteristics deviation [% of the span]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting)		
Hysteresis deviation [% of the span]	< ± 0,25		
Long-term stability	< ± 0,05; (per 6 months)		



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	[% of the span]	
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]	

Reaction times		
Response time	[ms]	< 3
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	
Process data analog	1	
Process data binary	1	
Supported DeviceIDs	Type of operation	DeviceID
	Factory setting / CMPT = 2	428
	Status_B High Resolution / CMPT = 3	607
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	1 bar	0.1 MPa
IO-Link process data (cyclical)	Function	bit length
	pressure	14
	binary switching information	1
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	0.1 bar	0.01 MPa

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IO-Link process data (cyclical)	Function	bit length
	pressure	16
	device status	4
	binary switching information	1
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]	190
UL approval	UL approval number	J006
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight	[g]	231
Housing		tubular
Dimensions	[mm]	Ø 34 / L = 90.7
Material		stainless steel (630/1.4542/17-4 PH); stainless steel (1.4404 / 316L) 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 M6 I
Restrictor element integrated		no (can be retrofitted)

Displays / operating elements

Display	Display unit	3 x LED, green (bar, psi, MPa)
	Switching status	1 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



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Connection



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