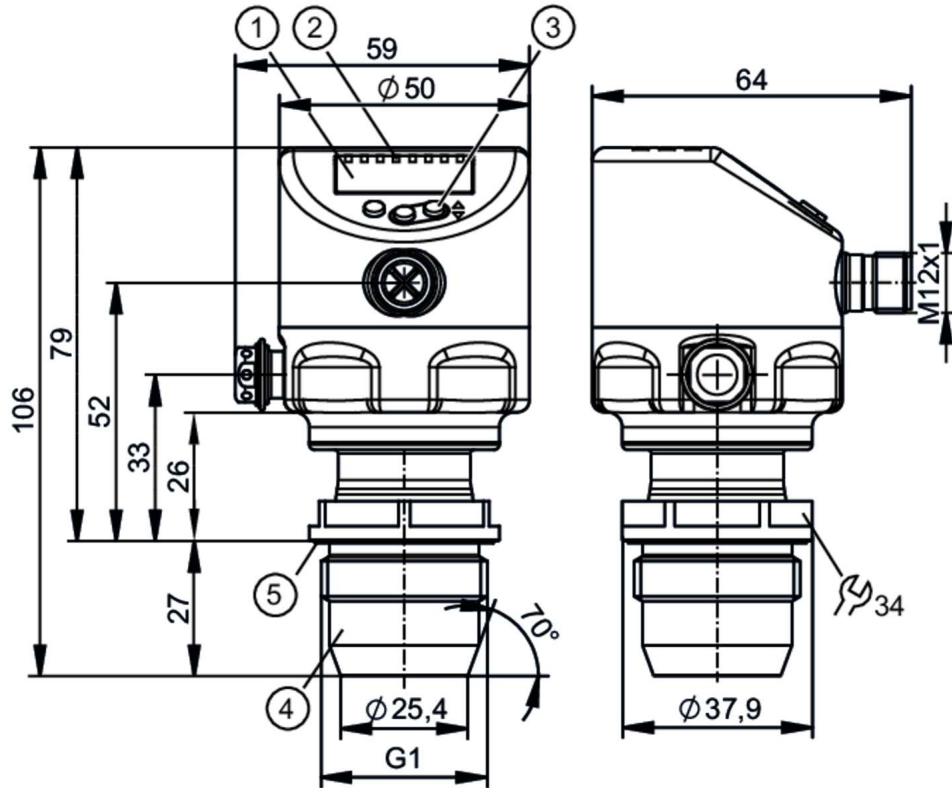




Flush pressure sensor with display

PI-001BREA01-MFRKG/US/ /P

When selecting an alternative article and accessories please note that technical data may differ!



- 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



US

EC 1935/2004

EHDG

Tested

FCM

FDA

IO-Link

Reg31

UK

CA

Product characteristics

| | | | | |
|------------------------------|---|------------------|-------------------|--------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analog outputs: 1 | | | |
| Measuring range | -50...1000 mbar | -0.72...14.5 psi | -20...401.5 inH2O | -5...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

| | | | |
|--------------------------|---|---------|----------|
| 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 | 435 psi | 3000 kPa |
| Pressure rating | 10000 mbar | 145 psi | 1000 kPa |
| Vacuum resistance [mbar] | -1000 | | |
| Type of pressure | relative pressure; vacuum | | |
| No dead space | yes | | |

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| | | |
|--|-------|----|
| MAWP (for applications according to CRN) | [bar] | 10 |
|--|-------|----|

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 _b - 10 V) / 21,5 mA; 650 Ω (U _b = 24 V) |

Measuring/setting range

| | | | | |
|--------------------|-----------------|-------------------|---------------------|----------------|
| Measuring range | -50...1000 mbar | -0.72...14.5 psi | -20...401.5 inH2O | -5...100 kPa |
| Set point SP | -49...1000 mbar | -0.7...14.5 psi | -19.5...401.5 inH2O | -4.9...100 kPa |
| Reset point rP | -50...999 mbar | -0.73...14.48 psi | -20.1...400.9 inH2O | -5...99.9 kPa |
| Analog start point | -50...800 mbar | -0.73...11.6 psi | -20.1...321.2 inH2O | -5...80 kPa |
| Analog end point | 150...1000 mbar | 2.18...14.5 psi | 60.2...401.5 inH2O | 15...100 kPa |

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| | | | | |
|-----------------------------------|-----------------|----------|-----------------|---------|
| Min. difference between SP and rP | 2 mbar | 0.03 psi | 0.6 inH2O | 0.2 kPa |
| In steps of | 1 mbar | 0.01 psi | 0.1 inH2O | 0.1 kPa |
| Factory setting | SP1 = 250 mbar | | rP1 = 230 mbar | |
| | SP2 = 750 mbar | | rP2 = 730 mbar | |
| | ASP = 0.00 mbar | | AEP = 1000 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 ± 0,05 % 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 |

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 |
|--|----|

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) |

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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 | |
| Required master port class | 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 | 1153 |
| 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 www.factory-certificate.ifm | |
| UL approval | UL approval number | J049 |
| | File number UL | E174189 |
| Mechanical data | | |
| Weight [g] | 386.1 | |
| Material | stainless steel (1.4404 / 316L); FKM; PTFE; PBT; PEI; PFA | |
| Materials (wetted parts) | ceramics (99.9 % Al ₂ O ₃); stainless steel (1.4435 / 316L); 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. | |

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Flush pressure sensor with display

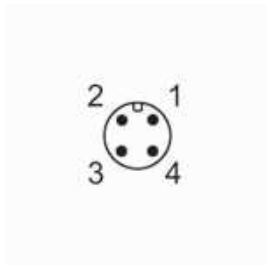
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| Displays / operating elements | | |
|-------------------------------|-----------------------|-------------------------------|
| Display | Display unit | LED, green |
| | Switching status | LED, yellow |
| | Function display | alphanumeric display, 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



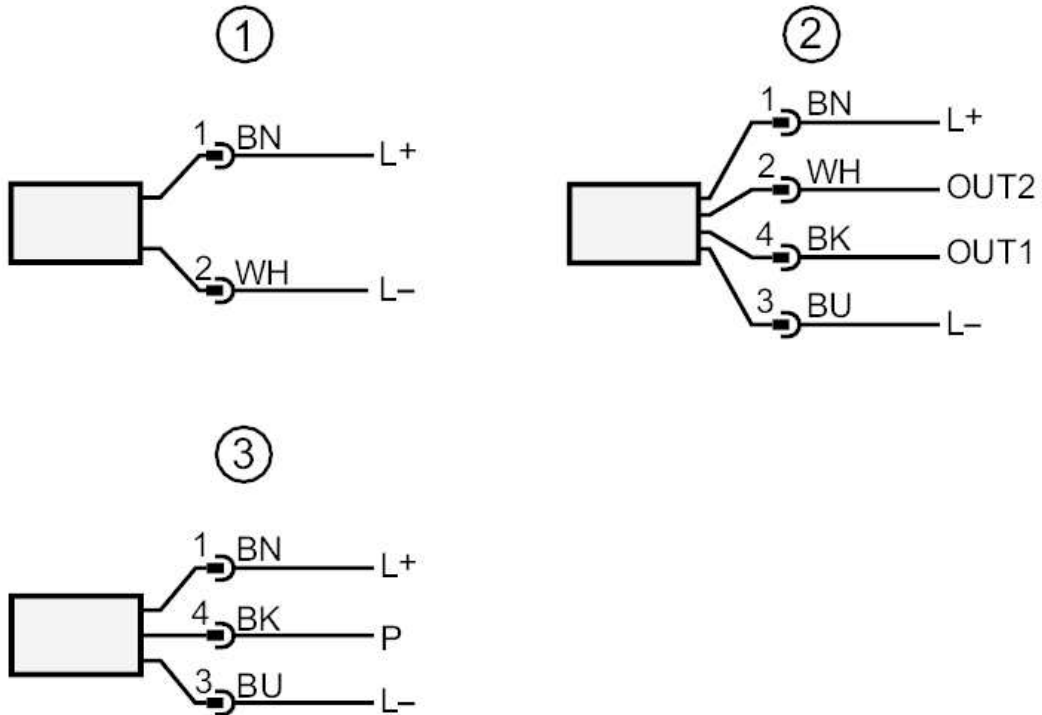
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Connection



- 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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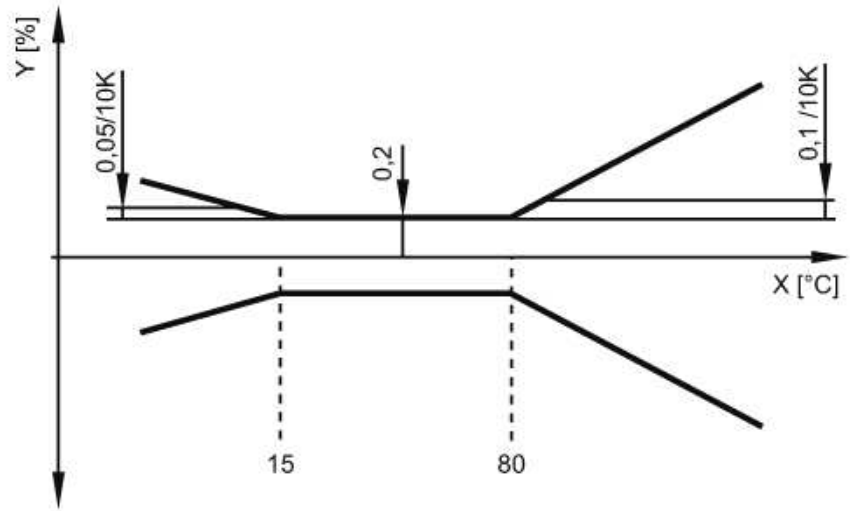


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Diagrams and graphs

ambient temperature influence on the accuracy



X temperature
Y total deviation