

PN7693



Pressure sensor with display

PN-025-REN14-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...25 bar	0...362 psi	0...2.5 MPa
Process connection	threaded connection 1/4" NPT external thread		

Application

Special feature	Gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Application	for industrial applications		
Media	liquids and gases		
Medium temperature [°C]	-25...80		
Min. burst pressure	350 bar	5075 psi	35 MPa
Pressure rating	150 bar	2175 psi	15 MPa
Type of pressure	relative pressure		
MAWP for applications according to CRN	70 bar	1015 psi	12.5 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
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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 / 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
Short-circuit protection	yes
Type of short-circuit protection	pulsed
Overload protection	yes

Measuring/setting range

Measuring range	0...25 bar	0...362 psi	0...2.5 MPa
Factory setting / CMPT = 2			
Set point SP	0.2...25 bar	4...362 psi	0.02...2.5 MPa
Reset point rP	0.1...24.9 bar	2...360 psi	0.01...2.49 MPa
Min. difference between SP and rP	0.2 bar	2 psi	0.02 MPa
In steps of	0.1 bar	2 psi	0.01 MPa
Status_B High Resolution / CMPT = 3			
Set point SP	0.2...25 bar	3...363 psi	0.02...2.5 MPa
Reset point rP	0.1...24.9 bar	1...361 psi	0.01...2.49 MPa
Min. difference between SP and rP	0.2 bar	2 psi	0.02 MPa
In steps of	0.1 bar	1 psi	0.01 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; (-0...80 °C)
Temperature coefficient span	< ± 0,2; (-0...80 °C)

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[% of the span / 10 K]


Response times										
Response time	[ms]	< 3								
Delay time programmable dS, dr	[s]	0...50								
Software / programming										
Parameter setting options	hysteresis / window; normally open / normally closed; switching logic; switch-on/switch-off delay; Damping; Display unit									
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 type	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>453</td> </tr> <tr> <td>Status_B High Resolution / CMPT = 3</td> <td>631</td> </tr> </tbody> </table>	Type of operation	DeviceID	Factory setting / CMPT = 2	453	Status_B High Resolution / CMPT = 3	631			
Type of operation	DeviceID									
Factory setting / CMPT = 2	453									
Status_B High Resolution / CMPT = 3	631									
Note	For further information please see the IODD PDF file under "Downloads"									
Factory setting / CMPT = 2										
Profiles	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	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>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									
Status_B High Resolution / CMPT = 3										
Profiles	Smart Sensor - SSP 3.1	Measuring Sensor								
	Common - I&D	Identification and Diagnosis								
Min. process cycle time	[ms]	3								
IO-Link resolution pressure	0.01 bar	0.001 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									
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IO-Link functions (acyclical)	application specific tag									
Operating conditions										
Ambient temperature	[°C]	-25...80								
Storage temperature	[°C]	-40...100								
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]		260
UL approval	UL approval no.	J001
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight [g]		244.5
Housing		cylindrical
Dimensions [mm]		Ø 34 / L = 90.7
Materials	stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (316L/1.4404); ceramics; FKM	
Min. pressure cycles		100 million
Tightening torque [Nm]	2...3 turns after hand-fastening; recommended tightening torque; depends on the lubrication, the seal and the pressure load	
Process connection	threaded connection 1/4" NPT external 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: 4, gold-plated		
		

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Connection



OUT1 switching output

IO-Link

OUT2 switching output

colours to DIN EN 60947-5-2

Core colours :

BK = black

BN = brown

BU = blue

WH = white