

PN2024

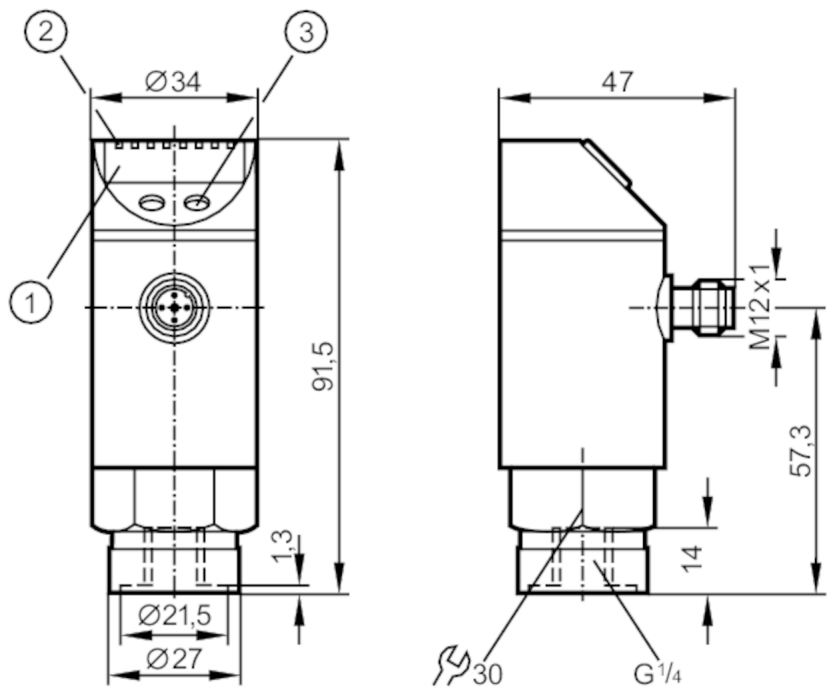


Pressure sensor with display

PN-010-RBR14-MFRKG/US/ IV

discontinued article

replaced by: PN2094 – Discontinuation date: 31.03.2016



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



Product characteristics				
Output signal	switching signal; analogue signal; IO-Link; (configurable)			
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			
Pressure rating	75 bar	1088 psi	7.5 MPa	
Min. bursting pressure	150 bar	2175 psi	15 MPa	
Type of pressure	relative pressure			



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Electrical data				
Operating voltage	[V]	18...32 DC; (according to EN 50178 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		
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]	(U _b - 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
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		< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)		
Characteristics deviation		< ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting)		



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	[% of the span]	
Hysteresis deviation		$< \pm 0,1$; (Turn down 1:1)
	[% of the span]	
Long-term stability		$< \pm 0,1$; (Turn down 1:1; per year)
	[% of the span]	
Temperature coefficient zero point		$< \pm 0,1$; (-25...80 °C)
	[% of the span / 10 K]	
Temperature coefficient span		$< \pm 0,2$; (-25...80 °C)
	[% of the span / 10 K]	

Response times

Response time	[ms]	< 1.5
Damping for the switching output 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
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Interfaces

Communication interface	IO-Link
Transmission type	COM2 (38,4 kBaud)
IO-Link revision	1.0
IO-Link device ID	60 d / 00 00 3C h
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

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	



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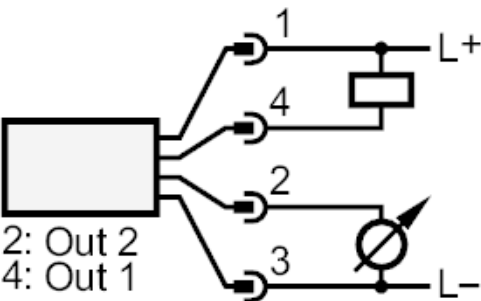
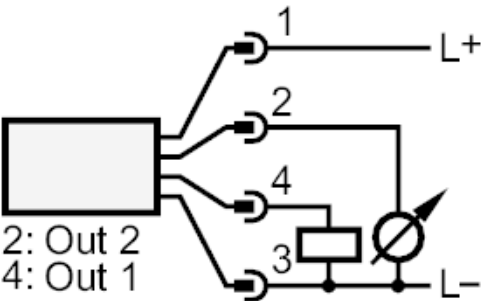
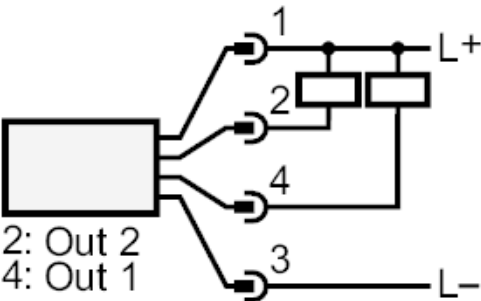
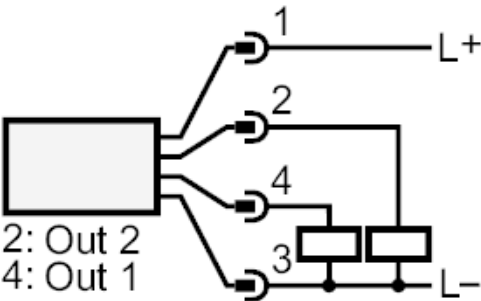
Mechanical data		
Weight	[g]	262
Materials	stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); PC; PBT; PEI; FKM; PTFE	
Materials (wetted parts)	stainless steel (1.4305 / 303); ceramics; FKM	
Min. pressure cycles	100 million	
Process connection	threaded connection G 1/4 internal thread	
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		
Notes	discontinued article	
Pack quantity	1 pcs.	
Electrical connection		
Connector: 1 x M12; Contacts: gold-plated		
		



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Connection



OUT1	switching output
OUT2	switching output
	analogue output

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