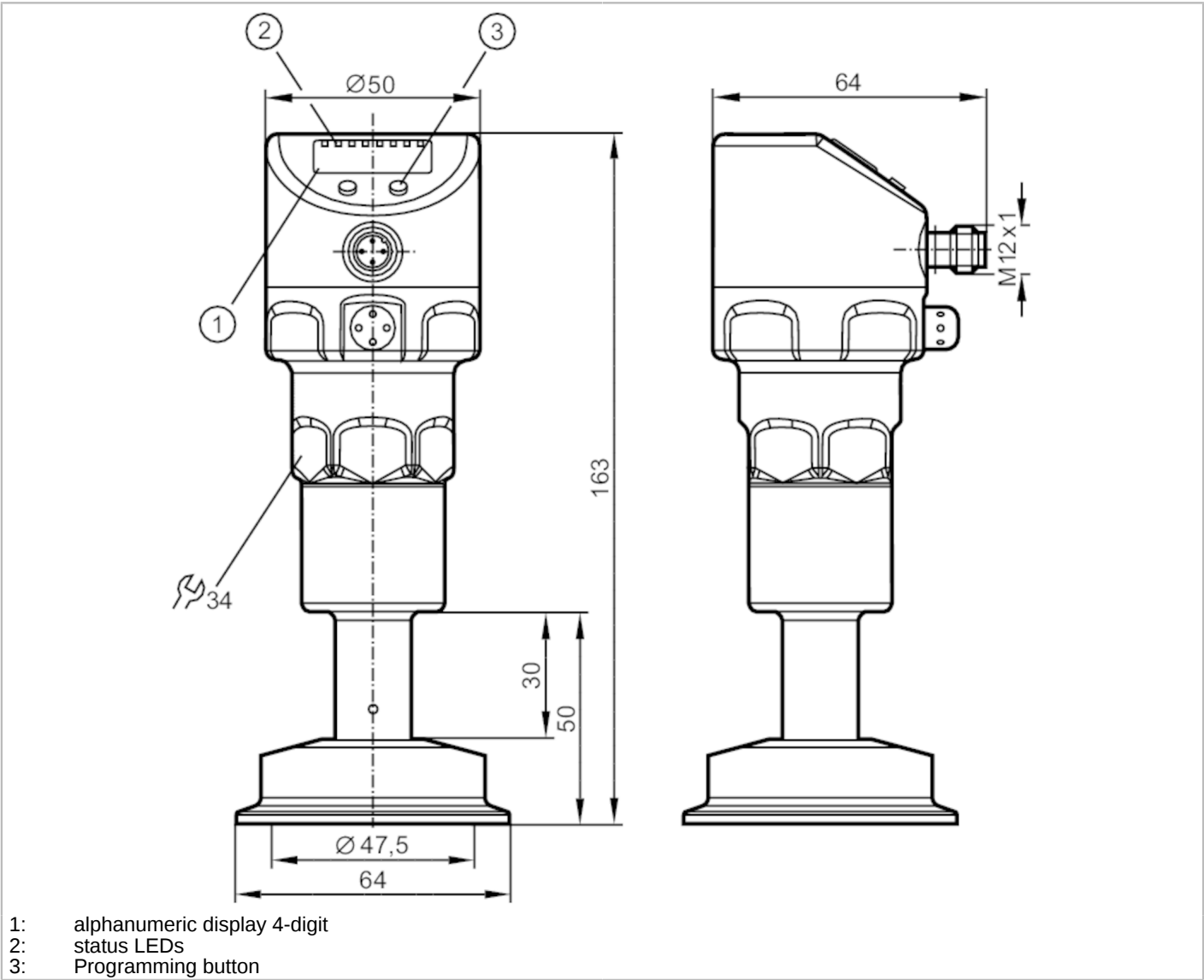


PI2309



Flush pressure sensor with display

PI-1-1BREZ02-MFRKG/US/ IP



   **EC 1935/2004** EHEDG Certified **FCM**   **UK CA**

Product characteristics			
Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1		
Measuring range	-1000...1000 mbar	-14.5...14.5 psi	-100...100 kPa
Process connection	Clamp DN50 (2") DIN 32676 (ISO 2852)		
Application			
System	gold-plated contacts		
Application	flush mountable for the food and beverage industry		
Media	viscous media and liquids with suspended particles; liquids and gases		
Medium temperature [°C]	-20...200; (-20...90 < 0 bar)		
Min. burst pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	10000 mbar	145 psi	1000 kPa
Type of pressure	relative pressure; vacuum		
Electrical data			
Min. insulation resistance [MΩ]	100; (500 V DC)		



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Protection class	III		
Reverse polarity protection	yes		
Integrated watchdog	yes		
2-wire			
Operating voltage	[V]	20...32 DC	
Current consumption	[mA]	3.6...21	
Power-on delay time	[s]	1	
3-wire			
Operating voltage	[V]	18...32 DC	
Current consumption	[mA]	< 45	
Power-on delay time	[s]	0.5	
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)		
Number of analog outputs	1		
Analog current output	[mA]	4...20, invertible; (scalable)	
Short-circuit protection	yes		
Type of short-circuit protection	yes (non-latching)		
Overload protection	yes		
2-wire			
Max. load	[Ω]	300	
3-wire			
Max. voltage drop switching output DC	[V]	2	
Permanent current rating of switching output DC	[mA]	250	
Switching frequency DC	[Hz]	125	
Max. load	[Ω]	(Ub - 10 V) / 20 mA	
Measuring/setting range			
Measuring range	-1000...1000 mbar	-14.5...14.5 psi	-100...100 kPa
Set point SP	-998...1000 mbar	-14.45...14.5 psi	-99.8...100 kPa
Reset point rP	-1000...998 mbar	-14.5...14.45 psi	-100...99.8 kPa
Analog start point	-1000...500 mbar	-14.5...7.25 psi	-100...50 kPa
Analog end point	-500...1000 mbar	-7.25...14.5 psi	-50...100 kPa
In steps of	1 mbar	0.05 psi	0.1 kPa
Factory setting		SP1 = -500 mbar	rP1 = -540 mbar
		SP2 = 500 mbar	rP2 = 460 mbar
		ASP = -1000 mbar	AEP = 1000 mbar



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Accuracy / deviations		
Switch point accuracy [% of the span]	< ± 0,2; (Turn down 1:1)	
Repeatability [% of the span]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)	
Characteristics deviation [% of the span]	< ± 0,2; (Turn down 1:1 , linearity, incl. hysteresis and repeatability , limit value setting to DIN EN IEC 62828-1)	
Linearity deviation [% of the span]	< ± 0,15; (Turn down 1:1)	
Zero-point stabilization [% of the span]	IO-Link, analog output	0,15
	Display, Switching output	0,2
Hysteresis deviation [% of the span]	< ± 0,15; (Turn down 1:1)	
Long-term stability [% of the span]	< ± 0,1; (Turn down 1:1; per year)	
Temperature coefficient zero point [% of the span / 10 K]	< ± 0,3; (0...200 °C)	
Temperature coefficient span [% of the span / 10 K]	< ± 0,15; (0...200 °C)	
Reaction times		
Damping process value dAP [s]	0...30	
Damping for the analog output dAA [s]	0.01...99.99	
2-wire		
Step response time analog output [ms]	45	
3-wire		
Min. response time of switching output (dAP) [ms]	3	
Step response time analog output [ms]	7	
Interfaces		
Communication interface	IO-Link	
Transmission 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	
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	Type of operation	DeviceID
	default	258
Operating conditions		
Ambient temperature [°C]	-25...80	
Note on ambient temperature	Medium temperature: ≤ 160 °C	



Flush pressure sensor with display

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Ambient temperature	[°C]	-25...65
Note on ambient temperature		Medium temperature: ≤ 200 °C
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
Note on approval		Including free 6-point calibration certificate.

Mechanical data

Weight	[g]	1200.3
Housing		tubular
Dimensions	[mm]	Ø 50 / L = 163
Material		stainless steel (1.4404 / 316L); stainless steel (1.4435 / 316L); PBT; PEI; PFA
Materials (wetted parts)		stainless steel (1.4435 / 316L)
Min. pressure cycles		10 million
Process connection		Clamp DN50 (2") DIN 32676 (ISO 2852)
Surface characteristics Ra/Rz of the wetted parts		Ra < 0.38 µm
Fill fluid for pressure transfer		NEOBEE (food grade, FDA compliant)
Diaphragm diameter	[mm]	47.5

Displays / operating elements

Display	Display unit	LED, green
	Switching status	LED, yellow
	Function display	alphanumeric display, 4-digit
	Measured values	alphanumeric display, 4-digit
Display unit		mbar; kPa; psi; inH2O; mWS; % of the span

Remarks

Pack quantity	1 pcs.
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PI2309

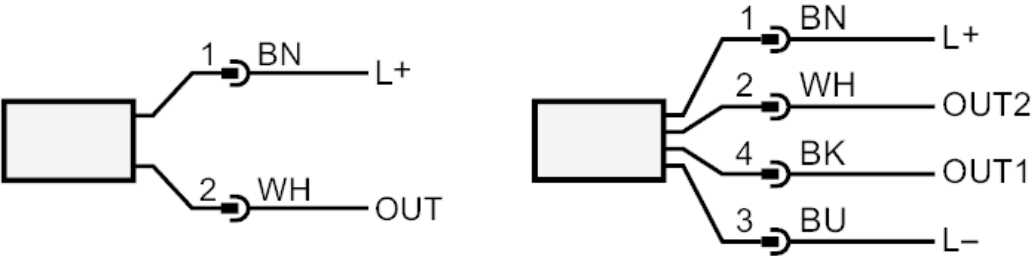


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Electrical connection

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



OUT	connection for 2-wire operation : analog output
OUT1	connection for 3-wire operation : Switching output
OUT2	IO-Link Switching output
	analog output
	Colors to DIN EN 60947-5-2
	Core colors :
BK =	black
BN =	brown
BU =	blue
WH =	white