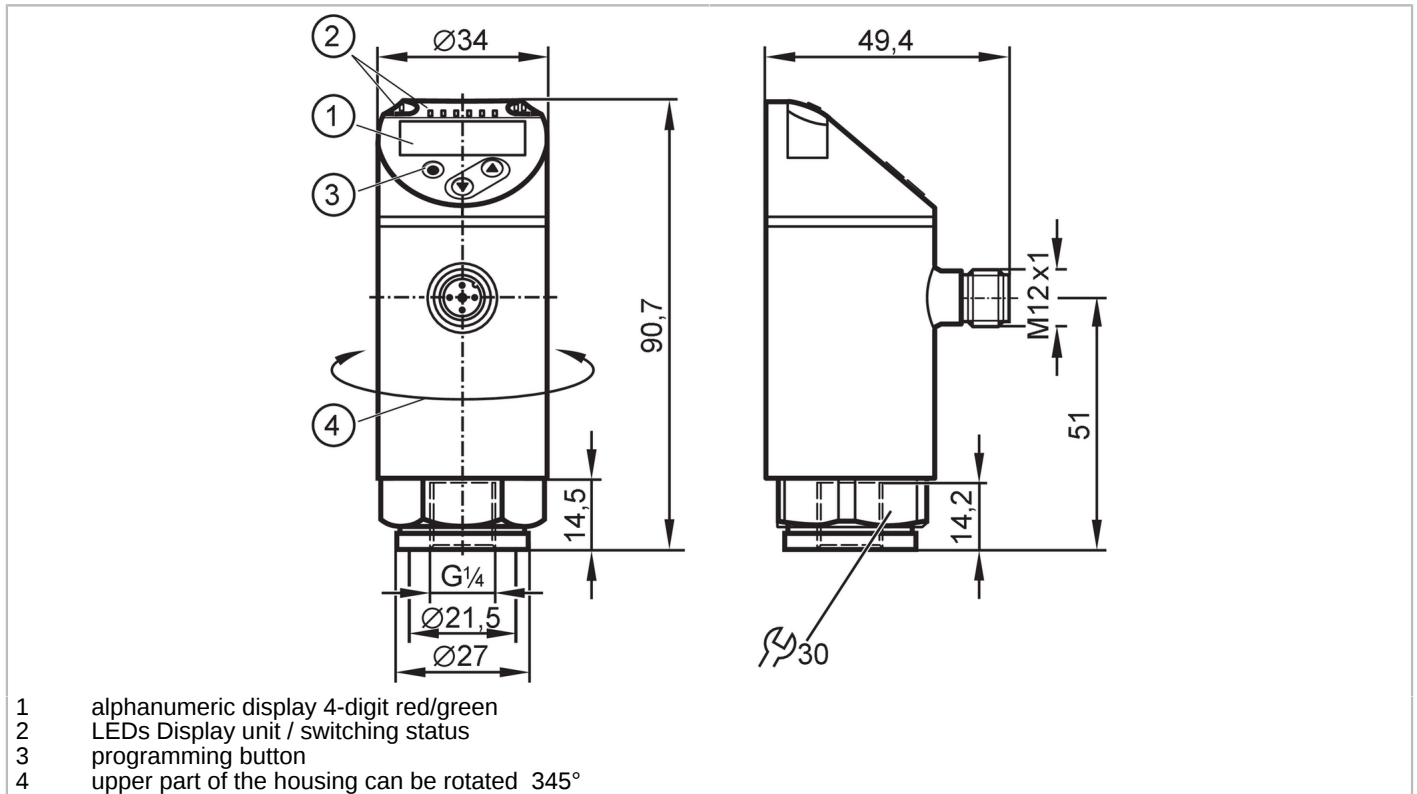


# PN2015



## Pressure sensor with display

PN-006-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	-1...6 bar	-14.5...87 psi	-100...600 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. burst pressure	100 bar	1500 psi	10000 kPa
Pressure rating	40 bar	600 psi	4000 kPa
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: 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	-1...6 bar	-14.5...87 psi	-100...600 kPa
Set point SP	-0.95...6 bar	-13.8...87 psi	-95...600 kPa
Reset point rP	-0.98...5.97 bar	-14.2...86.6 psi	-98...597 kPa
Analogue start point	-1...4.8 bar	-14.5...69.6 psi	-100...480 kPa
Analogue end point	0.2...6 bar	2.9...87 psi	20...600 kPa
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 [% 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)		



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Notes on the accuracy / deviation	switch point accuracy, linearity error under DNV GL: <math>\pm 1\%</math>: <math>\pm 1\%</math>
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### Response times

Response time [ms]	<math>< 1.5</math>
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	
Profiles	Smart Sensor - SSP 3.1	Measuring Sensor
	Common - I&D	Identification and Diagnosis
SIO mode	yes	
Required master port type	A; (when pin 2 not connected: B)	
Min. process cycle time [ms]	3	
IO-Link resolution pressure [bar]	0.002	
IO-Link process data (cyclical)	<b>function</b>	<b>bit length</b>
	pressure	16
	device status	4
	binary switching information	2
IO-Link functions (acyclical)	application specific tag	
Supported DeviceIDs	<b>Type of operation</b>	<b>DeviceID</b>
	default	1203
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]	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	



## Pressure sensor with display

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Mechanical data	
Weight [g]	246.1
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 (DIN EN ISO 1179-2)
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

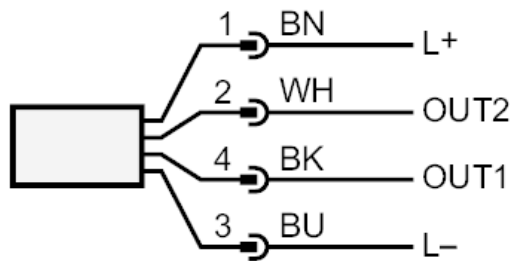
Remarks	
Pack quantity	1 pcs.

### Electrical connection

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



### Connection



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