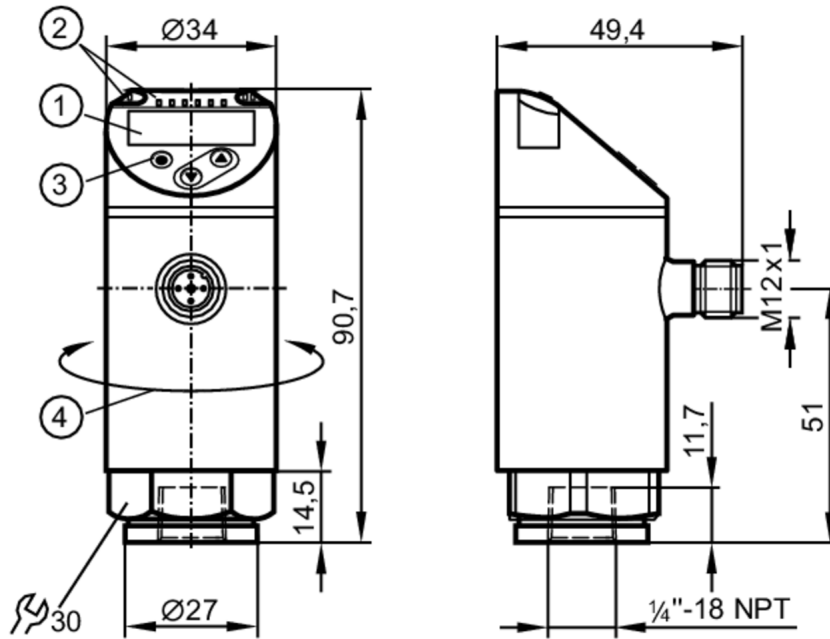


# PN7271



## Pressure sensor with display

PN-250-SEN14-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°



### Product characteristics

Number of inputs and outputs	Number of digital outputs: 2		
Measuring range	0...250 bar	0...3620 psi	0...25 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. burst pressure	1100 bar	15950 psi	110 MPa
Pressure rating	500 bar	7250 psi	50 MPa
Type of pressure	relative pressure		
MAWP (for applications according to CRN)	500 bar	7250 psi	50 MPa

### 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
------------------------------	------------------------------

### 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...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	1 bar	20 psi	0.1 MPa
In steps of	2 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	1 bar	1 psi	0.1 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]									
<b>Reaction times</b>									
Response time [ms]	< 3								
Delay time programmable dS, dr [s]	0...50								
<b>Software / programming</b>									
Parameter setting options	hysteresis / window; normally open / closed; switching logic; switch-on/switch-off delay; Damping; Display unit								
<b>Interfaces</b>									
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	<table border="1"> <thead> <tr> <th>Type of operation</th> <th>DeviceID</th> </tr> </thead> <tbody> <tr> <td>Factory setting / CMPT = 2</td> <td>451</td> </tr> <tr> <td>Status_B High Resolution / CMPT = 3</td> <td>628</td> </tr> </tbody> </table>	Type of operation	DeviceID	Factory setting / CMPT = 2	451	Status_B High Resolution / CMPT = 3	628		
Type of operation	DeviceID								
Factory setting / CMPT = 2	451								
Status_B High Resolution / CMPT = 3	628								
Note	For further information please see the IODD PDF file at "Downloads"								
<b>Factory setting / CMPT = 2</b>									
Profiles	<table border="1"> <thead> <tr> <th>Smart Sensor - SSP 0</th> <th>Generic Profiled Sensor</th> </tr> </thead> <tbody> <tr> <td>Function</td> <td>Device identification</td> </tr> <tr> <td>Function</td> <td>Process data variable</td> </tr> <tr> <td>Function</td> <td>Device diagnosis</td> </tr> </tbody> </table>	Smart Sensor - SSP 0	Generic Profiled Sensor	Function	Device identification	Function	Process data variable	Function	Device diagnosis
Smart Sensor - SSP 0	Generic Profiled Sensor								
Function	Device identification								
Function	Process data variable								
Function	Device diagnosis								
Min. process cycle time [ms]	2.3								
IO-Link resolution pressure	1 bar / 0.1 MPa								
IO-Link process data (cyclical)	<table border="1"> <thead> <tr> <th>Function</th> <th>bit length</th> </tr> </thead> <tbody> <tr> <td>pressure</td> <td>14</td> </tr> <tr> <td>binary switching information</td> <td>2</td> </tr> </tbody> </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								
<b>Status_B High Resolution / CMPT = 3</b>									
Profiles	<table border="1"> <thead> <tr> <th>Smart Sensor - SSP 3.1</th> <th>Measuring Sensor</th> </tr> </thead> <tbody> <tr> <td>Common - I&amp;D</td> <td>Identification and Diagnosis</td> </tr> </tbody> </table>	Smart Sensor - SSP 3.1	Measuring Sensor	Common - I&D	Identification and Diagnosis				
Smart Sensor - SSP 3.1	Measuring Sensor								
Common - I&D	Identification and Diagnosis								
Min. process cycle time [ms]	3								
IO-Link resolution pressure	0.1 bar / 0.01 MPa								
IO-Link process data (cyclical)	<table border="1"> <thead> <tr> <th>Function</th> <th>bit length</th> </tr> </thead> <tbody> <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> </tbody> </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								
<b>Operating conditions</b>									
Ambient temperature [°C]	-25...80								
Storage temperature [°C]	-40...100								
Protection	IP 65; IP 67								

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## Pressure sensor with display

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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]	214	
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]	219.5	
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]	2...3 turns after hand-fastening; recommended tightening torque; 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.	

### 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