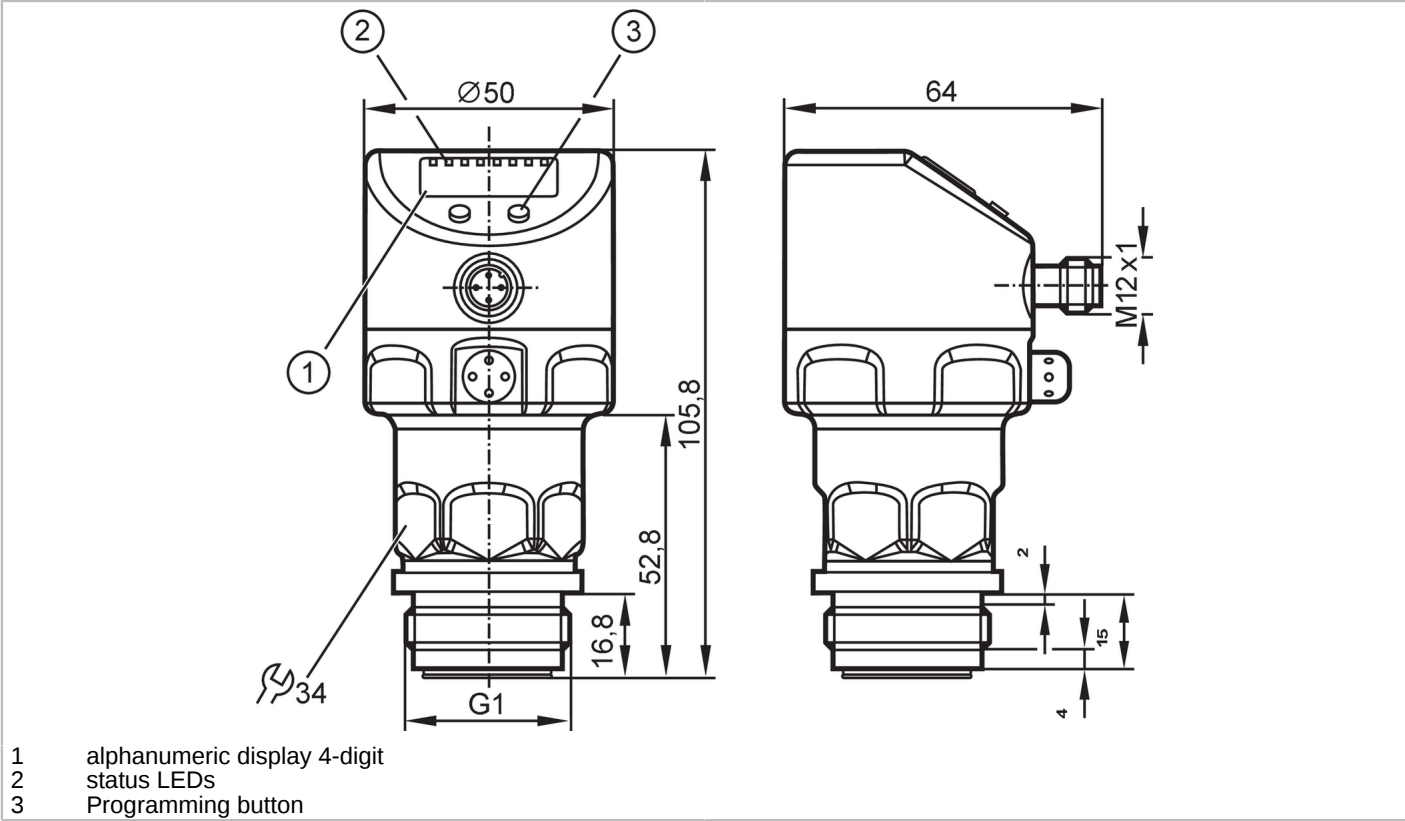




Flush pressure sensor with display

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

Alternative articles: PI1789
When selecting an alternative article and accessories please note that technical data may differ!



ACS CRN EC 1935/2004 EHEDG Certified FCM CN FCM JP

Reg31

Product characteristics				
Number of inputs and outputs	Number of digital outputs: 2; Number of analog 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 with Aseptoflex Vario sealing contour			
Note	G1 Gewinde nach ISO 228. Alternativ dichtend über rückwärtige Dichtkontur mit Dichtung in Anlehnung an DIN EN ISO 1179-2.			
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. burst pressure	30000 mbar	12044 inH2O	3000 kPa	
Pressure rating	4000 mbar	1606 inH2O	400 kPa	
Vacuum resistance	-1000 mbar		-0.1 MPa	
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		
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		-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
Analog start point		-5...75 mbar	-2...30.12 inH2O	-0.5...7.5 kPa
Analog 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)

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	
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	259

Operating conditions

Ambient temperature [°C]	-25...80
Storage temperature [°C]	-40...100



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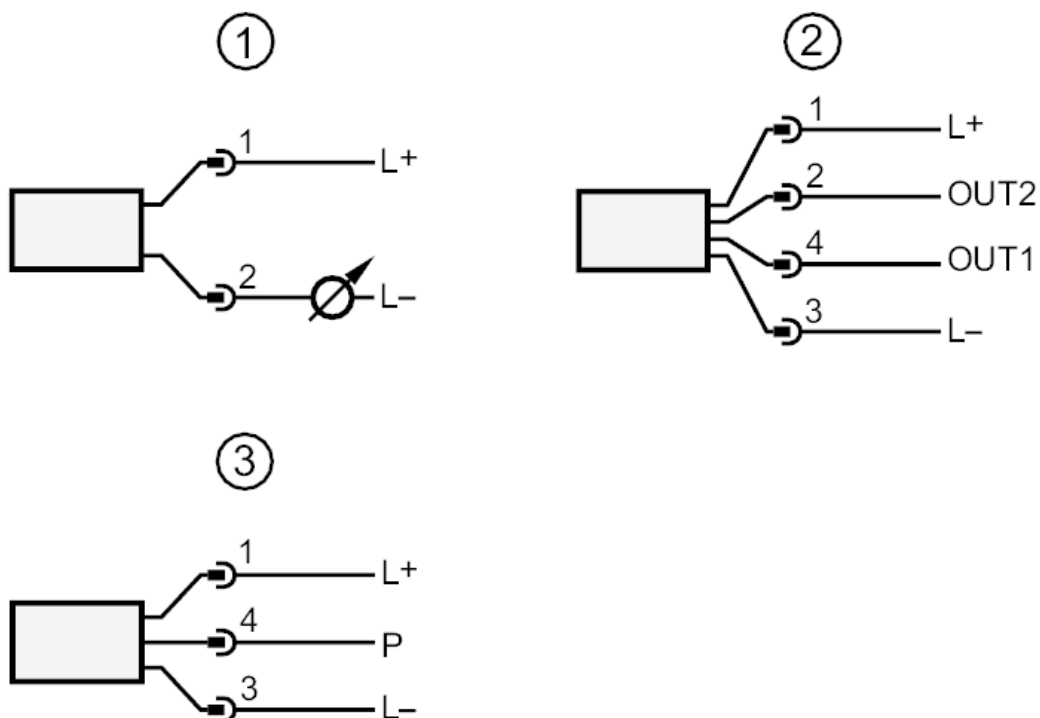
Protection		IP 67; IP 68; IP 69K	
Tests / approvals			
EMC	EN 61000-4-2 ESD	4 kV CD / 8 kV AD	
	EN 61000-4-3 HF radiated	10 V/m	
	EN 61000-4-4 Burst	2 kV	
	EN 61000-4-5 Surge	0,5/1 kV	
	EN 61000-4-6 HF conducted	10 V	
Shock resistance	DIN IEC 68-2-27	50 g (11 ms)	
Vibration resistance	DIN IEC 68-2-6	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 number	J018	
	File number UL	E174189	
Mechanical data			
Weight	[g]	362.6	
Housing		tubular	
Dimensions	[mm]	Ø 50 / L = 105.8	
Material		stainless steel (1.4404 / 316L); FKM; PTFE; PBT; PEI; PFA	
Materials (wetted parts)		ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L) surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE	
Min. pressure cycles		100 million	
Process connection		threaded connection G 1 external thread with Aseptoflex Vario sealing contour	
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; inH2O; mmWS; % of the span	
Remarks			
Pack quantity		1 pcs.	
Electrical connection			
Connector: 1 x M12; coding: A; Contacts: 4, 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
- analog output
- 3 connection for IO-Link parameter setting (P = communication via IO-Link)