

PNU096



Pressure sensor with display

PN-2,5-RER14-MFRKG/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; Number of analogue outputs: 1		
Measuring range	-0.125...2.5 bar	-125...2500 mbar	-12.5...250 kPa
Process connection	threaded connection G 1/4 internal thread (DIN EN ISO 1179-2)		

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	50 bar	5000 kPa
Pressure rating	20 bar	2000 kPa
Vacuum resistance [mbar]	-1000	
Type of pressure	relative pressure	

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	
Power-on delay time [s]	0.3	



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Integrated watchdog	yes		
Inputs / outputs			
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1		
Outputs			
Total number of outputs	2		
Output signal	switching signal; analogue 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		
Permanent current rating of switching output DC [mA]	250		
Switching frequency DC [Hz]	< 500		
Number of analogue outputs	1		
Analogue current output [mA]	4...20; (scalable 1:5)		
Max. load [Ω]	500		
Analogue voltage output [V]	0...10; (scalable 1:5)		
Min. load resistance [Ω]	2000		
Short-circuit protection	yes		
Type of short-circuit protection	pulsed		
Overload protection	yes		
Measuring/setting range			
Measuring range	-0.125...2.5 bar	-125...2500 mbar	-12.5...250 kPa
Set point SP	-0.11...2.5 bar	-11...250 kPa	
Reset point rP	-0.12...2.49 bar	-12...249 kPa	
Analogue start point	-0.125...2 bar	-12.5...200 kPa	
Analogue end point	0.375...2.5 bar	37.5...250 kPa	
In steps of	0.005 bar	0.5 kPa	
Accuracy / deviations			
Switch point accuracy [% of the span]	< ± 0,4; (Turn down 1:1)		
Repeatability [% of the span]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)		
Characteristics deviation [% of the span]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)		
Hysteresis deviation [% of the span]	< ± 0,1; (Turn down 1:1)		
Long-term stability [% of the span]	< ± 0,05; (Turn down 1:1; per 6 months)		
Temperature coefficient zero point [% of the span / 10 K]	< ± 0,2; (0...80 °C)		
Temperature coefficient span [% of the span / 10 K]	< ± 0,2; (0...80 °C)		
Notes on the accuracy / deviation	switch point accuracy, linearity error under DNV GL: < ± 1%: < ± 1%		



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Response times		
Response time	[ms]	< 1.5
Delay time programmable dS, dr	[s]	0...50
Damping process value dAP	[s]	0...4
Damping for the analogue output dAA	[s]	0...4
Max. response time analogue output	[ms]	3
Software / programming		
Parameter setting options	hysteresis / window; normally open / normally closed; switch-on/ switch-off delay; Damping; Display unit; current/voltage output	
Interfaces		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis	
SIO mode	yes	
Required master port type	A	
Process data analogue	1	
Process data binary	2	
Min. process cycle time	[ms]	2.3
Supported DeviceIDs	Type of operation	DeviceID
	default	1663
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]	167
UL approval	UL Approval no.	J012
	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]	215.8
Materials	stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)	stainless steel (316L/1.4404); Al2O3 (96%; 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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Restrictor element integrated	no (can be retrofitted)
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Displays / operating elements

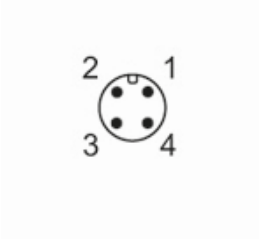
Display	Display unit	3 x LED, green (bar, kPa)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, red/green 4-digit

Remarks

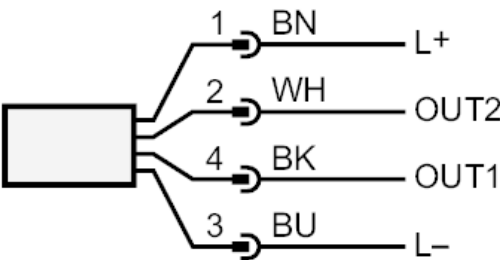
Pack quantity	1 pcs.
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Electrical connection

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



Connection



OUT1	switching output
	IO-Link
OUT2	switching output
	analogue output
	Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white