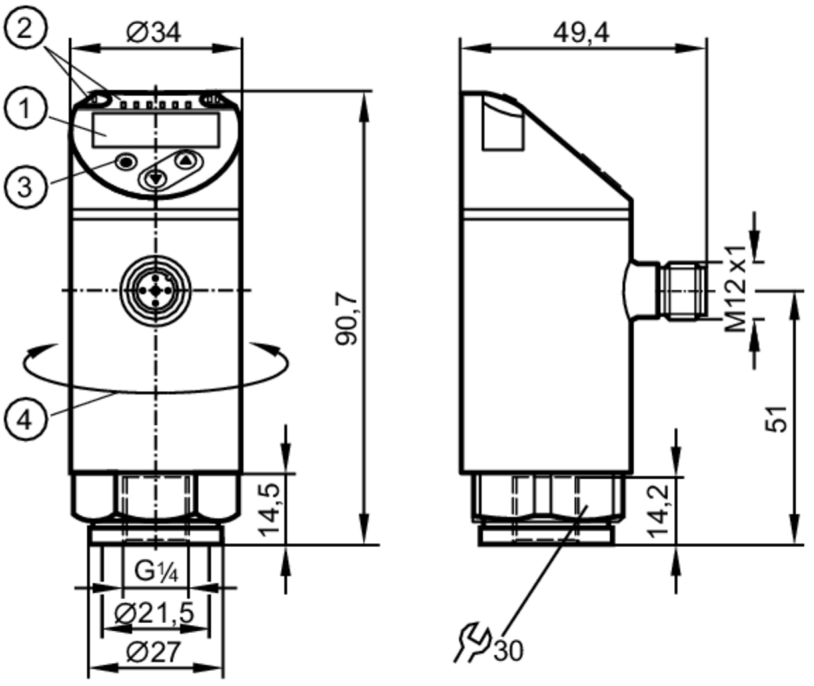
PN7096

Pressure sensor with display

PN-2,5-RER14-QFRKG/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: 2		
Measuring range		0...2.5 bar	0...2500 mbar	0...36.2 psi	0...250 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		50 bar	725 psi	5000 kPa
Pressure rating		20 bar	290 psi	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		

PN7096

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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		0...2.5 bar	0...2500 mbar	0...36.2 psi	0...250 kPa
Factory setting / CMPT = 2				
Set point SP		0.02...2.5 bar	0.4...36.2 psi	2...250 kPa
Reset point rP		0.01...2.49 bar	0.2...36 psi	1...249 kPa
Min. difference between SP and rP		0.02 bar	0.2 psi	2 kPa
In steps of		0.01 bar	0.2 psi	1 kPa
Status_B High Resolution / CMPT = 3				
Set point SP		0.02...2.5 bar	0.3...36.3 psi	2...250 kPa
Reset point rP		0.01...2.49 bar	0.1...36.1 psi	1...249 kPa
Min. difference between SP and rP		0.02 bar	0.2 psi	2 kPa
In steps of		0.01 bar	0.1 psi	1 kPa
Accuracy / deviations				
Switch point accuracy	[X21]	< ± 0,5		
Repeatability	[X21]	< ± 0,1; (with temperature fluctuations < 10 K)		
Characteristics deviation	[X21]	< ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting)		
Hysteresis deviation	[X21]	< ± 0,25		
Long-term stability	[X21]	< ± 0,05; (per 6 months)		
Temperature coefficient zero point	[X22]	< ± 0,2; (-0...80 °C)		
Temperature coefficient span	[X22]	< ± 0,2; (-0...80 °C)		
Response times				
Response time	[ms]	< 3		
Delay time programmable dS, dr	[s]	0...50		

PN7096

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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	
SIO mode		yes	
Required master port type		A; (when pin 2 not connected: B)	
Process data analogue		1	
Process data binary		2	
Supported DeviceIDs	**Type of operation**	**DeviceID**	
	Factory setting / CMPT = 2	404	
	PN7006	312	
	Status_B High Resolution / CMPT = 3	602	
Note		For further information please see the IODD PDF file under "Downloads"	
Factory setting / CMPT = 2			
Profiles		Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis	
Min. process cycle time	[ms]	2.3	
IO-Link resolution pressure	[bar]	0.01	
IO-Link resolution pressure	[MPa]	0.0001	
IO-Link process data (cyclical)	**function**	**bit length**	
	pressure	14	
	binary switching information	2	
IO-Link functions (acyclical)		application specific tag	
Status_B High Resolution / CMPT = 3			
Profiles		Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)	
Min. process cycle time	[ms]	3	
IO-Link resolution pressure	[bar]	0.001	
IO-Link resolution pressure	[MPa]	0.0001	
IO-Link process data (cyclical)	**function**	**bit length**	
	pressure	16	
	device status	4	
	binary switching information	2	
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)	

PN7096

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PN-2,5-RER14-QFRKG/US/ /V

Vibration resistance		DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF	[ANN]	260	
UL approval		UL Approval no.	J001
Pressure Equipment Directive		Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight	[g]	234.5	
Materials		stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC	
Materials (wetted parts)		stainless steel (1.4404 / 316L); 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	
Restrictor element integrated		no (can be retrofitted)	

Displays / operating elements

Display		Display unit	3 x LED, green (bar, psi, kPa)
		switching status	2 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: gold-plated

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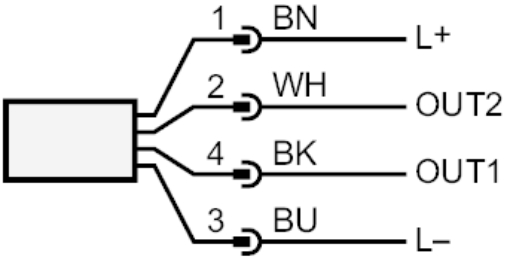
Connection



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