

PN2270



Pressure sensor with display

PN-400-SEN14-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

Output signal	switching signal; analog signal; IO-Link; (configurable)		
Measuring range	0...400 bar	0...5800 psi	0...40 MPa
Process connection	threaded connection 1/4" NPT Internal thread		

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	1700 bar	24650 psi	170 MPa
Pressure rating	800 bar	11580 psi	80 MPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure		
MAWP (for applications according to CRN)	800 bar	11580 psi	80 MPa

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Electrical data			
Operating voltage	[V]	18...30 DC; (according to EN 50178 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	
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...400 bar	0...5800 psi 0...40 MPa
Analog start point		0...320 bar	0...4640 psi 0...32 MPa
Analog end point		80...400 bar	1160...5800 psi 8...40 MPa
Factory setting / CMPT = 2			
Set point SP		2.5...400 bar	40...5800 psi 0.25...40 MPa
Reset point rP		1...398.5 bar	10...5780 psi 0.1...39.85 MPa
Min. difference between SP and rP		2 bar	30 psi 0.2 MPa
In steps of		0.5 bar	10 psi 0.05 MPa
Status_B High Resolution / CMPT = 3			
Set point SP		2.5...400 bar	37...5802 psi 0.25...40 MPa
Reset point rP		0.9...398.4 bar	13...5778 psi 0.09...39.84 MPa
Min. difference between SP and rP		1.7 bar	24 psi 0.17 MPa
In steps of		0.1 bar	1 psi 0.01 MPa



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Accuracy / deviations	
Notes on the accuracy / deviation	switch point accuracy, linearity error under DNV GL: $< \pm 1\%$: $< \pm 1\%$
Switch point accuracy [% of the span]	$< \pm 0,4$; (Turn down 1:1)
Repeatability [% of the span]	$< \pm 0,1$; (with temperature fluctuations < 10 K; Turn down 1:1)
Characteristics deviation [% of the span]	$< \pm 0,25$ (BFSL) / $< \pm 0,5$ (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)
Hysteresis deviation [% of the span]	$< \pm 0,1$; (Turn down 1:1)
Long-term stability [% of the span]	$< \pm 0,05$; (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)
Reaction times	
Response time [ms]	< 1.5
Delay time programmable dS, dr [s]	0...50
Damping for the switching output 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; (wenn PIN 2 nicht verbunden: B)
Supported DeviceIDs	Type of operation
	Factory setting / CMPT = 2
	Status_B High Resolution / CMPT = 3
Note	For further information please see the IODD PDF file at "Downloads"



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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]	0.2	
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]	220	
Material	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]	> 50; (Depends on lubrication, seal and pressure rating)	
Process connection	threaded connection 1/4" NPT Internal thread	
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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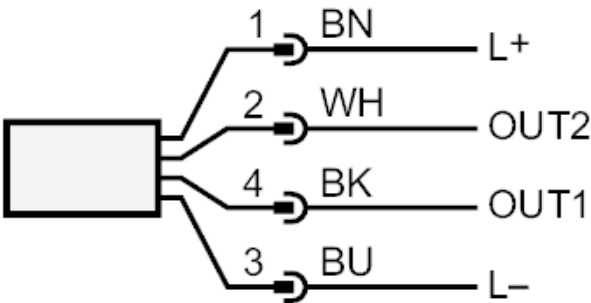
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Electrical connection

Connector: 1 x M12; Contacts: gold-plated



Connection



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