

PN2009

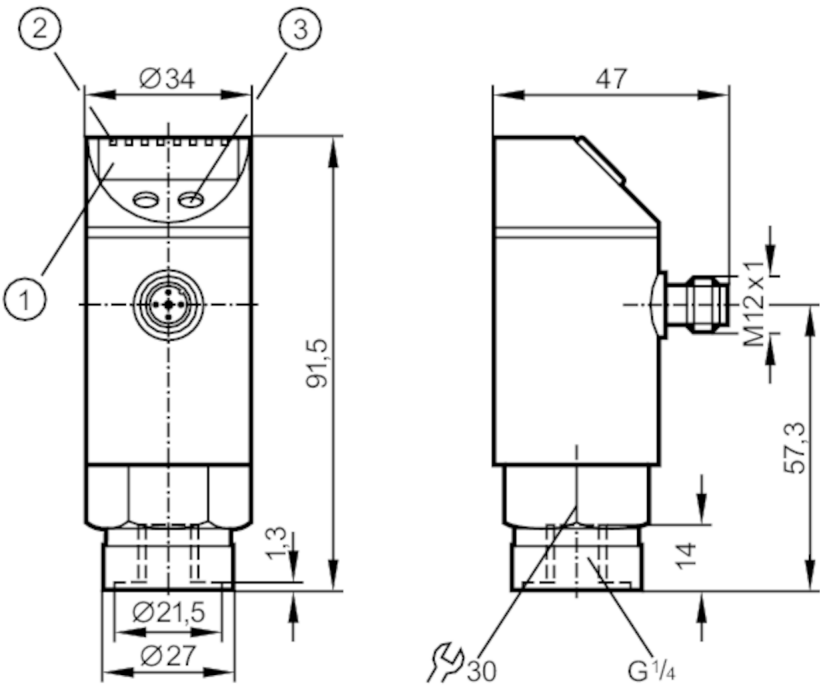


Pressure sensor with display

PN-1-1BRBR14-MFRKG/US/ IV

Article to be discontinued

Alternative articles: PN2099
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 analog outputs: 1	
Measuring range		-1...1 bar	-1000...1000 mbar -14.5...14.5 psi
Process connection		threaded connection G 1/4 Internal thread	
Application			
System		gold-plated contacts	
Application		for industrial applications	
Media		liquids and gases	
Medium temperature [°C]		-25...80	
Min. bursting pressure		50000 mbar	725 psi
Pressure rating		20000 mbar	290 psi
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	



Pressure sensor with display

PN-1-1BRBR14-MFRKG/US/ IV

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 analog outputs: 1
------------------------------	---

Outputs

Total number of outputs	2
Output signal	switching signal; analog signal; IO-Link; (configurable)
Electrical design	PNP/NPN
Number of digital outputs	2
Output function	normally open / closed; (configurable)
Max. voltage drop switching output DC [V]	2
Permanent current rating of switching output DC [mA]	250
Switching frequency DC [Hz]	< 500
Number of analog outputs	1
Analog current output [mA]	4...20; (scalable 1:4)
Max. load [Ω]	(U _b - 10 V) / 20 mA
Analog voltage output [V]	0...10; (scalable 1:4)
Min. load resistance [Ω]	2000
Short-circuit protection	yes
Type of short-circuit protection	yes (non-latching)
Overload protection	yes

Measuring/setting range

Measuring range	-1...1 bar	-1000...1000 mbar	-14.5...14.5 psi
Set point SP	-988...1000 mbar		-14.3...14.5 psi
Reset point rP	-996...992 mbar		-14.4...14.4 psi
Analog start point	-996...500 mbar		-14.4...7.3 psi
Analog end point	-500...1000 mbar		-7.2...14.5 psi
In steps of	4 mbar		0.1 psi
Factory setting		SP1 = -500 mbar	rP1 = -540 mbar
		SP2 = 500 mbar	rP2 = 460 mbar
		ASP = -996 mbar	AEP = 1000 mbar

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)



Pressure sensor with display

PN-1-1BRBR14-MFRKG/US/ IV

Temperature coefficient zero point [% of the span / 10 K]	< ± 0,2; (-25...80 °C)
Temperature coefficient span [% of the span / 10 K]	< ± 0,2; (-25...80 °C)

Reaction times

Response time [ms]	< 1.5
Damping process value dAP [s]	0.01...4
Damping for the analog output dAA [s]	0.01...4
Max. response time analog output [ms]	3

Software / programming

Parameter setting options	hysteresis / window; normally open / 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 class	A				
Process data analog	1				
Process data binary	2				
Min. process cycle time [ms]	2.3				
Supported DeviceIDs	<table> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>default</td><td>64</td></tr> </table>	Type of operation	DeviceID	default	64
Type of operation	DeviceID				
default	64				

Operating conditions

Ambient temperature [°C]	-25...80
Storage temperature [°C]	-40...100
Protection	IP 65

Tests / approvals

EMC	<table> <tr> <td>EN 61000-4-2 ESD</td><td>4 kV CD / 8 kV AD</td></tr> <tr> <td>EN 61000-4-3 HF radiated</td><td>10 V/m</td></tr> <tr> <td>EN 61000-4-4 Burst</td><td>2 kV</td></tr> <tr> <td>EN 61000-4-5 Surge</td><td>0,5/1 kV</td></tr> <tr> <td>EN 61000-4-6 HF conducted</td><td>10 V</td></tr> </table>	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
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										
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request										

Mechanical data

Weight [g]	262
Material	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



Pressure sensor with display

PN-1-1BRBR14-MFRKG/US/ IV

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	5 x LED, green
	Switching status	2 x LED, yellow
	Function display	alphanumeric display, 4-digit
	Measured values	alphanumeric display, 4-digit
Display unit	mbar; kPa; psi; inH2O; inHg	

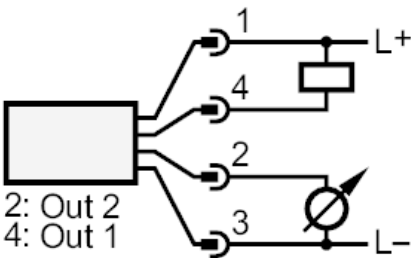
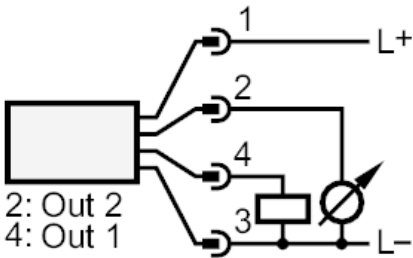
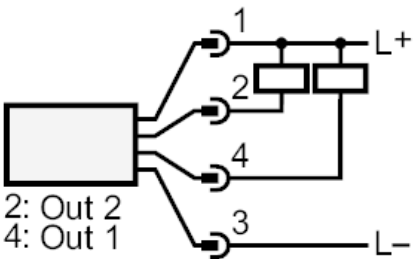
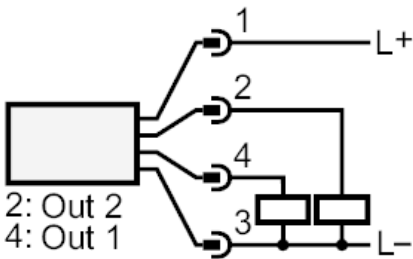
Remarks	
Pack quantity	1 pcs.

Electrical connection

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



Connection



OUT1	Switching output
	IO-Link
OUT2	Switching output
	analog output