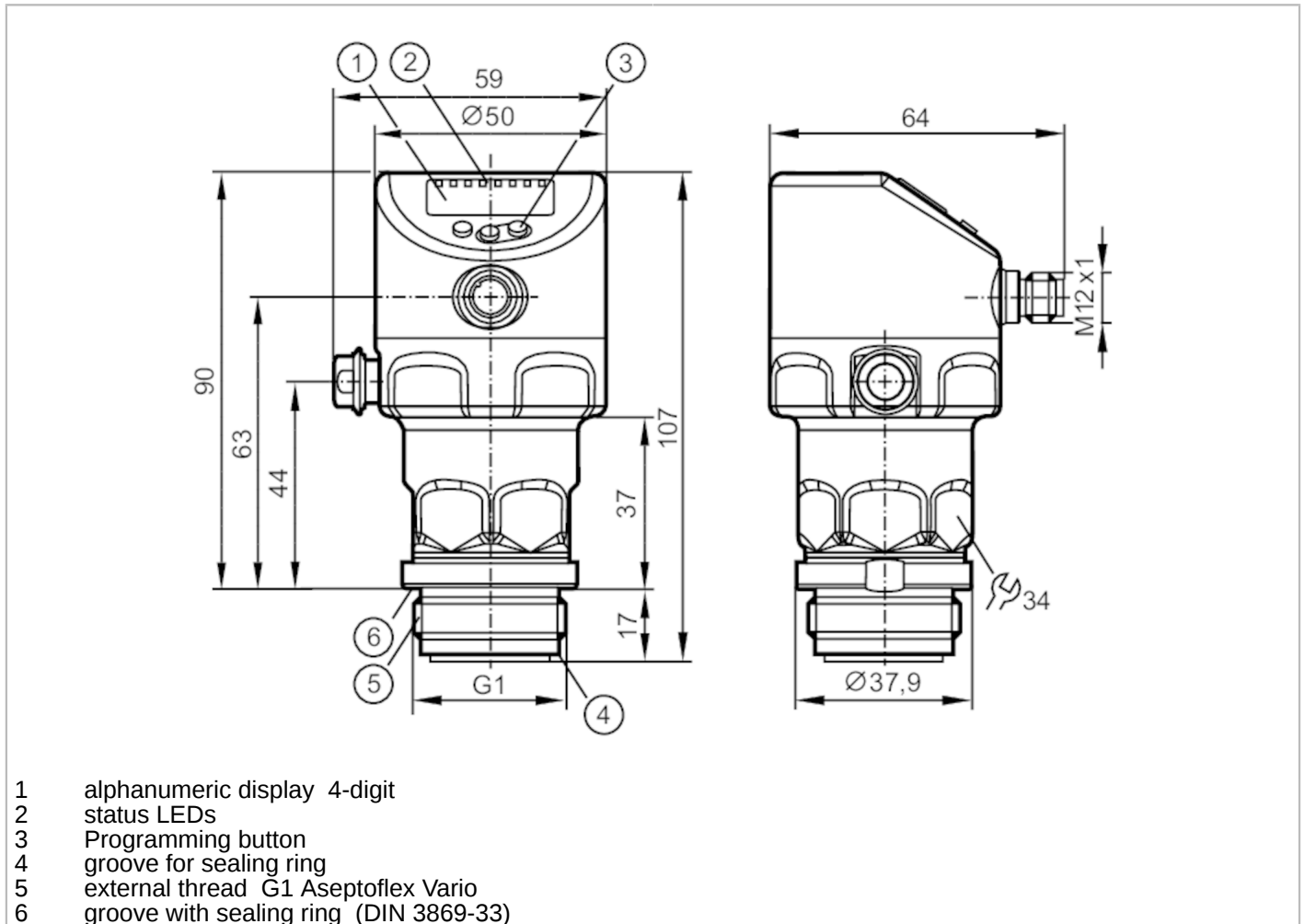


# PI1708



## Flush pressure sensor with display

PI-,25BREA01-MFRKG/US/ IP



- 1 alphanumeric display 4-digit
- 2 status LEDs
- 3 Programming button
- 4 groove for sealing ring
- 5 external thread G1 Aseptoflex Vario
- 6 groove with sealing ring (DIN 3869-33)



Product characteristics			
Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1		
Measuring range	-12.4...250 mbar	-5...100.4 inH2O	-1.24...25 kPa
Process connection	threaded connection G 1 external thread Aseptoflex Vario		
Application			
System	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	12044 inH2O	3000 kPa
Pressure rating	6000 mbar	2400 inH2O	600 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		

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## Flush pressure sensor with display

PI-,25BREA01-MFRKG/US/ /P

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...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 analog outputs: 1
Outputs		
Total number of outputs		2
Output signal		switching signal; analog signal; IO-Link
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]	100
Switching frequency DC	[Hz]	125
Max. load	[Ω]	(U <sub>b</sub> - 10 V) / 21,5 mA; 650 Ω (U <sub>b</sub> = 24 V)

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## Flush pressure sensor with display

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Measuring/setting range				
Measuring range	-12.4...250 mbar	-5...100.4 inH2O	-1.24...25 kPa	-126...2550 mmWS
Set point SP	-12...250 mbar	-4.8...100.4 inH2O	-1.2...25 kPa	-122...2549 mmWS
Reset point rP	-12.4...249.6 mbar	-5...100.2 inH2O	-1.24...24.96 kPa	-126...2545 mmWS
Analog start point	-12.4...199.4 mbar	-5...80.1 inH2O	-1.24...19.94 kPa	-126...2033 mmWS
Analog end point	38.2...250 mbar	15.3...100.4 inH2O	3.82...25 kPa	390...2549 mmWS
Min. difference between SP and rP	0.5 mbar	0.2 inH2O	0.05 kPa	5 mmWS
In steps of	0.1 mbar	0.1 inH2O	0.01 kPa	1 mmWS
Factory setting			SP1 = 62.5 mbar	rP1 = 57.5 mbar
			SP2 = 187.5 mbar	rP2 = 182.5 mbar
			ASP = 0.00 mbar	AEP = 250 mbar
			dAP = 2.00 s	dAA = 2.00 s
Temperature monitoring				
Measuring range	-25...150 °C		-13...302 °F	
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 ± 0,1 % der Spanne / 10 K		
	15...80 °C	Characteristics deviation		
	80...150 °C	Characteristics deviation ± 0,15 % der Spanne / 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			
Reaction times				
Damping process value dAP [s]	0...99.99			
Damping for the analog output dAA [s]	0...99.99			
2-wire				
Step response time analog output [ms]	30			

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## Flush pressure sensor with display

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3-wire		
Min. response time of switching output (dAP)	[ms]	3
Step response time analog 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)	
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 class	A	
Min. process cycle time	[ms]	5.6
IO-Link resolution pressure	[mbar]	0.01
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	1152d
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]	214
Note on approval	Factory certificate available as download at <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a>	
UL approval	UL approval number	J048
	File number UL	E174189

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## Flush pressure sensor with display

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Mechanical data	
Weight [g]	375.6
Material	stainless steel (1.4404 / 316L); FKM; PTFE; PBT; PEI; PFA
Materials (wetted parts)	ceramics (99.9 % Al <sub>2</sub> O <sub>3</sub> ); stainless steel (1.4435 / 316L); surface characteristics: Ra < 0,4 / Rz 4; PTFE
Min. pressure cycles	100 million
Tightening torque [Nm]	35
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 <sub>2</sub> O; mmWS	

Remarks	
Pack quantity	1 pcs.

### Electrical connection

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

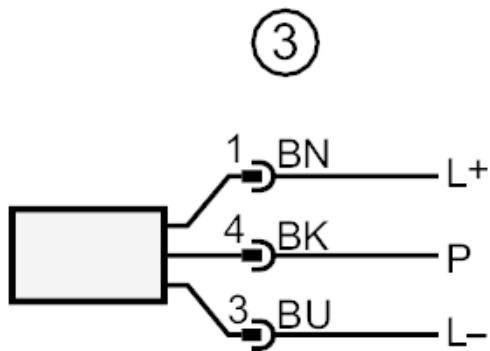
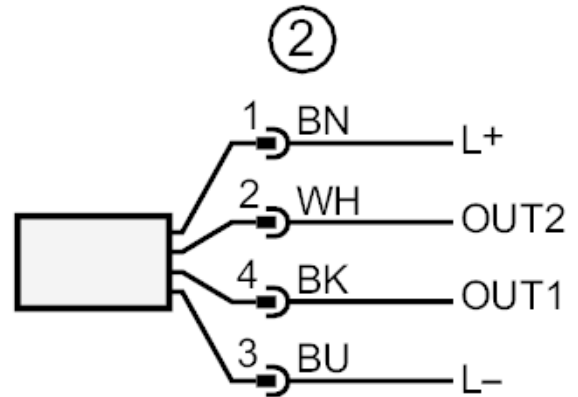
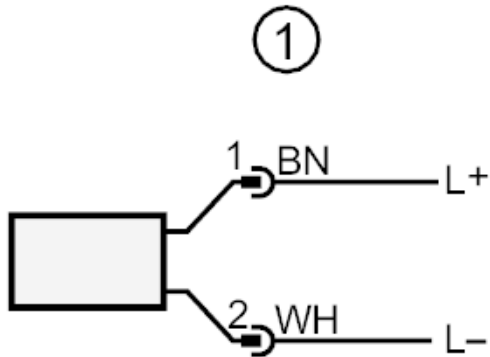




## Flush pressure sensor with display

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### Connection



- 1 connection for 2-wire operation
- 2 connection for 3-wire operation
- OUT1 Switching output / IO-Link
- OUT2 Switching output / analog output
- 3 connection for IO-Link parameter setting (P = communication via IO-Link)

Colors to DIN EN 60947-5-2

Core colors

- BK = black
- BN = brown
- BU = blue
- WH = white

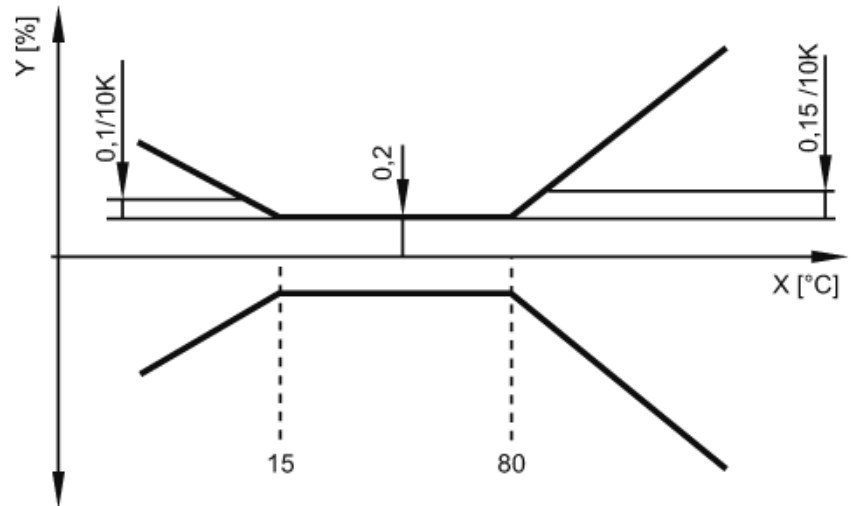
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## Flush pressure sensor with display

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### Diagrams and graphs



X temperature  
Y total deviation