

PN7570



Pressure sensor with display

PN-400-SEG14-QFRKG/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: 2		
Measuring range	0...400 bar	0...5800 psi	0...40 MPa
Process connection	threaded connection G 1/4 external thread Internal thread:M5		

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		

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: 2
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Outputs

Total number of outputs	2
Output signal	switching 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] 2.5
Permanent current rating of switching output DC	[mA] 150; (200 (...60 °C) 250 (...40 °C))
Switching frequency DC	[Hz] < 170
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
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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	[% 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	[% of the span]	< ± 0,05; (per 6 months)
Temperature coefficient zero point	[% of the span / 10 K]	0,2; (-25...80 °C)
Temperature coefficient span		0,2; (-25...80 °C)

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[% of the span / 10 K]

Reaction times

Response time	[ms]	< 3
Delay time programmable dS, dr	[s]	0...50

Software / programming

Parameter setting options	hysteresis / window; normally open / closed; switching logic; switch-on/switch-off delay; Damping; Display unit
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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)								
Process data analog	1								
Process data binary	2								
Supported DeviceIDs	<table><tr><th>Type of operation</th><th>DeviceID</th></tr><tr><td>Factory setting / CMPT = 2</td><td>399</td></tr><tr><td>PN7000</td><td>307</td></tr><tr><td>Status_B High Resolution / CMPT = 3</td><td>597</td></tr></table>	Type of operation	DeviceID	Factory setting / CMPT = 2	399	PN7000	307	Status_B High Resolution / CMPT = 3	597
Type of operation	DeviceID								
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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] 1						
IO-Link resolution pressure	[MPa] 0.1						
IO-Link process data (cyclical)	<table><tr><th>Function</th><th>bit length</th></tr><tr><td>pressure</td><td>14</td></tr><tr><td>binary switching information</td><td>2</td></tr></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] 0.2								
IO-Link resolution pressure	[MPa] 0.02								
IO-Link process data (cyclical)	<table><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>2</td></tr></table>	Function	bit length	pressure	16	device status	4	binary switching information	2
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

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Protection	IP 65; IP 67
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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]	205	
UL approval	UL approval number	J003
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight [g]	257.5	
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 external thread Internal thread:M5	
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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Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



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Connection



OUT1	Switching output IO-Link
OUT2	Switching output Colors to DIN EN 60947-5-2 Core colors :
BK =	black
BN =	brown
BU =	blue
WH =	white