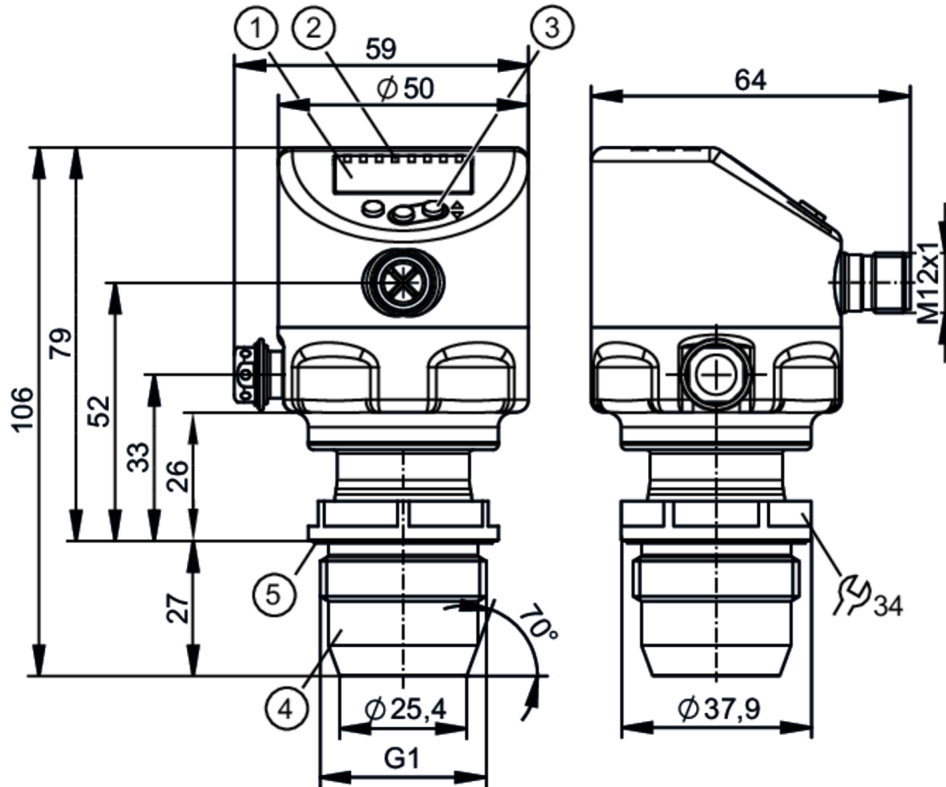


# PI1817



## 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
- 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              | -100...1600 mbar  | -1.46...23.2 psi | -40...642.5 inH2O | -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 [mbar] | -1000   |         |          |  |
| Type of pressure         | relative pressure; vacuum   |         |          |  |
| No dead space            | yes   |         |          |  |



## 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]  | ( $U_b - 10 \text{ V}$ ) / 21,5 mA; 650 Ω ( $U_b = 24 \text{ V}$ ) |



## Flush pressure sensor with display

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

| 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         |
| 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<br>[% 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<br>[% 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<br>[% of the span]       | < ± 0,15; (Turn down 1:1)   |  |                     |                 |
| Hysteresis deviation<br>[% of the span]      | < ± 0,15; (Turn down 1:1)   |  |                     |                 |
| Long-term stability<br>[% 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 % der Spanne / 10 K |                     |                 |
|  | 15...80 °C  | Characteristics deviation ± 0,1 % 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   |  |                     |                 |
| 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  |  |                     |                 |



## Flush pressure sensor with display

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

| 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)   |
| 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]                       | 0.05  |
| 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                      | 1149 d  |
| 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   |
| Vibration resistance                         |                              | DIN EN 60068-2-6  |
| MTTF   | [years]                      | 214   |
| Note on approval                             |                              | factory certificate available as download at <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a> |

# PI1817



## Flush pressure sensor with display

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

| Mechanical data          |   |
|--------------------------|---|
| Weight [g]               | 385.5   |
| Materials                | 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 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; psi; kPa; inH <sub>2</sub> O |                               |

| Remarks       |        |
|---------------|--------|
| Pack quantity | 1 pcs. |

### Electrical connection

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

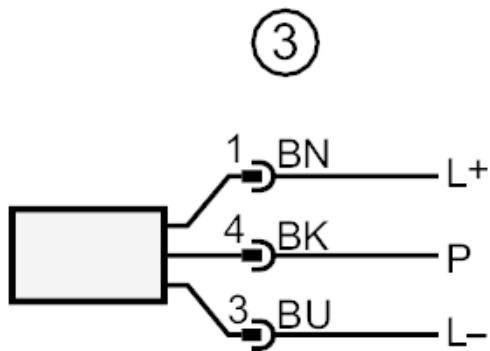
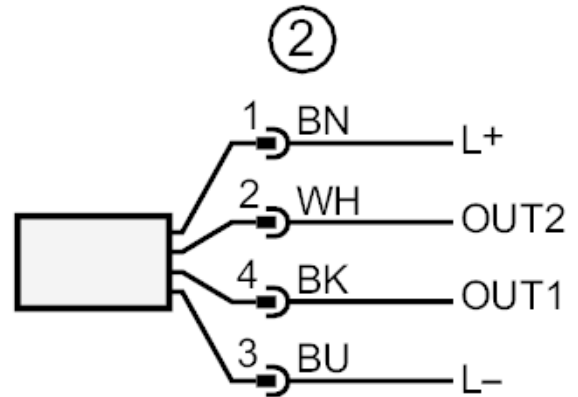
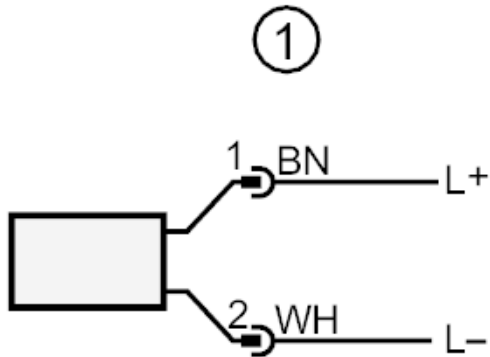




## Flush pressure sensor with display

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

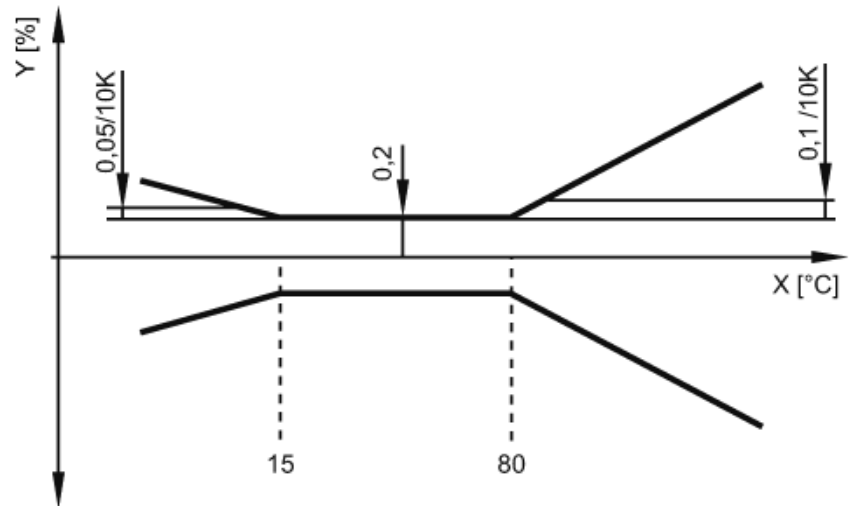


## Flush pressure sensor with display

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

### Diagrams and graphs

ambient temperature influence on the accuracy



X temperature  
Y total deviation