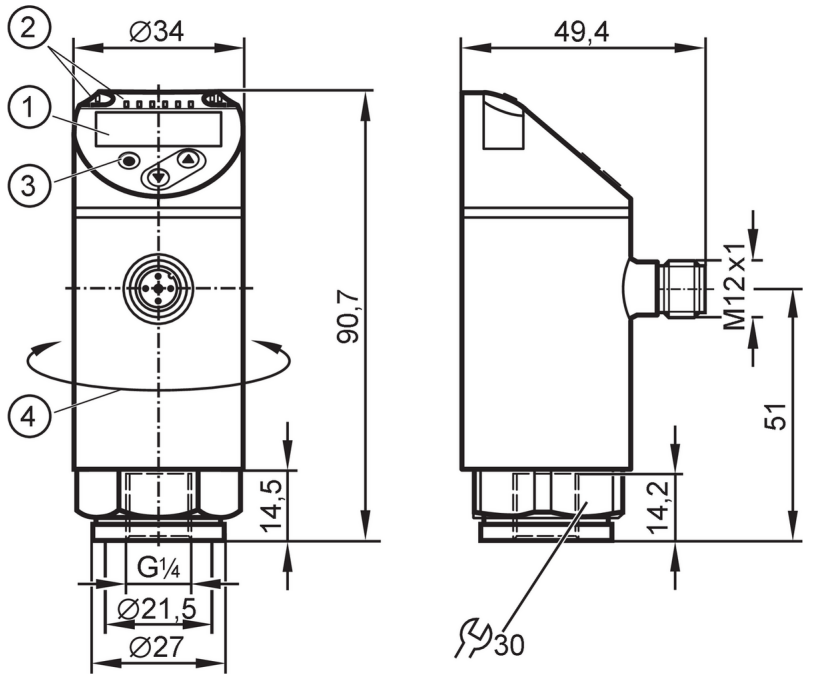
PN3094

Pressure sensor with display

PN-010-RER14-MFRKG/US/ /V



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: 1; Number of analog outputs: 1		
Measuring range	-1...10 bar	-14.5...145 psi	-0.1...1 MPa
Process connection	threaded connection G 1/4 Internal thread M6 I		
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	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		
Power-on delay time [s]	< 0.3		
Integrated watchdog	yes		

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Inputs / outputs				
Number of inputs and outputs		Number of digital outputs: 1; Number of analog outputs: 1		
Outputs				
Total number of outputs		2		
Output signal		switching signal; analog signal; IO-Link; (configurable)		
Electrical design		PNP		
Number of digital outputs		1		
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		
Number of analog outputs		1		
Analog current output	[mA]	4...20; (0 bar = 4 mA; 10 bar = 20 mA)		
Max. load	[Ω]	500		
Analog voltage output	[V]	0...10; (0 bar = 0 V; 10 bar = 10 V)		
Min. load resistance	[Ω]	2000		
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	-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)		

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Temperature coefficient zero point [% of the span / 10 K]		< ± 0,2; (-25...80 °C)	
Temperature coefficient span [% of the span / 10 K]		< ± 0,2; (-25...80 °C)	
Reaction times			
Response time	[ms]	< 3	
Delay time programmable dS, dr	[s]	0...50	
Damping process value dAP	[s]	0...4	
Damping for the analog output dAA	[s]	0...4	
Max. response time analog output	[ms]	3	
Software / programming			
Parameter setting options		hysteresis / window; normally open / 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	
SIO mode		yes	
Required master port class		A	
Process data analog		1	
Process data binary		1	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		Factory setting / CMPT = 2	431
		Status_B High Resolution / CMPT = 3	615
Note		For further information please see the IODD PDF file at "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		0.01 bar	0.001 MPa
IO-Link process data (cyclical)		**Function**	**bit length**
		pressure	14
		binary switching information	1
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		0.005 bar	0.0005 MPa

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IO-Link process data (cyclical)		**Function**	**bit length**
		pressure	16
		device status	4
		binary switching information	1
IO-Link functions (acyclical)		application specific tag	
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]	226	
UL approval		UL approval number	J004
Pressure equipment directive		sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	235.5	
Housing		tubular	
Dimensions	[mm]	Ø 34 / L = 90.7	
Material		stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)		stainless steel (1.4404 / 316L); Al2O3 (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 Internal thread M6 I	
Restrictor element integrated		no (can be retrofitted)	
Displays / operating elements			
Display		Display unit	3 x LED, green (bar, psi, MPa)
		Switching status	1 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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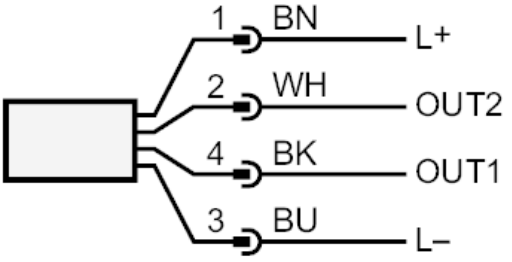
Connection



OUT1	Switching output IO-Link
OUT2	analog output
	Colors to DIN EN 60947-5-2
	Core colors :
BK =	black
BN =	brown
BU =	blue
WH =	white