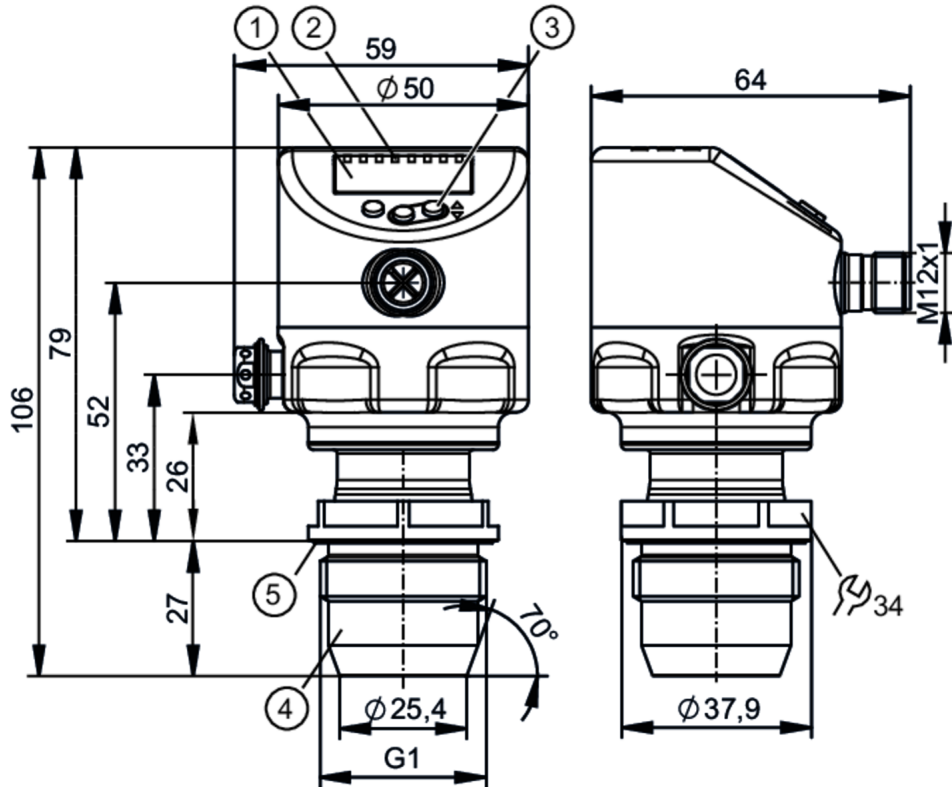


# PI1817



## Flush pressure sensor with display

PI-1,6-REA01-MFRKG/US/ IP



- 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



### Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1			
Measuring range	-100...1600 mbar	-1.46...23.2 psi	-40...642.5 inH <sub>2</sub> O	-10...160 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	40000 mbar	580 psi	4000 kPa
Pressure rating	15000 mbar	215 psi	1500 kPa
Vacuum resistance	-1000 mbar		-0.1 MPa
Type of pressure	relative pressure; vacuum		
No dead space	yes		
MAWP (for applications according to CRN) [bar]	15		



## Flush pressure sensor with display

PI-1,6-REA01-MFRKG/US/ IP

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]	(U <sub>b</sub> - 10 V) / 21,5 mA; 650 Ω (U <sub>b</sub> = 24 V)			
Measuring/setting range					
Measuring range		-100...1600 mbar	-1.46...23.2 psi	-40...642.5 inH2O	-10...160 kPa
Set point SP		-98...1600 mbar	-1.42...23.21 psi	-39.2...642.3 inH2O	-9.8...160 kPa
Reset point rP		-100...1598 mbar	-1.45...23.17 psi	-40.1...641.4 inH2O	-10...159.8 kPa
Analogue start point		-100...1272 mbar	-1.45...18.45 psi	-40.1...510.6 inH2O	-10...127.2 kPa
Analogue end point		228...1600 mbar	3.31...23.21 psi	91.6...642.3 inH2O	22.8...160 kPa
Min. difference between SP and rP		3 mbar	0.04 psi	1 inH2O	0.3 kPa
In steps of		1 mbar	0.01 psi	0.1 inH2O	0.1 kPa



## Flush pressure sensor with display

PI-1,6-REA01-MFRKG/US/ IP

Factory setting	SP1 = 400 mbar	rP1 = 368 mbar
	SP2 = 1200 mbar	rP2 = 1168 mbar
	ASP = 0.00 mbar	AEP = 1600 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	<b>Temperature range</b>	<b>total deviation</b>
	-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

PI-1,6-REA01-MFRKG/US/ IP

IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	<b>Function class</b>	<b>Designation</b>
	0x4000	Identification and Diagnosis
	0x800A	Measurement Data Channel (standard resolution)
SIO mode	yes	
Required master port type	A	
Min. process cycle time [ms]	5.6	
IO-Link resolution pressure [mbar]	0.05	
IO-Link resolution temperature [K]	0.2	
IO-Link process data (cyclical)	<b>function</b>	<b>bit length</b>
	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	<b>Type of operation</b>	<b>DeviceID</b>
	default	1149

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 no.	J049
	File number UL	E174189

Mechanical data		
Weight [g]	385.5	
Housing	cylindrical	
Dimensions [mm]	Ø 50 / L = 106	
Materials	stainless steel (316L/1.4404); FKM; PTFE; PBT; PEI; PFA	
Materials (wetted parts)	ceramics (99.9 % Al <sub>2</sub> O <sub>3</sub> ); 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.	

# PI1817



## Flush pressure sensor with display

PI-1,6-REA01-MFRKG/US/ IP

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; psi; kPa; inH2O	

Remarks	
Pack quantity	1 pcs.

### Electrical connection

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



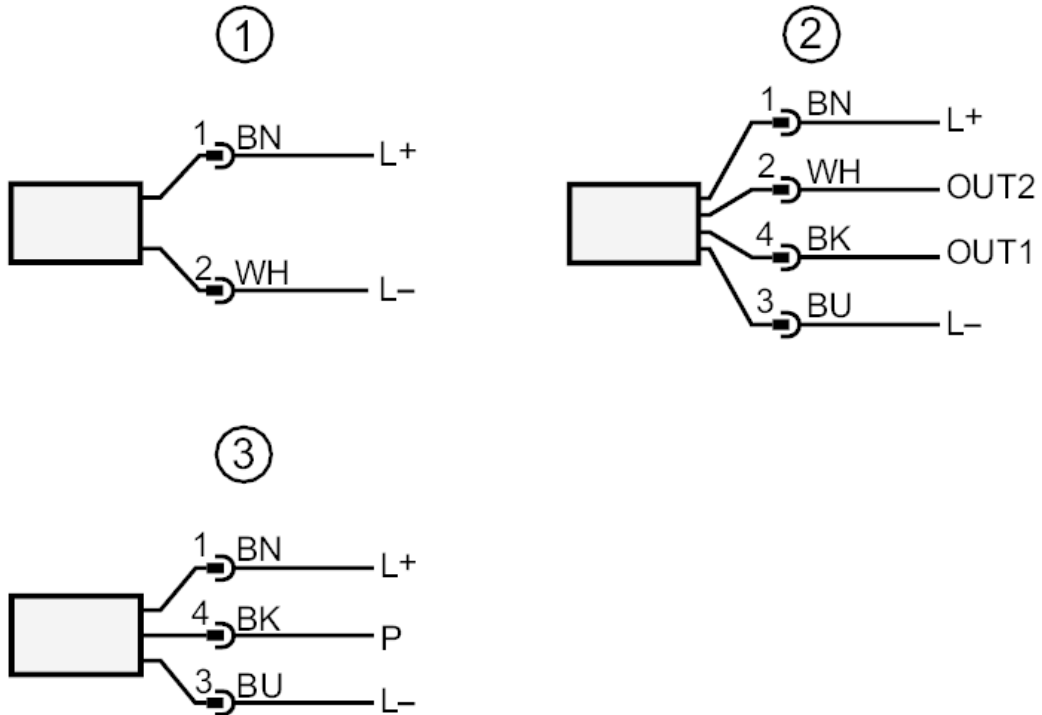
# PI1817



## Flush pressure sensor with display

PI-1,6-REA01-MFRKG/US/ IP

### 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

# PI1817

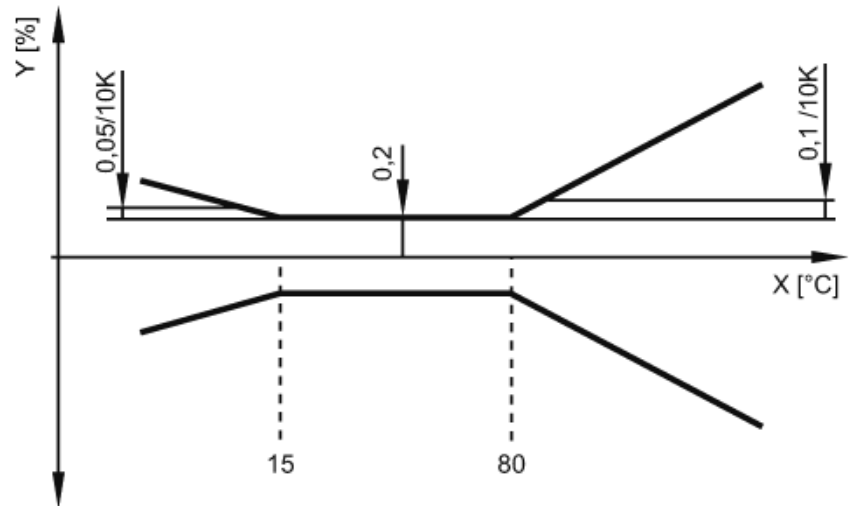


## Flush pressure sensor with display

PI-1,6-REA01-MFRKG/US/ IP

### Diagrams and graphs

ambient temperature influence on the accuracy



X temperature  
Y total deviation