



Flush pressure sensor with display

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



1 alphanumeric display 4-digit

2 status LEDs

3 programming button

4 G1 sealing cone external thread

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.

5 groove with sealing ring



ACS



CRN



EC 1935/2004

EHEDG

Tested

FCM



IO-Link

Reg31

UK

CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1			
Measuring range	-12.4...250 mbar	-5...100.4 inH ₂ O	-1.24...25 kPa	-126...2550 mmWS
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	12044 inH ₂ O	3000 kPa
Pressure rating	6000 mbar	2400 inH ₂ O	600 kPa
Vacuum resistance [mbar]	-1000		
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	6		



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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...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]	(Ub - 10 V) / 21,5 mA; 650 Ω (Ub = 24 V)			
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
Analogue start point	-12.4...199.4 mbar	-5...80.1 inH2O	-1.24...19.94 kPa	-126...2033 mmWS
Analogue 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



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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
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Accuracy / deviations

Switch point accuracy	[X21]	< ± 0,2; (DIN EN IEC 62828-1; Turn down 1:1)
Repeatability	[X21]	< ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)
Characteristics deviation	[X21]	< ± 0,2; (DIN IEC EN 62828-1 incl. zero point and span error, non-linearity, hysteresis; Turn down 1:1)
Linearity deviation	[X21]	< ± 0,15; (Turn down 1:1)
Hysteresis deviation	[X21]	< ± 0,15; (Turn down 1:1)
Long-term stability	[X21]	< ± 0,1; (Turn down 1:1; per year)

Total deviation over temperature range	Temperature range	total deviation
	-25...15 °C	Characteristics deviation ± 0,1 % интервалу / 10 K
	15...80 °C	Characteristics deviation
	80...150 °C	Characteristics deviation ± 0,15 % интервалу / 10 K

Notes on the accuracy / deviation	for further details see section Diagrams and graphs
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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
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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)
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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



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Required master port type	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	1152

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 [ANN]	214	
Note on approval	factory certificate available as download at www.factory-certificate.ifm	
UL approval	UL Approval no.	J049
	File number UL	E174189

Mechanical data		
Weight [g]	382.9	
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; inH ₂ O; mmWS	

Remarks		
Pack quantity	1 pcs.	



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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

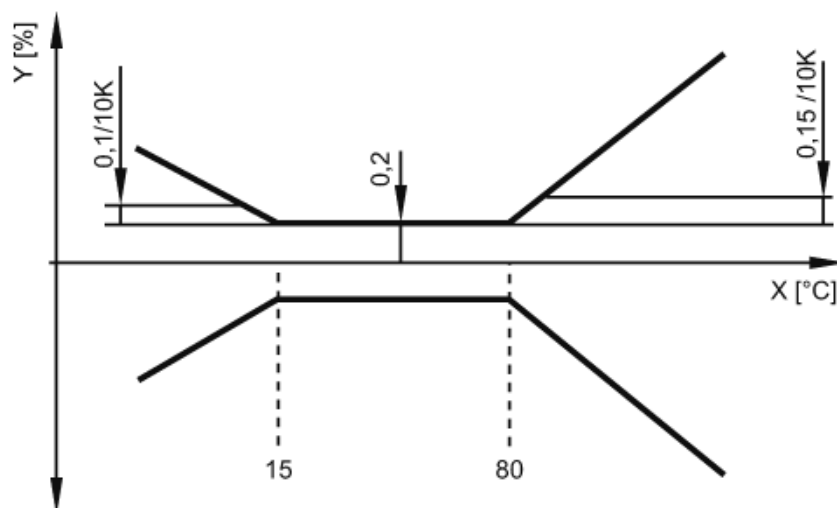


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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation