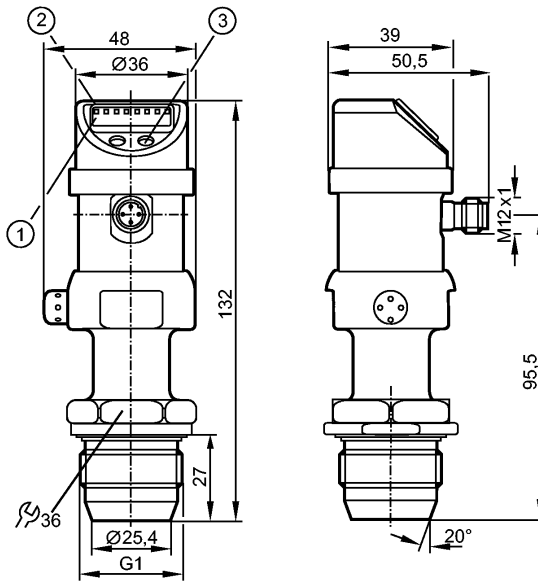


PI009A

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

Pressure sensors



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

CE EC 1935/2004 FDA

Product characteristics

Combined pressure sensor
Connector
Freely rotatable housing 350°
Zero and span adjustable
Function programmable
ATEX approval
Group II, category 3D/3G
Sealing cone G1 male
Process connection: Sealing cone G1 male
2 outputs OUT1 = switching output OUT2 = analogue output
4-digit alphanumeric display
Measuring range: -1000...1000 mbar

Application

Application	Type of pressure: relative pressure Hygienic systems, viscous media and liquids with suspended particles Liquids and gases
Pressure rating [mbar]	10000
Bursting pressure min. [mbar]	30000
Medium temperature [°C]	-20...60 *****)

Electrical data

Electrical design	DC PNP/NPN
Operating voltage [V]	18...32 DC
Current consumption [mA]	< 50
Protection class	III
Reverse polarity protection	yes

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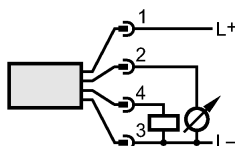
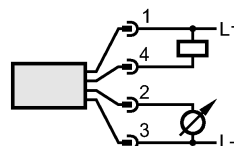

Pressure sensors

Outputs	
Output	2 outputs OUT1 = switching output OUT2 = analogue output
Output function	1 x normally open / closed programmable + 1 x analogue (I / U, scaleable 1:4)
Current rating [mA]	250
Voltage drop [V]	< 2
Short-circuit protection	pulsed
Overload protection	yes
Switching frequency [Hz]	6
Analogue output	I: 4...20 mA (Ineg: 20...4 mA) / U: 0...10 V (Uneg: 10...0 V)
Max. load [Ω]	I / Ineg: max. (Ub - 10 V) x 50; U / Uneg: min. 2000
Measuring / setting range	
Display unit	mbar, kPa, psi, inH2O, mWS, % der Spanne
Measuring range [mbar]	-1000...1000
Setting range	
Set point, SP [mbar]	-998...1000
Reset point, rP [mbar]	-1000...998
Analogue start point, ASP [mbar]	-1000...500
Analogue end point, AEP [mbar]	-500...1000
in steps of [mbar]	1
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	< ± 0.05
Greatest TEMPCO of the span	< ± 0.15
Response times	
Power-on delay time [s]	0.5
Min. response time switching output [ms]	100
Damping for the switching output (dAP) [s]	0.1...100.0
Damping for the analogue output (dAA) [s]	0.1...100.0
Step response time analogue output [ms]	25
Integrated watchdog	yes
Software / programming	
Programming options	hysteresis / window function; N.O. / N.C.; output polarity; current / voltage outputs; damping; calibration of displayed values; display can be rotated / deactivated; display unit

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Pressure sensors

Environment	
Ambient temperature [°C]	-20...60 *****
Storage temperature [°C]	-40...100
Protection	IP 65
Tests / approvals	
Marking of the unit	Ⓔ 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	
Process connection	Sealing cone G1 male
Materials (wetted parts)	ceramics (99.9 % Al ₂ O ₃); stainless steel 316L / 1.4435; stainless steel 316L / 1.4404; surface characteristics: Ra < 0.4 / Rz 4; PTFE; EPDM
Housing materials	stainless steel 316L / 1.4404; PC (Makrolon); PBT (Pocan); PEI; FPM (Viton); PTFE
Switching cycles min.	100 million
Weight [kg]	0.504
Displays / operating elements	
Display	Display unit 6 x green Switching status LED yellow Function display 4-digit alphanumeric display Measured values 4-digit alphanumeric display
Electrical connection	
Connection	M12 connector; Gold-plated contacts
Wiring	
Programming of the output function -----OUT1----- - Switching output Hno = hysteresis / normally open Hnc = hysteresis / normally closed Fno = window function / normally open Fnc = window function / normally closed -----OUT2----- - Analogue output I = current output (4...20 mA) U = voltage output (0...10 V)	 
	
Remarks	
Remarks	*) linearity, incl. hysteresis and repeatability; (limit value setting to DIN 16086) **) with temperature fluctuations < 10 K ***) in % of the span per year

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

Pressure sensors

*****) When used outside hazardous areas:
Ambient temperature: -25...85°C
Medium temperature: -25...125°C (145°C max. 1h)

Pack quantity	[piece]	1
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