



# PN7094

PN-010-RER14-QFRKG/US/ IV



Pressure sensors



- 1: 4-digit alphanumeric display / alternating indication of red and green
- 2: LEDs (display unit / switching status)
- 3: Programming button
- 4: Upper part of the housing can be rotated by  $345^\circ$



## Product characteristics

Electronic pressure monitor

M12 connector

Function programmable

Measuring element: ceramic-capacitive pressure measuring cell

Process connection: G  $\frac{1}{4}$  I

2 outputs

OUT1 = switching output

OUT2 = switching output

4-digit alphanumeric display / alternating indication of red and green

Measuring range: -1...10 bar / -14.5...145 psi / -0.1...1.0 MPa

## Application

Application	Type of pressure: relative pressure liquids and gases of the fluid group 2 according to Article 9 of the Pressure Equipment Directive (PED) For gas applications > 25 bar: select PN7x7x series		
Pressure rating	75 bar	1087 psi	7.5 MPa
Bursting pressure min.	150 bar	2175 psi	15 MPa
Medium temperature [°C]	-25...80		

## Electrical data

Electrical design	DC PNP/NPN		
Operating voltage [V]	18...30 DC <sup>1)</sup>		
Current consumption [mA]	< 35		
Insulation resistance [M $\Omega$ ]	> 100 (500 V DC)		
Protection class	III		
Reverse polarity protection	yes		

## Outputs

Output	2 outputs OUT1 = switching output OUT2 = switching output		
Output function	2 x normally open / closed programmable		



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Current rating	[mA]	150; 200 (...60 °C); 250 (...40 °C)
Voltage drop	[V]	< 2.5
Short-circuit protection		pulsed
Overload protection		yes
Switching frequency	[Hz]	≤ 170

## Measuring / setting range

Measuring range	-1...10 bar	-14.5...145 psi	-0.1...1.0 MPa
Setting range			
Set point, SP	-0.90...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
in steps of	0.05 bar	0.5 psi	0.005 MPa

## Accuracy / deviations

Accuracy / deviations (in % of the span)			
Switch point accuracy		< ± 0.5	
Characteristics deviation *)		< ± 0.25 (BFSL) / < ± 0.5 (LS)	
Hysteresis		< ± 0.25	
Repeatability **)		< ± 0.1	
Long-term stability ***)		< ± 0.05	
Temperature coefficients (TEMPCO) in the temperature range -25...80° C (in % of the span per 10 K)			
Greatest TEMPCO of the zero point		0.2	
Greatest TEMPCO of the span		0.2	

## Reaction times

Power-on delay time	[s]	< 0.3
Min. response time switching output	[ms]	< 3
Delay time programmable dS, dr	[s]	0...50
Integrated watchdog		yes

## Software / programming

Programming options	hysteresis / window function; NO / NC; output polarity; on delay, off delay; damping; display unit
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## Interfaces

IO-Link device	
Transfer type	COM2 (38.4 kBaud)
IO-Link revision	1.1
SDCI standard	IEC 61131-9
IO-Link device ID	403 d / 00 01 93 h
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
SIO mode	yes
Required master port class	A
Process data analogue	1
Process data binary	2
Min. process cycle time	[ms] 2.3

## Environment

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

Pressure equipment directive	Sound engineering practice
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]	224.01
UL approval number	J001

### Mechanical data

Process connection	G ¼ I
Materials (wetted parts)	1.4404; ceramics; FKM
Housing materials	1.4404; PBT+PC-GF 30; PBT-GF 20; PC
Switching cycles min.	100 million
Tightening torque [Nm]	25...35 (recommended tightening torque <sup>2</sup> )
Weight [kg]	0.234

### Displays / operating elements

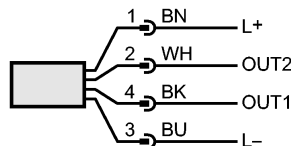
Display	Display unit      3 x LED green (bar, psi, MPa) Switching status    2 x LED yellow 4-digit alphanumeric display / alternating indication Measured values of red and green
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### Electrical connection

Connection	M12 connector; Gold-plated contacts
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#### Wiring

Core colours	
BK	black
BN	brown
BU	blue
WH	white



OUT1: switching output or IO-Link  
 OUT2: switching output  
 Colours to DIN EN 60947-5-2

### Remarks

Remarks	1) to EN50178, SELV, PELV *) BFSL = Best Fit Straight Line / LS = Limit Value Setting **) with temperature fluctuations < 10 K ***) in% of the span / 6 months 2) Depends on lubrication, seal and pressure rating
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Pack quantity [piece]	1
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