

PN7015



Pressure sensor with display

PN-006-RER14-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	-1...6 bar	-14.5...87 psi	100...600 kPa
Process connection	threaded connection G 1/4 internal 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. bursting pressure	100 bar	1500 psi	10000 kPa	10 MPa
Pressure rating	40 bar	600 psi	4000 kPa	4 MPa
Vacuum resistance [mbar]	-1000			
Vacuum resistance [MPa]	-0.1			
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 / 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	-1...6 bar	-14.5...87 psi 100...600 kPa
Set point SP	-0.95...6 bar	-13.8...87 psi -95...600 kPa -0.09...1 MPa
Reset point rP	-0.98...5.97 bar	-14.2...86.6 psi -98...597 kPa -0.095...0.995 MPa
Min. difference between SP and rP	0.03 bar	0.5 psi 3 kPa
In steps of	0.001 bar	0.1 psi 1 kPa
Accuracy / deviations		
Switch point accuracy		< ± 0,5
[% of the span]		
Repeatability		< ± 0,1; (with temperature fluctuations < 10 K)
[% of the span]		
Characteristics deviation		< ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting)
[% of the span]		
Hysteresis deviation		< ± 0,25
[% of the span]		
Long-term stability		< ± 0,05; (per 6 months)
[% of the span]		
Temperature coefficient zero point		< ± 0,2; (0...80 °C)
[% of the span / 10 K]		
Temperature coefficient span		< ± 0,2; (0...80 °C)
[% of the span / 10 K]		
Response times		
Response time	[ms]	< 3
Delay time programmable dS, dr	[s]	0...50
Damping process value dAP	[s]	0...4



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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	
Profiles	Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)	
SIO mode	yes	
Required master port type	A; (when pin 2 not connected: B)	
Process data analogue	1	
Process data binary	2	
Min. process cycle time [ms]	3	
IO-Link resolution pressure [bar]	0.002	
IO-Link process data (cyclical)	function	bit length
	pressure	16
	device status	4
	binary switching information	2
IO-Link functions (acyclical)	application specific tag	
Supported DeviceIDs	Type of operation	DeviceID
	default	1199
Note	For further information please see the IODD PDF file under "Downloads"	
Operating conditions		
Ambient temperature [°C]	-25...80	
Storage temperature [°C]	-40...100	
Protection	IP 65; IP 67	
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]	249	
UL approval	UL Approval no.	J001
	File number UL	E174189
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight [g]	244	
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); Al2O3 (ceramics); FKM	
Min. pressure cycles	100 million	
Tightening torque [Nm]	25...35; (recommended tightening torque; depends on lubrication, seal and pressure rating)	

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Process connection	threaded connection G 1/4 internal thread
Restrictor element integrated	no (can be retrofitted)

Displays / operating elements

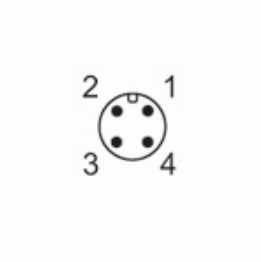
Display	Display unit	3 x LED, green (bar, psi, MPa)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, red/green 4-digit

Remarks

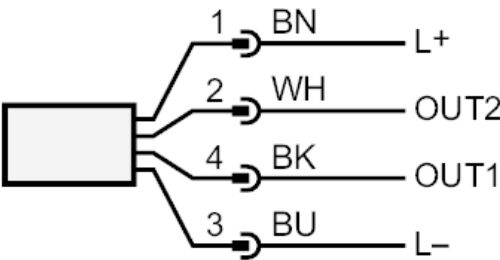
Pack quantity	1 pcs.
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Electrical connection

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



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