



Pressure sensor with display

PN-400-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: 1; Number of analogue outputs: 1		
Measuring range	0...400 bar	0...5800 psi	0...40 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	metallic thin film cell		
Application	for industrial applications		
Media	liquids and gases		
Medium temperature [°C]	-25...80		
Min. bursting pressure	1700 bar	24650 psi	170 MPa
Pressure rating	800 bar	11580 psi	80 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		



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Power-on delay time	[s]	0.3
Integrated watchdog		yes

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analogue outputs: 1
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Outputs

Total number of outputs	2
Output signal	switching signal; analogue signal; IO-Link; (configurable)
Electrical design	PNP
Number of digital outputs	1
Output function	normally open / normally closed; (parameterisable)
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 analogue outputs	1
Analogue current output	[mA] 4...20
Max. load	[Ω] 500
Analogue voltage output	[V] 0...10
Min. load resistance	[Ω] 2000
Short-circuit protection	yes
Type of short-circuit protection	pulsed
Overload protection	yes

Measuring/setting range

Measuring range	0...400 bar	0...5800 psi	0...40 MPa
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Factory setting / CMPT = 2

Set point SP	4...400 bar	40...5800 psi	0.4...40 MPa
Reset point rP	2...398 bar	20...5780 psi	0.2...39.8 MPa
Min. difference between SP and rP	2 bar	40 psi	0.2 MPa
In steps of	2 bar	20 psi	0.2 MPa

Status_B High Resolution / CMPT = 3

Set point SP	3...400 bar	49...5802 psi	0.3...40 MPa
Reset point rP	1...398 bar	20...5773 psi	0.1...39.8 MPa
Min. difference between SP and rP	2 bar	30 psi	0.2 MPa
In steps of	1 bar	1 psi	0.1 MPa

Accuracy / deviations

Switch point accuracy	[X21]	< ± 0,5
Repeatability	[X21]	< ± 0,1; (with temperature fluctuations < 10 K)
Characteristics deviation	[X21]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting)
Hysteresis deviation	[X21]	< ± 0,25
Long-term stability	[X21]	< ± 0,05; (per 6 months)
Temperature coefficient zero point	[X22]	0,2; (-25...80 °C)



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Temperature coefficient span [X22]	0,2; (-25...80 °C)
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Response times	
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Response time [ms]	< 3
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	
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Parameter setting options	hysteresis / window; normally open / normally closed; switch-on/ switch-off delay; Damping; Display unit; current/voltage output
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Interfaces	
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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						
Process data analogue	1						
Process data binary	1						
Supported DeviceIDs	<table border="1"> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>Factory setting / CMPT = 2</td><td>427</td></tr> <tr> <td>Status_B High Resolution / CMPT = 3</td><td>606</td></tr> </table>	Type of operation	DeviceID	Factory setting / CMPT = 2	427	Status_B High Resolution / CMPT = 3	606
Type of operation	DeviceID						
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Note	For further information please see the IODD PDF file under "Downloads"						

Factory setting / CMPT = 2	
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Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis						
Min. process cycle time [ms]	2.3						
IO-Link resolution pressure [bar]	1						
IO-Link resolution pressure [MPa]	0.1						
IO-Link process data (cyclical)	<table border="1"> <tr> <th>function</th><th>bit length</th></tr> <tr> <td>pressure</td><td>14</td></tr> <tr> <td>binary switching information</td><td>1</td></tr> </table>	function	bit length	pressure	14	binary switching information	1
function	bit length						
pressure	14						
binary switching information	1						
IO-Link functions (acyclical)	application specific tag						

Status_B High Resolution / CMPT = 3	
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Profiles	Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)								
Min. process cycle time [ms]	3								
IO-Link resolution pressure [bar]	0.2								
IO-Link resolution pressure [MPa]	0.02								
IO-Link process data (cyclical)	<table border="1"> <tr> <th>function</th><th>bit length</th></tr> <tr> <td>pressure</td><td>16</td></tr> <tr> <td>device status</td><td>4</td></tr> <tr> <td>binary switching information</td><td>1</td></tr> </table>	function	bit length	pressure	16	device status	4	binary switching information	1
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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	[ANN]	190
UL approval	UL Approval no.	J006
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight	[g]	260.5
Materials	1.4542 (17-4 PH / 630); stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	1.4542 (17-4 PH / 630)	
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	1 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	analogue output
	Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white