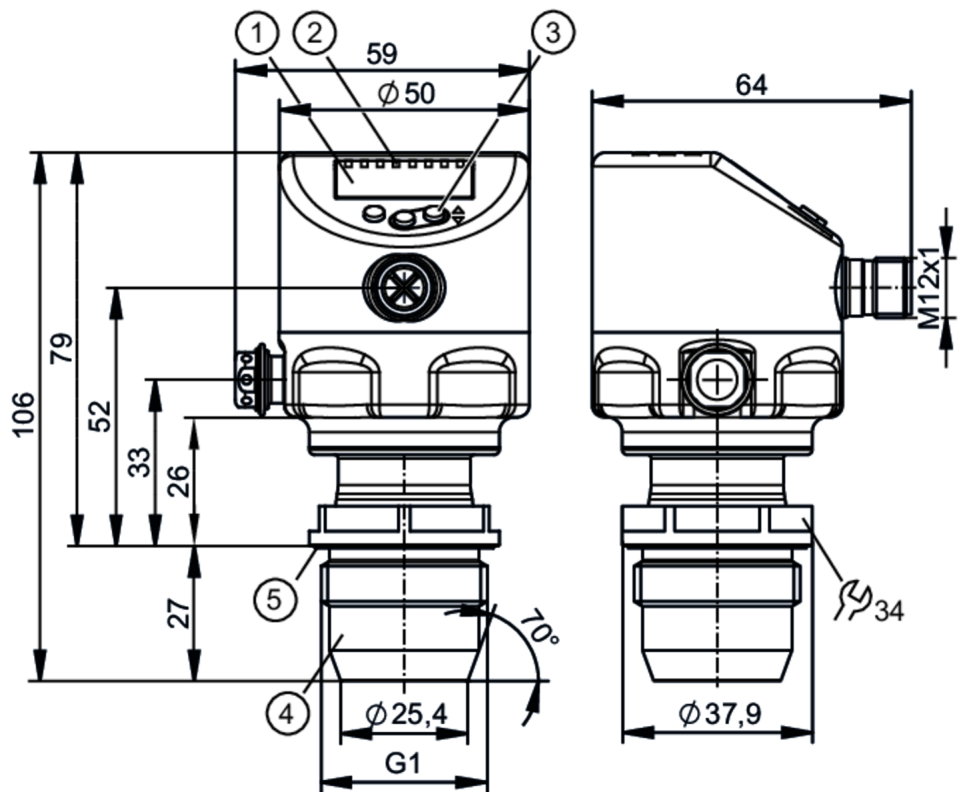




Flush pressure sensor with display

PI-1-1BREA01-MFRKG/US/ /P



- 1 alphanumeric display 4-digit
 - 2 status LEDs
 - 3 programming button
 - 4 G1 sealing cone external thread
 - 5 groove with sealing ring
- Attention: The unit must only be installed in a process connection for G1 sealing cone.
The G1A sealing cone of the unit is only suited for adapters with metal end stop.



Product characteristics		
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	-1000...1000 mbar	-100...100 kPa
Process connection	threaded connection G 1 external thread sealing cone Attention: The unit must only be installed in a process connection for G1 sealing cone.; The G1A sealing cone of the unit is only suited for adapters with metal end stop.	
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...150	
Min. bursting pressure	30000 mbar	3000 kPa
Pressure rating	10000 mbar	1000 kPa
Vacuum resistance [mbar]	-1000	
Type of pressure	relative pressure; vacuum	
No dead space	yes	
Electrical data		
Min. insulation resistance [MΩ]	100; (500 V DC)	



Flush pressure sensor with display

PI-1-1BREAO1-MFRKG/USI /P

Protection class	III	
Reverse polarity protection	yes	
Integrated watchdog	yes	
2-wire		
Operating voltage [V]	20...30 DC	
Current consumption [mA]	3.5...21.5	
Power-on delay time [s]	< 1	
3-wire		
Operating voltage [V]	18...30 DC	
Current consumption [mA]	5...45; (430 bei max. Laststrom)	
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	
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]	100	
Switching frequency DC [Hz]	125	
Max. load [Ω]	(U _b - 10 V) / 21,5 mA; 650 Ω (U _b = 24 V)	
Measuring/setting range		
Measuring range	-1000...1000 mbar	-100...100 kPa
Set point SP	-997...1000 mbar	-4.9...100 kPa
Reset point rP	-1000...997 mbar	-100...99.7 kPa
Analogue start point	-1000...599 mbar	-100...59.9 kPa
Analogue end point	-599...1000 mbar	-59.9...100 kPa
Min. difference between SP and rP	3 mbar	0.3 kPa
In steps of	1 mbar	0.1 kPa



Flush pressure sensor with display

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Factory setting		SP1 = -500 mbar	rP1 = -540 mbar
		SP2 = 500 mbar	rP2 = 460 mbar
		ASP = -1000 mbar	AEP = 1000 mbar
		dAP = 2.00 s	dAA = 2.00 s
Temperature monitoring			
Measuring range	[°C]	-25...150	
Accuracy / deviations			
Switch point accuracy	[% of the span]	< ± 0,2; (DIN EN IEC 62828-1; 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; (DIN IEC EN 62828-1 incl. zero point and span error, non-linearity, hysteresis; Turn down 1:1)	
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	[% of the span]	< ± 0,1; (Turn down 1:1; per year)	
Total deviation over temperature range		Temperature range	total deviation
		-25...15 °C	Characteristics deviation ± 0,05 % of the span / 10 K
		15...80 °C	Characteristics deviation
		80...150 °C	Characteristics deviation ± 0,1 % of the span / 10 K
Notes on the accuracy / deviation		for further details see section Diagrams and graphs	
Temperature monitoring			
Accuracy	[K]	± 2,5+ (0,08 x (Umgebungstemperatur - Mediumtemperatur))	
Repeatability	[K]	± 0,2	
Resolution	[K]	0.2	
Response times			
Damping process value dAP	[s]	0...99.99	
Damping for the analogue output dAA	[s]	0...99.99	
2-wire			
Step response time analogue output	[ms]	30	
3-wire			
Min. response time of switching output (dAP)	[ms]	3	
Step response time analogue output	[ms]	7	
Temperature monitoring			
Dynamic response T05 / T09	[s]	< 35 / < 135; (DIN EN 60751 water ; > 0,9 m/s)	
Interfaces			
Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	



Flush pressure sensor with display

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IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Identification and Diagnosis (0x4000), Measurement Data Channel (0x800A)	
SIO mode	yes	
Required master port type	A	
Min. process cycle time [ms]	5.6	
IO-Link resolution pressure [mbar]	0.1	
IO-Link resolution temperature [K]	0.2	
IO-Link process data (cyclical)	function	bit length
	pressure	32
	temperature	32
	device status	4
	binary switching information	2
IO-Link functions (acyclical)	application specific tag; internal temperature; operating hours counter; switching cycles counter; Pressure peak counter	
Supported DeviceIDs	Type of operation	DeviceID
	default	1653

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

Tests / approvals		
EMC	DIN EN 61326-1	
Shock resistance	DIN EN 60068-2-27	50 g (11 ms)
Vibration resistance	DIN EN 60068-2-6	20 g (10...2000 Hz)
MTTF [years]		201
UL approval	UL Approval no.	J049
	File number UL	E174189

Mechanical data		
Weight [g]		186.7
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
Tightening torque [Nm]		20
Process connection	threaded connection G 1 external thread sealing cone Attention: The unit must only be installed in a process connection for G1 sealing cone.; The G1A sealing cone of the unit is only suited for adapters with metal end stop.	

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	

Remarks		
Pack quantity		1 pcs.



Flush pressure sensor with display

PI-1-1BREA01-MFRKG/US/ /P

Electrical connection

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



Connection



- 1 connection for 2-wire operation
 - 2 connection for 3-wire operation
 - OUT1 switching output / IO-Link
 - OUT2 switching output / analogue output
 - 3 connection for IO-Link parameter setting (P = communication via IO-Link)
- colours to DIN EN 60947-5-2
- Core colours
- BK = black
- BN = brown
- BU = blue
- WH = white

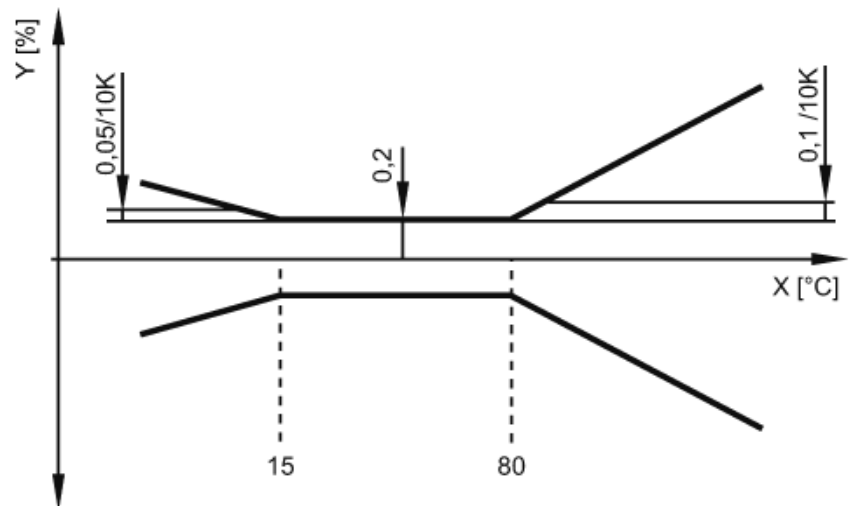


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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation