

PN7594



Pressure sensor with display

PN-010-REG14-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	-1...10 bar	-14.5...145 psi	-100...1000 kPa	-0.1...1 MPa
Process connection	threaded connection G 1/4 external thread Internal thread:M5			

Application

System	gold-plated contacts		
Measuring element	ceramic-capacitive pressure measuring cell		
Application	for industrial applications		
Media	liquids and gases		
Medium temperature [°C]	-25...80		
Min. bursting pressure	150 bar	2175 psi	15 MPa
Pressure rating	75 bar	1087 psi	7.5 MPa
Vacuum resistance	-1000 mbar	-0.1 MPa	
Type of pressure	relative pressure; vacuum		

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		-1...10 bar	-14.5...145 psi	-100...1000 kPa	-0.1...1 MPa
Factory setting / CMPT = 2					
Set point SP		-0.9...10 bar	-13.5...145 psi	-0.09...1 MPa	
Reset point rP		-0.95...9.95 bar	-14...144.5 psi	-0.095...0.995 MPa	
Min. difference between SP and rP		0.05 bar	1 psi	0.005 MPa	
In steps of		0.05 bar	0.5 psi	0.005 MPa	
Status_B High Resolution / CMPT = 3					
Set point SP		-0.92...10 bar	-13.3...145 psi	-0.092...1 MPa	
Reset point rP		-0.97...9.95 bar	-14...144.3 psi	-0.097...0.995 MPa	
Min. difference between SP and rP		0.05 bar	0.8 psi	0.005 MPa	
In steps of		0.01 bar	0.1 psi	0.001 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]

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	
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	Type of operation	DeviceID
	Factory setting / CMPT = 2	403
	PN7004	311
	Status_B High Resolution / CMPT = 3	601
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	0.01 bar	0.001 MPa
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	0.005 bar	0.0005 MPa
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	

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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 number	J001
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight [g]	260.5	
Material	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (1.4404 / 316L); ceramics; FKM	
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.	
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