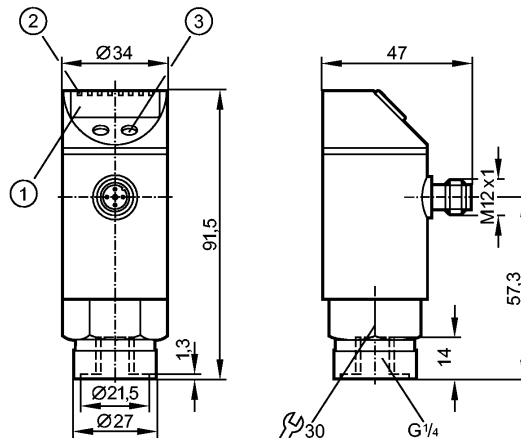


**PN2023**

PN-025-RBR14-MFRKG/US/ IV

Pressure sensors

New generation available: PN2093



- 1: 4-digit alphanumeric display
- 2: LEDs (display unit / switching status)
- 3: Programming button



**Product characteristics**

Combined pressure sensor
Quick disconnect
Zero and span adjustable
Function programmable
Process connection: G 1/4 I
2 outputs
OUT1 = switching output
OUT2 = switching output or analog output
4-digit alphanumeric display
Measuring range: -1...25 bar / -14.5...362.5 psi / -0.1...2.5 MPa

**Application**

Application	Type of pressure: relative pressure Liquids and gases		
Pressure rating	100 bar	1450 psi	10 MPa
Bursting pressure min.	350 bar	5075 psi	35 MPa
Medium temperature [°C]	-25...80		

**Electrical data**

Electrical design	DC PNP/NPN		
Operating voltage [V]	18...32 DC <sup>1)</sup>		
Current consumption [mA]	< 35		
Insulation resistance [MΩ]	> 100 (500 V DC)		
Protection class	III		
Reverse polarity protection	yes		

**Outputs**

Output	2 outputs OUT1 = switching output OUT2 = switching output or analog output		
Output function	2 x normally open / closed programmable or 1 x normally open / closed programmable + 1 x analog (4...20 mA / 0...10 V; programmable 1:4)		

**PN2023**

PN-025-RBR14-MFRKG/US/ /V

**Pressure sensors**

Current rating	[mA]	2 x 250
Voltage drop	[V]	< 2
Short-circuit protection		yes (non-latching)
Overload protection		yes
Switching frequency	[Hz]	≤ 500
Analog output		4...20 mA / 0...10 V
Max. load	[Ω]	4...20 mA: max. (U <sub>b</sub> - 10 V) x 50 / 0...10 V: min. 2000

**Measuring / setting range**

Measuring range	-1...25 bar	-14.5...362.5 psi	-0.1...2.5 MPa
Setting range			
Set point, SP	-0.80...25.00 bar	-11.5...362.5 psi	-0.08...2.50 MPa
Reset point, rP	-0.90...24.90 bar	-13.0...361.0 psi	-0.09...2.49 MPa
Analog start point, ASP	-1.00...18.75 bar	-14.5...272.0 psi	-0.10...1.88 MPa
Analog end point, AEP	5.25...25.00 bar	76.0...362.5 psi	0.53...2.50 MPa
in steps of	0.05 bar	0.5 psi	0.01 MPa
Factory setting	SP1 = 6.25 bar; rP1 = 5.75 bar SP2 = 18.75 bar; rP2 = 18.25 bar ASP = 0.00 bar; AEP = 25.00 bar		

**Accuracy / deviations**

Accuracy / deviations (in % of the span) Turn down 1:1	
Switch point accuracy	< ± 0.4
Characteristics deviation *)	< ± 0.25 (BFSL) / < ± 0.5 (LS)
Hysteresis	< ± 0.1
Repeatability **)	< ± 0.1
Long-term stability ***)	< ± 0.1
Temperature coefficients (TEMPCO) in the temperature range 0...80° C (in % of the span per 10 K)	
Greatest TEMPCO of the zero point	< ± 0.2
Greatest TEMPCO of the span	< ± 0.2

**Reaction times**

Power-on delay time	[s]	0.3
Min. response time switching output	[ms]	1.5
Damping for the switching output (dAP)	[s]	0; 0.01...4.00
Damping for the analog output (dAA)	[s]	0; 0.01...4.00
Response time analog output	[ms]	3
Integrated watchdog		yes

**Software / programming**

Programming options	hysteresis / window function; N.O. / N.C; output polarity; current / voltage outputs; damping; calibration of displayed values; display can be rotated / deactivated; display unit
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**Interfaces**

IO-Link Device	
Transfer type	COM2 (38.4 kBaud)
IO-Link revision	1.0
IO-Link Device ID	59 d / 00 00 3B h

**PN2023**

PN-025-RBR14-MFRKG/US/ /V

**Pressure sensors**

Profiles	no profile
SIO mode	yes
Required master port class	A
Process data analogue	1
Process data binary	2
Min. process cycle time [ms]	2.3

Environment		
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]		131

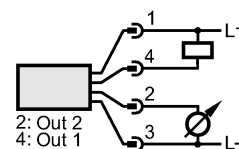
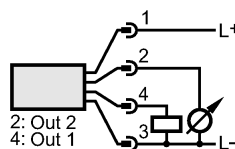
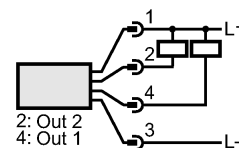
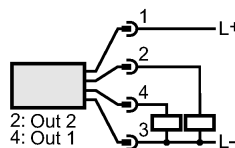
Mechanical data		
Process connection		G ¼ I
Materials (wetted parts)		stainless steel (303S22); ceramics; FPM (Viton)
Housing materials		stainless steel (304S15); stainless steel 316L / 1.4404; PC (Makrolon); PBT (Pocan); PEI; FPM (Viton); PTFE
Switching cycles min.		100 million
Weight [kg]		0.263

Displays / operating elements		
Display	Display unit	3 x LED green
	Switching status	2 x LED yellow
	Function display	4-digit alphanumeric display
	Measured values	4-digit alphanumeric display

Electrical connection		
Connection		M12 connector; gold-plated contacts

**Wiring**

Programming of the output function (OUT1 / OUT2):  
 Hno = hysteresis / normally open  
 Hnc = hysteresis / normally closed  
 Fno = window function / normally open  
 Fnc = window function / normally closed  
 Complementary outputs:  
 output 1: = Hno, output 2: = Hnc  
 (with the same SP / rP)



Programming of the analog output (OUT2):  
 I = current output (4...20 mA)  
 U = voltage output (0...10 V)



**PN2023**

PN-025-RBR14-MFRKG/US/ IV

**Pressure sensors****Remarks**

Remarks

- 1) to EN50178, SELV, PELV
- \*) BFSL = Best Fit Straight Line / LS = Limit Value Setting
- \*\*\*) with temperature fluctuations < 10 K
- \*\*\*) in % of the span per year

Pack quantity

[piece]

1

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**New generation available: PN2093**