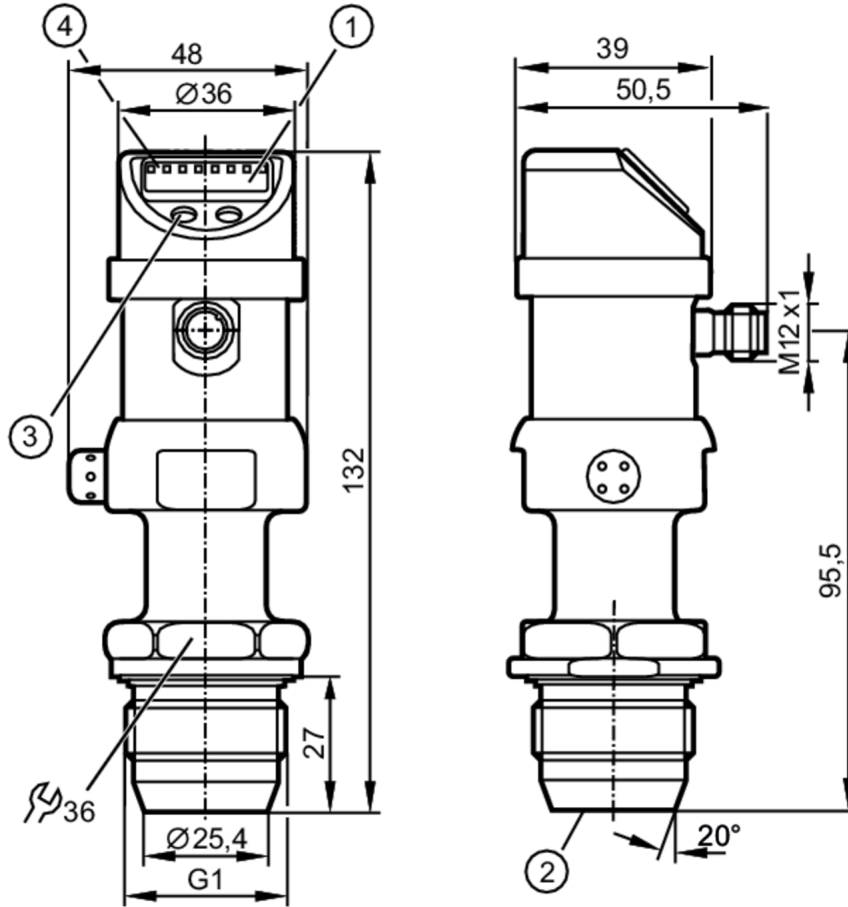


PI009A



Combined pressure sensor

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

CE EAC EC 1935/2004 FDA

Product characteristics

Output signal	switching signal; analogue signal; (configurable)			
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

Special feature	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)		
Pressure rating	10000 mbar	145 psi	1000 kPa
Min. bursting pressure	30000 mbar	435 psi	3000 kPa
Type of pressure	relative pressure; vacuum		

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Electrical data					
Operating voltage	[V]	18...32 DC			
Current consumption	[mA]	< 50			
Protection class		III			
Reverse polarity protection		yes			
Power-on delay time	[s]	0.5			
Integrated watchdog		yes			
Inputs / outputs					
Number of inputs and outputs		Number of digital outputs: 1; Number of analogue outputs: 1			
Outputs					
Total number of outputs		2			
Output signal		switching signal; analogue signal; (configurable)			
Electrical design		PNP/NPN			
Number of digital outputs		1			
Output function		normally open / normally closed; (parameterisable)			
Max. voltage drop switching output DC	[V]	2			
Permanent current rating of switching output DC	[mA]	250			
Switching frequency DC	[Hz]	6			
Number of analogue outputs		1			
Analogue current output	[mA]	4...20, invertible; (scalable 1:4)			
Max. load	[Ω]	(U _b - 10 V) / 20 mA			
Analogue voltage output	[V]	0...10, invertible; (scalable 1:4)			
Min. load resistance	[Ω]	2000			
Short-circuit protection		yes			
Type of short-circuit protection		pulsed			
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
Analogue start point		-1000...500 mbar		-14.5...7.25 psi	-100...50 kPa
Analogue 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 16086)			
Linearity deviation	[% of the span]	< ± 0,15; (Turn down 1:1)			
Hysteresis deviation		< ± 0,15; (Turn down 1:1)			

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	[% of the span]	
Long-term stability	[% of the span]	< ± 0,1; (Turn down 1:1; per year)
Temperature coefficient zero point	[% of the span / 10 K]	< ± 0,05; (0...70 °C)
Temperature coefficient span	[% of the span / 10 K]	< ± 0,15; (0...70 °C)

Response times

Response time	[ms]	< 100
Damping for the switching output dAP	[s]	0.1...100
Damping for the analogue output dAA	[s]	0.1...100
Step response time analogue output	[ms]	25

Software / programming

Parameter setting options	hysteresis / window; normally open / normally closed; switching logic; current/voltage output; Damping; adaptation of displayed values; display can be rotated and switched off; Display unit; zero point; span
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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]	511.5
Materials	stainless steel (1.4404 / 316L); PC; PBT; PEI; FKM; PTFE	
Materials (wetted parts)	ceramics (99.9 % Al ₂ O ₃); 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	

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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	

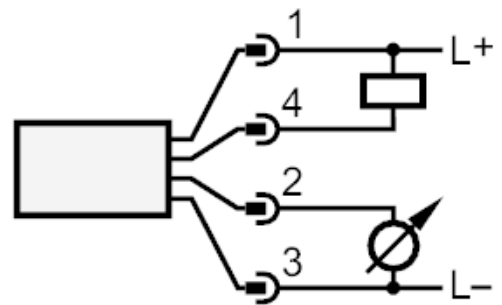
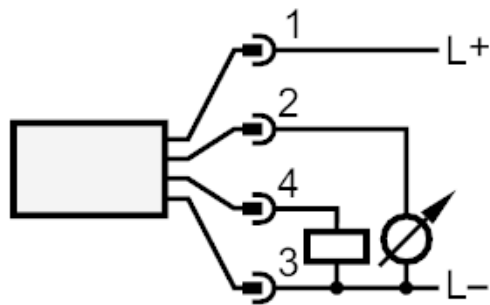
Remarks	
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; Contacts: gold-plated



Connection



OUT1 switching output
OUT2 analogue output