

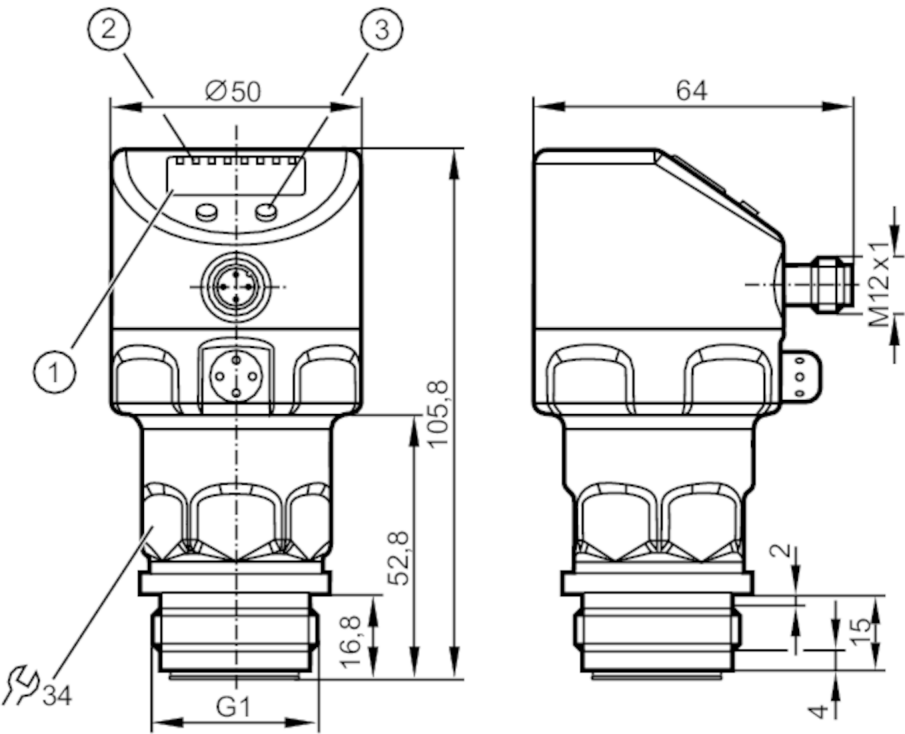


Flush pressure sensor with display

PI-,10BREA01-MFRKG/US/ /P

Alternative articles: PI1789

When selecting an alternative article and accessories please note that technical data may differ!



- 1 alphanumeric display 4-digit
- 2 status LEDs
- 3 programming button

ACS CRN EC 1935/2004 EHEDG Certified FCM Reg31

Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1			
Measuring range	-0.005...0.1 bar	-5...100 mbar	-2...40.16 inH2O	-0.5...10 kPa
Process connection	threaded connection G 1 external thread Aseptoflex Vario			

Application

Special feature	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]	-25...125; (145 max. 1h)		
Min. bursting pressure	30000 mbar	12044 inH2O	3000 kPa
Pressure rating	4000 mbar	1606 inH2O	400 kPa
Vacuum resistance [mbar]	-1000		
Vacuum resistance [MPa]	-0.1		
Type of pressure	relative pressure		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	4		



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Electrical data				
Min. insulation resistance	[MΩ]	100; (500 V DC)		
Protection class		III		
Reverse polarity protection		yes		
Measuring principle		hydrostatic		
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 analogue outputs: 1		
Outputs				
Total number of outputs		2		
Output signal		switching signal; analogue signal; IO-Link; (configurable)		
Electrical design		PNP/NPN		
Number of digital outputs		2		
Output function		normally open / normally closed; (parameterisable)		
Number of analogue outputs		1		
Analogue current output	[mA]	4...20, invertible; (scalable)		
Short-circuit protection		yes		
Type of short-circuit protection		pulsed		
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		-0.005...0.1 bar	-5...100 mbar	-2...40.16 inH2O -0.5...10 kPa
Set point SP		-4.8...100 mbar	-1.92...40.16 inH2O	-0.48...10 kPa
Reset point rP		-5...99.8 mbar	-2...40.08 inH2O	-0.5...9.98 kPa
Analogue start point		-5...75 mbar	-2...30.12 inH2O	-0.5...7.5 kPa
Analogue end point		20...100 mbar	8.04...40.16 inH2O	2...10 kPa
In steps of		0.1 mbar	0.04 inH2O	0.01 kPa



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Factory setting	SP1 = 25 mbar	rP1 = 23 mbar
	SP2 = 75 mbar	rP2 = 73 mbar
	ASP = 0 mbar	AEP = 100 mbar
	dAP = 0.06 s	dAA = 0.03 s

Accuracy / deviations

Switch point accuracy [% of the span]	< ± 0,5; (Turn down 1:1)
Repeatability [% of the span]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)
Characteristics deviation [% of the span]	< ± 0,5; (Turn down 1:1, linearity, incl. hysteresis and repeatability, limit value setting to DIN EN IEC 62828-1)
Linearity deviation [% of the span]	< ± 0,25; (Turn down 1:1)
Hysteresis deviation [% of the span]	< ± 0,2; (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]	< ± 0,1; (0...70 °C)
Temperature coefficient span [% of the span / 10 K]	< ± 0,2; (0...70 °C)

Response times

Damping process value dAP [s]	0...30
Damping for the analogue output dAA [s]	0.01...99.99

2-wire

Step response time analogue output [ms]	45
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3-wire

Min. response time of switching output (dAP) [ms]	3
Step response time analogue output [ms]	7

Interfaces

Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.0	
Profiles	no profile	
SIO mode	yes	
Required master port type	A	
Process data analogue	1	
Process data binary	2	
Min. process cycle time [ms]	2.3	
Supported DeviceIDs	Type of operation	DeviceID
	default	259

Operating conditions

Ambient temperature [°C]	-25...80
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Storage temperature	[°C]	-40...100
Protection		IP 67; IP 68; IP 69K

Tests / approvals

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]	160
Note on approval	factory certificate available as download at www.factory-certificate.ifm	
UL approval	UL Approval no.	J018
	File number UL	E174189

Mechanical data

Weight	[g]	359.5
Housing		cylindrical
Dimensions	[mm]	Ø 50 / L = 105.8
Materials		stainless steel (316L/1.4404); FKM; PTFE; PBT; PEI; PFA
Materials (wetted parts)		ceramics (99.9 % Al ₂ O ₃); stainless steel (316L/1.4435); surface characteristics: Ra < 0,4 / Rz 4; PTFE
Min. pressure cycles		100 million
Process connection		threaded connection G 1 external thread Aseptoflex Vario

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; inH ₂ O; mmWS; % of the span

Remarks

Pack quantity	1 pcs.
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Electrical connection

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



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Connection



- 1 connection for 2-wire operation
- 2 connection for 3-wire operation :
- OUT1 switching output
- OUT2 switching output
- analogue output
- 3 connection for IO-Link parameter setting (P = communication via IO-Link)