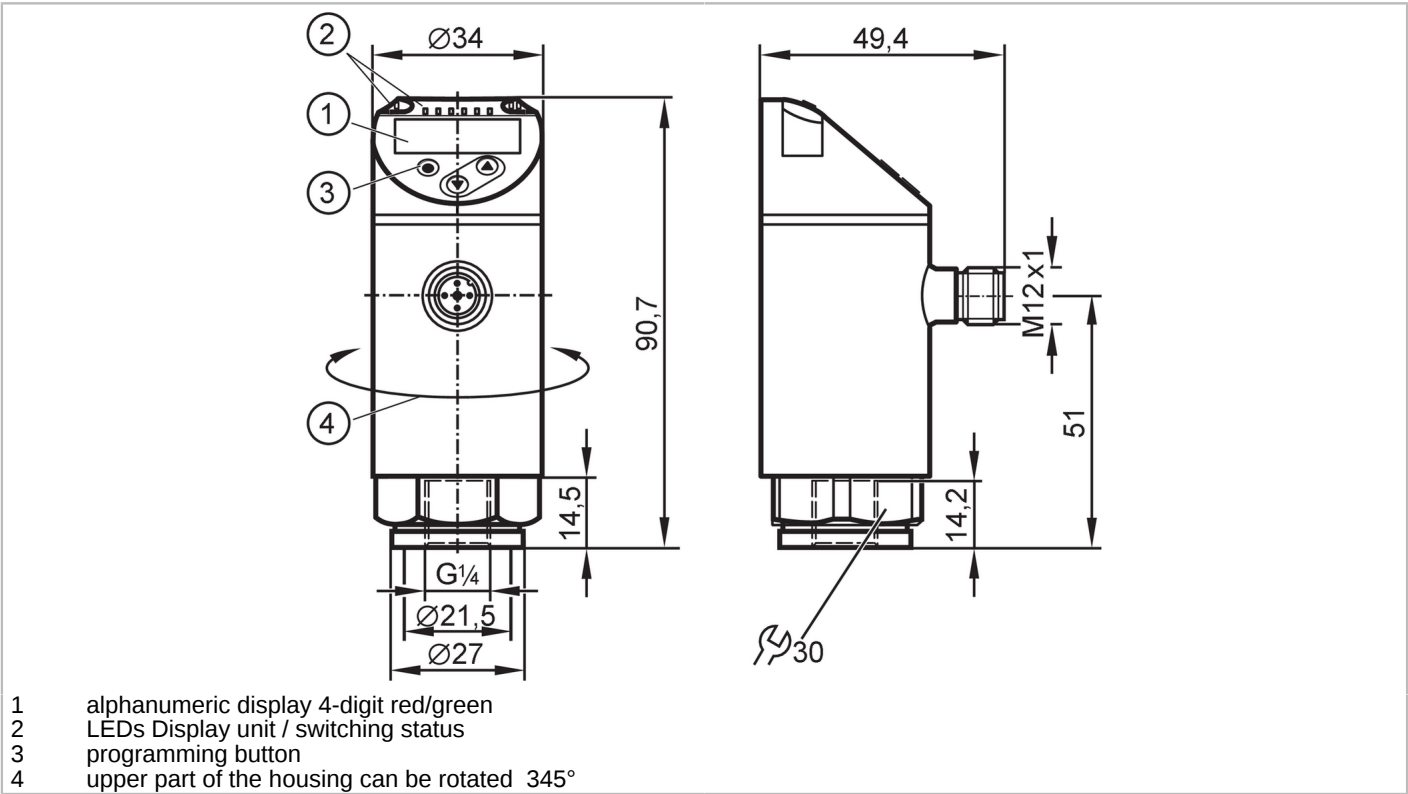


PN3094



Pressure sensor with display

PN-010-RER14-MFRKG/US/ IV



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analogue 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		



Pressure sensor with display

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

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

Response times

Response time [ms]	< 3
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
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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 type	A						
Process data analogue	1						
Process data binary	1						
Supported DeviceIDs	<table> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>Factory setting / CMPT = 2</td><td>431</td></tr> <tr> <td>Status_B High Resolution / CMPT = 3</td><td>615</td></tr> </table>	Type of operation	DeviceID	Factory setting / CMPT = 2	431	Status_B High Resolution / CMPT = 3	615
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 under "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



Pressure sensor with display

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

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 no.	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		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 the lubrication, the seal and the pressure load)
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.
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Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



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Connection



OUT1 switching output

IO-Link

OUT2 analogue output

colours to DIN EN 60947-5-2

Core colours :

BK = black
BN = brown
BU = blue
WH = white