

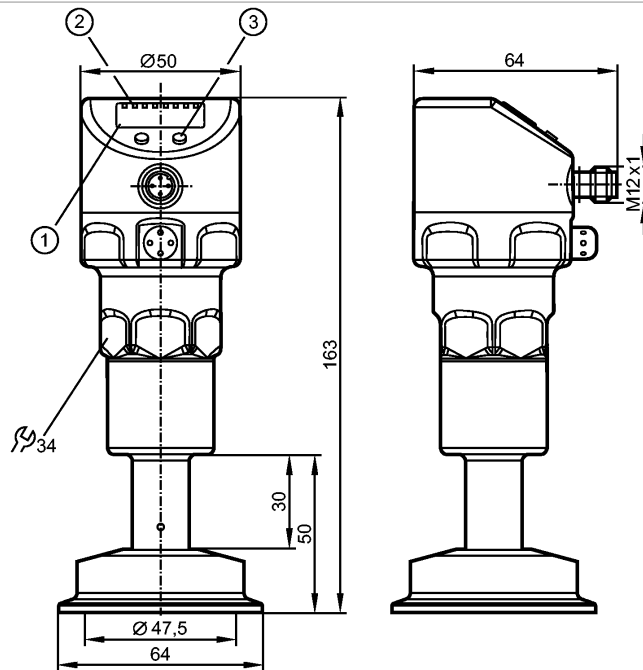


PI2309

PI-1-1BREZ02-MFRKG/US/ /P



Pressure sensors



- 1: 4-digit alphanumeric display
- 2: status LEDs
- 3: Programming button



EC 1935/2004 EHEDG Certified FDA

IO-Link

Including free 6-point calibration verification certificate.

Product characteristics

Combined pressure sensor
Quick disconnect
Function programmable
Membrane diameter: 47.5 mm
Fill liquid for pressure transmission: Food grade oil (FDA conforming)
Process connection: Clamp DN 51 / 2"
2-wire connection technology: analogue output
3-wire connection technology: 2 outputs OUT1 = switching output OUT2 = switching output or analogue output
4-digit alphanumeric display
Measuring range: -1000...1000 mbar / -14.5...14.5 psi

Application

Application	Type of pressure: relative pressure Hygienic systems, viscous media and liquids with suspended particles Liquids and gases	
Pressure rating	10000 mbar	145 psi
Bursting pressure min.	30000 mbar	435 psi
Medium temperature [°C]	-25...200 ****) / -25...160 *****)	

Electrical data

Electrical design	2 wires DC / 3 wires DC PNP/NPN	
Operating voltage [V]	20...32 DC (2L) / 18...32 DC (3L)	



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Current consumption	[mA]	3.6...21 (2L) / < 45 (3L)
Insulation resistance	[MΩ]	> 100 (500 V DC)
Protection class		III
Reverse polarity protection		yes

Outputs

Output		2-wire connection technology: analogue output 3-wire connection technology: 2 outputs OUT1 = switching output OUT2 = switching output or analogue output
Output function		1 x normally open / normally closed programmable + 1 x normally open / normally closed programmable or 1 x analog (4...20 / 20...4 mA, scalable)
Current rating	[mA]	250; (3L)
Voltage drop	[V]	2; (3L)
Short-circuit protection		yes (non-latching)
Overload protection		yes
Switching frequency	[Hz]	--- (2L) / 125 (3L)
Analog output		I: 4...20 mA (Ineg: 20...4 mA)
Max. load	[Ω]	2L: 300 3L: max. (U _b - 10 V) / 20 mA

Measuring / setting range

Display unit	mbar, kPa, psi, inH ₂ O, mWS, % der Spanne	
Measuring range	-1000...1000 mbar	-14.5...14.5 psi
Setting range		
Set point, SP	-998...1000 mbar	-14.45...14.50 psi
Reset point, rP	-1000...998 mbar	-14.50...14.45 psi
Analog start point, ASP	-1000...500 mbar	-14.50...7.25 psi
Analog end point, AEP	-500...1000 mbar	-7.25...14.50 psi
in steps of	1 mbar	0.05 psi
Factory setting	SP1 = -500 mbar; rP1 = -540 mbar SP2 = 500 mbar; rP2 = 460 mbar ASP = -1000 mbar; AEP = 1000 mbar	

Accuracy / deviations

Accuracy / deviations (in % of the span) Turn down 1:1	
Switch point accuracy	< ± 0.2
Characteristics deviation *)	< ± 0.2
Linearity	< ± 0.15
Hysteresis	< ± 0.15
Repeatability **)	< ± 0.1
Long-term stability ***)	< ± 0.1
Temperature coefficients (TEMPCO) in the temperature range 0...70° C (in % of the span per 10 K)	
Greatest TEMPCO of the zero point	< ± 0.3
Greatest TEMPCO of the span	< ± 0.15

Reaction times

Power-on delay time	[s]	1 (2L) / 0.5 (3L)
Min. response time switching output	[ms]	--- (2L) / 3 (3L)



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Damping for the switching output (dAP) [s]	0.00...30.00
Damping for the analog output (dAA) [s]	0.01...99.99
Step response time analogue output [ms]	45 (2L) / 7 (3L)
Integrated watchdog	yes

Interfaces

IO-Link Device	
Transfer type	COM2 (38.4 kBaud)
IO-Link revision	1.0
SDCI standard	IO-Link Communication Specification, Version 1.0, January 2009, Ordner No: 10.002
IO-Link Device ID	108 d / 00 00 6C h
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, at max. 160 °C medium temperature (-25...60 °C at max. 200 °C medium temperature)
Storage temperature [°C]	-25...100
Protection	IP 67 / IP 68 / IP 69K

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]	141

Mechanical data

Process connection	Clamp DN 51 / 2"
Materials (wetted parts)	stainless steel 316L / 1.4435
Surface characteristics Ra / Rz of the wetted part(s)	< 0.38 / -
Housing materials	stainless steel 316L / 1.4404; stainless steel 316L / 1.4435; PBT; PEI; PFA
Switching cycles min.	10 million
Weight [kg]	1.06

Displays / operating elements

Display	Display unit LED green Switching status LED yellow Function display 4-digit alphanumeric display Measured values 4-digit alphanumeric display
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Electrical connection

Connection	M12 connector; gold-plated contacts
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Wiring

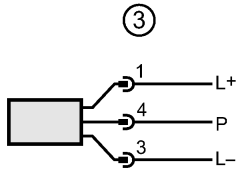
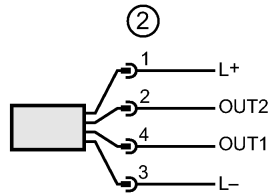
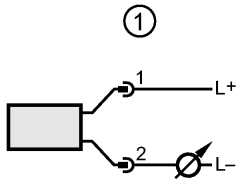


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- 1 connection for 2-wire operation
- 2 connection for 3-wire operation
- 3 connection for IO-Link parameter setting (P = communication via IO-Link)

Remarks

Remarks	<p>(2L) = value for 2-wire operation (3L) = value for 3-wire operation *) linearity, incl. hysteresis and repeatability; (limit value setting to DIN 16086) **) with temperature fluctuations < 10 K ***) in % of the span per year ****) at max. 65 °C ambient temperature *****) at max. 80 °C ambient temperature</p>
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Pack quantity	[piece]	1
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