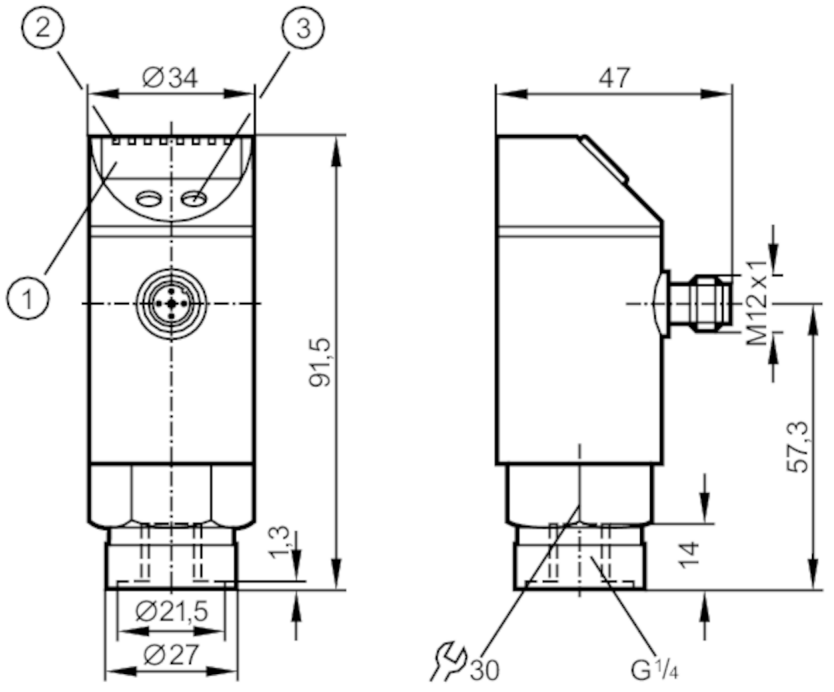
PN2024

Pressure sensor with display

PN-010-RBR14-MFRKG/US/ /V

phase-out article

Alternative articles: PN2094
When selecting an alternative article and accessories please note that technical data may differ!



1 alphanumeric display 4-digit
2 LEDs Display unit / switching status
3 programming button

Product characteristics				
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1			
Measuring range	-1...10 bar	-14.5...145 psi	-100...1000 kPa	-0.1...1 MPa
Process connection	threaded connection G 1/4 internal thread			
Application				
Special feature	Gold-plated contacts			
Application	for industrial applications			
Media	liquids and gases			
Medium temperature [°C]	-25...80			
Min. bursting pressure	150 bar	2175 psi	15 MPa	
Pressure rating	75 bar	1088 psi	7.5 MPa	
Type of pressure	relative pressure			
Electrical data				
Operating voltage [V]	18...32 DC; (to SELV/PELV)			
Current consumption [mA]	< 35			
Min. insulation resistance [MΩ]	100; (500 V DC)			
Protection class	III			

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Reverse polarity protection		yes			
Power-on delay time	[s]	0.3			
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 1:4)			
Max. load	[Ω]	(Ub - 10 V) / 20 mA			
Analogue voltage output	[V]	0...10; (scalable 1:4)			
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	-100...1000 kPa	-0.1...1 MPa
Set point SP		-0.88...10 bar	-12.8...145 psi	-0.088...1 MPa	
Reset point rP		-0.94...9.94 bar	-13.6...144.2 psi	-0.094...0.994 MPa	
Analogue start point		-1...7.26 bar	-14.6...105.2 psi	-0.1...0.726 MPa	
Analogue end point		1.76...10 bar	25.4...145 psi	0.176...1 MPa	
In steps of		0.02 bar	0.29 psi	0.002 MPa	
Factory setting			SP1 = 2.50 bar	rP1 = 2.30 bar	
			SP2 = 7.50 bar	rP2 = 7.30 bar	
			ASP = 0.00 bar	AEP = 10.00 bar	
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]	< ± 0,1; (Turn down 1:1; per year)			

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Temperature coefficient zero point [% of the span / 10 K]		< ± 0,1; (-25...80 °C)	
Temperature coefficient span [% of the span / 10 K]		< ± 0,2; (-25...80 °C)	
Response times			
Response time	[ms]	< 1.5	
Damping process value dAP	[s]	0.01...4	
Damping for the analogue output dAA	[s]	0.01...4	
Max. response time analogue output	[ms]	3	
Software / programming			
Parameter setting options		hysteresis / window; normally open / normally closed; switching logic; current/voltage output; Damping; adaptation of displayed values; display can be rotated and switched off; Display unit; zero point; span	
Interfaces			
Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	
IO-Link revision		1.0	
Profiles		no profile	
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	60
Operating conditions			
Ambient temperature	[°C]	-25...80	
Storage temperature	[°C]	-40...100	
Protection		IP 65	
Tests / approvals			
EMC		EN 61000-4-2 ESD	4 kV CD / 8 kV AD
		EN 61000-4-3 HF radiated	10 V/m
		EN 61000-4-4 Burst	2 kV
		EN 61000-4-5 Surge	0,5/1 kV
		EN 61000-4-6 HF conducted	10 V
Shock resistance		DIN IEC 68-2-27	50 g (11 ms)
Vibration resistance		DIN IEC 68-2-6	20 g (10...2000 Hz)
MTTF	[years]	162.52	
Pressure Equipment Directive		Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	262	
Materials		stainless steel (304/1.4301); stainless steel (316L/1.4404); PC; PBT; PEI; FKM; PTFE	
Materials (wetted parts)		stainless steel (303/1.4305); ceramics; FKM	

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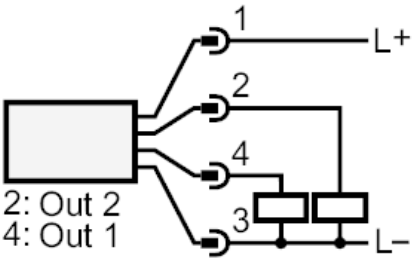
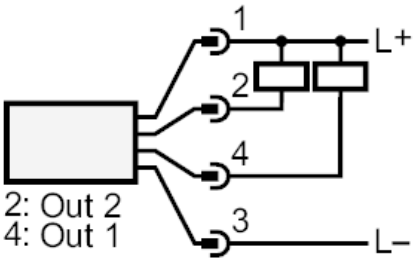
Min. pressure cycles	100 million	
Process connection	threaded connection G 1/4 internal thread	
Restrictor element integrated	no (can be retrofitted)	
Displays / operating elements		
Display	Display unit	3 x LED, green
	switching status	2 x LED, yellow
	function display	alphanumeric display, 4-digit
	measured values	alphanumeric display, 4-digit
Remarks		
Pack quantity	1 pcs.	

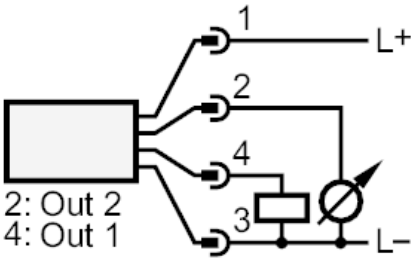
Electrical connection

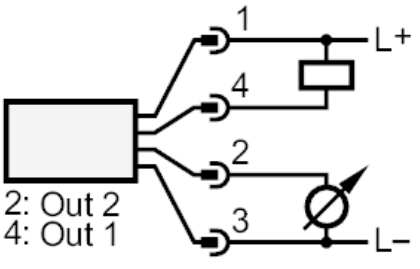
Connector: 1 x M12; coding: A; Contacts: gold-plated

Connection









OUT1	switching output IO-Link
OUT2	switching output analogue output