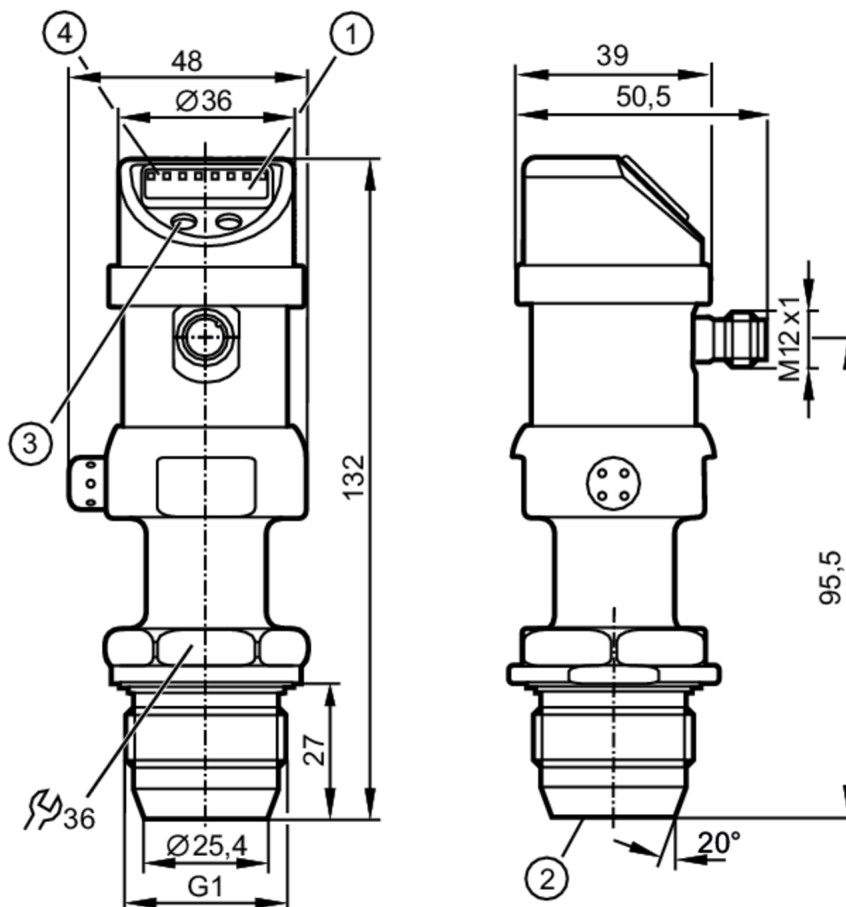


PI009A



Pressure sensor with display

PI-1-1BREA01-MFRKG/US/3D/3G /P



- 1 alphanumeric display 4-digit
- 2 recessed non flush mount measuring cell
- 3 Programming button
- 4 status LEDs



Product characteristics

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1			
Measuring range	-1...1 bar	-1000...1000 mbar	-14.5...14.5 psi	-100...100 kPa
Process connection	threaded connection G 1 external thread sealing cone			

Application

System	gold-plated contacts		
Application	food and beverage industry		
Installation	Freely rotatable housing 350°		
Media	viscous media and liquids with suspended particles; liquids and gases		
Medium temperature [°C]	-20...60; (when used outside the hazardous area; Ambient temperature: -25...85 °C; Medium temperature: -25...125 °C / 145 °C < 1h)		
Min. bursting pressure	30000 mbar	435 psi	3000 kPa
Pressure rating	10000 mbar	145 psi	1000 kPa
Type of pressure	relative pressure; vacuum		

Electrical data

Operating voltage [V]	18...32 DC
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Current consumption	[mA]	< 50
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	0.5
Measuring principle		hydrostatic
Integrated watchdog		yes

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 1; Number of analog outputs: 1
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Outputs

Total number of outputs	2
Output signal	switching signal; analog signal; (configurable)
Electrical design	PNP/NPN
Number of digital outputs	1
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]	6
Number of analog outputs	1
Analog current output [mA]	4...20, invertible; (scalable 1:4)
Max. load [Ω]	(U _b - 10 V) / 20 mA
Analog voltage output [V]	0...10, invertible; (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	-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	

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)
Hysteresis deviation	[% of the span]	< ± 0,15; (Turn down 1:1)
Long-term stability		< ± 0,1; (Turn down 1:1; per year)

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[% of the span]		
Temperature coefficient zero point		< ± 0,05; (0...70 °C)
[% of the span / 10 K]		
Temperature coefficient span		< ± 0,15; (0...70 °C)
[% of the span / 10 K]		
Reaction times		
Response time	[ms]	< 100
Damping process value dAP	[s]	0.1...100
Damping for the analog output dAA	[s]	0.1...100
Step response time analog output	[ms]	25
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	
Operating conditions		
Ambient temperature	[°C]	-20...60
Storage temperature	[°C]	-40...100
Protection		IP 65
Tests / approvals		
ATEX marking	 II 3D Ex tc IIIC T90°C Dc X	
	 II 3G Ex nA IIC T4 Gc X	
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]	163
Mechanical data		
Weight	[g]	513
Material	stainless steel (1.4404 / 316L); PC; PBT; PEI; FKM; PTFE	
Materials (wetted parts)	ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L); stainless steel (1.4404 / 316L); surface characteristics: Ra < 0,4 / Rz 4; PTFE; EPDM	
Min. pressure cycles	100 million	
Process connection	threaded connection G 1 external thread sealing cone	
Displays / operating elements		
Display	Display unit	6 x, 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	

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Remarks

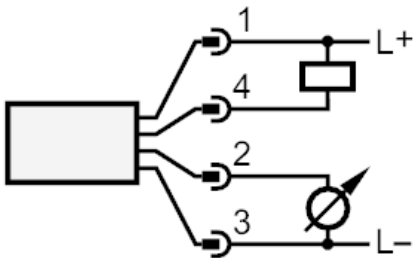
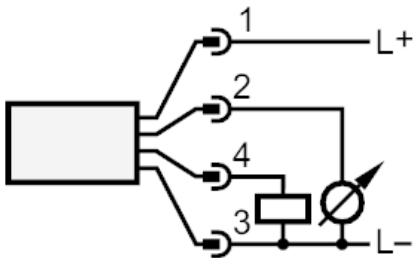
Pack quantity	1 pcs.
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Electrical connection

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



Connection



OUT1	Switching output
OUT2	analog output