

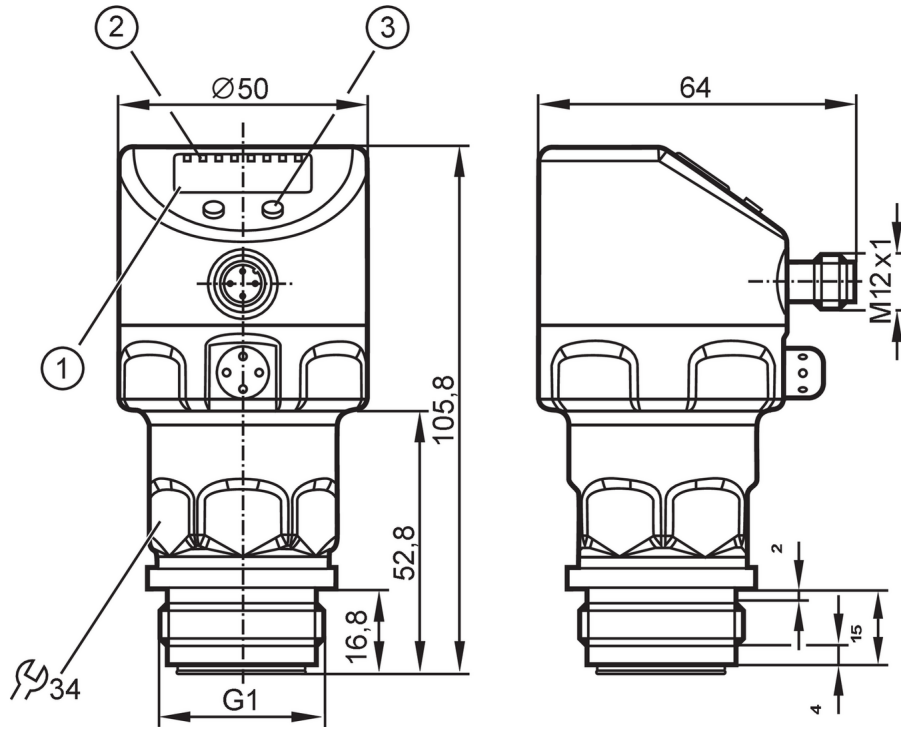


## Flush pressure sensor with display

PI-001BREA01-MFRKG/US/ IP

Alternative articles: PI1707

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



ACS



CRN



US

EC 1935/2004

EHDG Certified

FCM



IO-Link



Reg31



### Product characteristics

|                              |   |                 |                  |              |
|------------------------------|---|-----------------|------------------|--------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analogue outputs: 1   |                 |                  |              |
| Measuring range              | -0.05...1 bar   | -50...1000 mbar | -0.73...14.5 psi | -5...100 kPa |
| Process connection           | threaded connection G 1 external thread with Aseptoflex Vario sealing contour   |                 |                  |              |
| Note                         | G1 Gewinde nach ISO 228. Alternativ dichtend über rückwärtige Dichtkontur mit Dichtung in Anlehnung an DIN EN ISO 1179-2. |                 |                  |              |

### 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...125; (145 max. 1h)  |          |          |
| Min. burst pressure                          | 30000 mbar  | 435 psi  | 3000 kPa |
| Pressure rating                              | 10000 mbar  | 145 psi  | 1000 kPa |
| Vacuum resistance                            | -1000 mbar  | -0.1 MPa |          |
| Type of pressure                             | relative pressure   |          |          |
| No dead space                                | yes   |          |          |
| MAWP for applications according to CRN [bar] | 10  |          |          |

### Electrical data

|                                 |                 |
|---------------------------------|-----------------|
| Min. insulation resistance [MΩ] | 100; (500 V DC) |
|---------------------------------|-----------------|

# PI2797



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|  |   |                   |                  |              |
|--|---|-------------------|------------------|--------------|
| Protection class                                     | III   |                   |                  |              |
| Reverse polarity protection                          | yes   |                   |                  |              |
| Integrated watchdog                                  | yes   |                   |                  |              |
| <b>2-wire</b>  |   |                   |                  |              |
| Operating voltage [V]                                | 20...32 DC  |                   |                  |              |
| Current consumption [mA]                             | 3.6...21  |                   |                  |              |
| Power-on delay time [s]                              | 1   |                   |                  |              |
| <b>3-wire</b>  |   |                   |                  |              |
| Operating voltage [V]                                | 18...32 DC  |                   |                  |              |
| Current consumption [mA]                             | < 45  |                   |                  |              |
| Power-on delay time [s]                              | 0.5   |                   |                  |              |
| <b>Inputs / outputs</b>                              |   |                   |                  |              |
| Number of inputs and outputs                         | Number of digital outputs: 2; Number of analogue outputs: 1 |                   |                  |              |
| <b>Outputs</b>                                       |   |                   |                  |              |
| Total number of outputs                              | 2   |                   |                  |              |
| Output signal  | switching signal; analogue signal; IO-Link; (configurable)  |                   |                  |              |
| 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   |                   |                  |              |
| <b>2-wire</b>  |   |                   |                  |              |
| Max. load [Ω]  | 300   |                   |                  |              |
| <b>3-wire</b>  |   |                   |                  |              |
| Max. voltage drop switching output DC [V]            | 2   |                   |                  |              |
| Permanent current rating of switching output DC [mA] | 250   |                   |                  |              |
| Switching frequency DC [Hz]                          | 125   |                   |                  |              |
| Max. load [Ω]  | (U <sub>b</sub> - 10 V) / 20 mA                             |                   |                  |              |
| <b>Measuring/setting range</b>                       |   |                   |                  |              |
| Measuring range                                      | -0.05...1 bar   | -50...1000 mbar   | -0.73...14.5 psi | -5...100 kPa |
| Set point SP   | -48...1000 mbar   | -0.7...14.5 psi   | -4.8...100 kPa   |              |
| Reset point rP                                       | -50...998 mbar  | -0.73...14.47 psi | -0.5...99.8 kPa  |              |
| Analogue start point                                 | -50...750 mbar  | -0.73...10.88 psi | -5...75 kPa      |              |
| Analogue end point                                   | 200...1000 mbar   | 2.9...14.5 psi    | 20...100 kPa     |              |
| In steps of  | 1 mbar  | 0.01 psi          | 0.1 kPa          |              |
| Factory setting                                      |   | SP1 = 250 mbar    | rP1 = 230 mbar   |              |
|  |   | SP2 = 750 mbar    | rP2 = 730 mbar   |              |
|  |   | ASP = 0 mbar      | AEP = 1000 mbar  |              |
|  |   | dAP = 0.06 s      | dAA = 0.03 s     |              |



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| Accuracy / deviations  |  |                 |
|--|--|-----------------|
| Switch point accuracy<br>[% of the span]                     | < ± 0,2; (Turn down 1:1)   |                 |
| Repeatability<br>[% of the span]                             | < ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)   |                 |
| Characteristics deviation<br>[% of the span]                 | < ± 0,2; (Turn down 1:1, linearity, incl. hysteresis and repeatability, limit value setting to DIN EN IEC 62828-1) |                 |
| 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)   |                 |
| Temperature coefficient zero point<br>[% of the span / 10 K] | < ± 0,05; (0...70 °C)  |                 |
| Temperature coefficient span<br>[% of the span / 10 K]       | < ± 0,15; (0...70 °C)  |                 |
| Response times   |  |                 |
| Damping process value dAP [s]                                | 0...30   |                 |
| Damping for the analogue output dAA [s]                      | 0.01...99.99   |                 |
| 2-wire   |  |                 |
| Step response time analogue output [ms]                      | 45   |                 |
| 3-wire   |  |                 |
| Min. response time of switching output (dAP) [ms]            | 3  |                 |
| Step response time analogue output [ms]                      | 7  |                 |
| Interfaces   |  |                 |
| Communication interface                                      | IO-Link  |                 |
| Transmission type  | COM2 (38,4 kBaud)  |                 |
| IO-Link revision   | 1.0  |                 |
| SIO mode   | yes  |                 |
| Required master port type                                    | A  |                 |
| Process data analogue  | 1  |                 |
| Process data binary  | 2  |                 |
| Min. process cycle time [ms]                                 | 2.3  |                 |
| Supported DeviceIDs  | <b>Type of operation</b>   | <b>DeviceID</b> |
|  | default  | 256             |
| Operating conditions   |  |                 |
| Ambient temperature [°C]                                     | -25...80   |                 |
| Storage temperature [°C]                                     | -40...100  |                 |
| Protection   | IP 67; IP 68; IP 69K   |                 |

# PI2797



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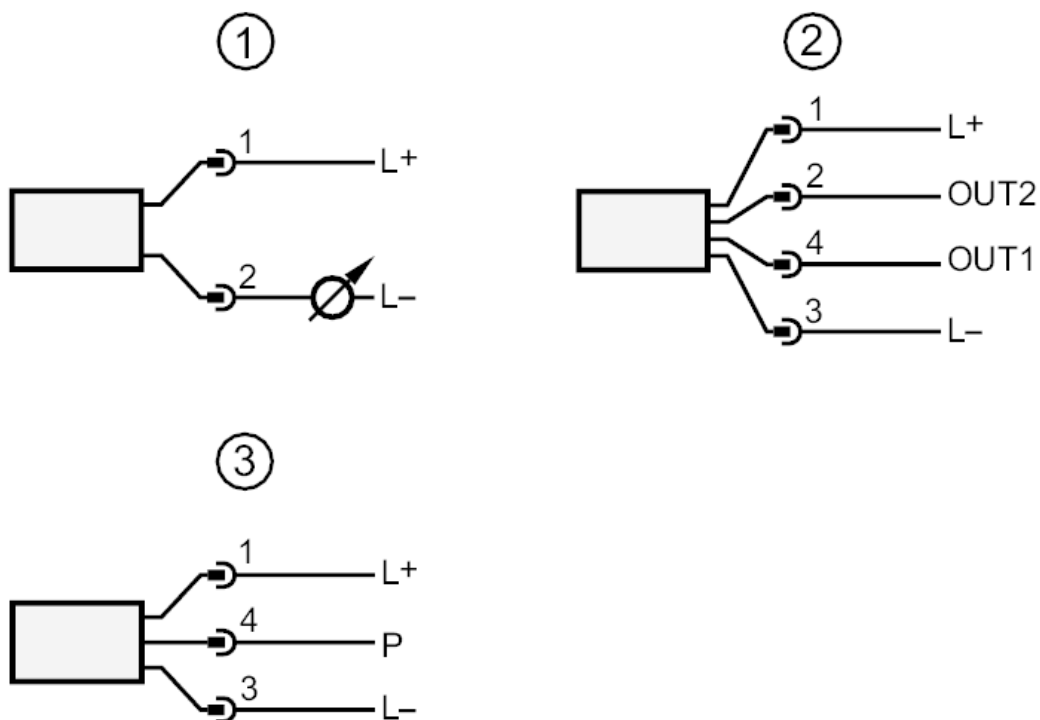
| Tests / approvals                                       |  |                               |
|---|--|-------------------------------|
| EMC   | EN 61000-4-2 ESD   | 4 kV CD / 8 kV AD             |
|   | EN 61000-4-3 HF radiated   | 10 V/m                        |
|   | EN 61000-4-4 Burst   | 2 kV                          |
|   | EN 61000-4-5 Surge   | 0,5/1 kV                      |
|   | EN 61000-4-6 HF conducted  | 10 V                          |
|   | Shock resistance   | DIN IEC 68-2-27               |
| Vibration resistance                                    | DIN IEC 68-2-6   | 20 g (10...2000 Hz)           |
| MTTF [years]  |  | 160                           |
| Note on approval  | factory certificate available as download at <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a>                  |                               |
| Mechanical data   |  |                               |
| Weight [g]  |  | 356                           |
| Housing   |  | cylindrical                   |
| Dimensions [mm]   |  | Ø 50 / L = 105.8              |
| 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)<br>surface characteristics: Ra < 0,4 µm / Rz = 4 µm; PTFE |                               |
| Min. pressure cycles                                    |  | 100 million                   |
| Process connection                                      | threaded connection G 1 external thread with Aseptoflex Vario sealing contour  |                               |
| 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; psi; inH <sub>2</sub> O; mWS; % of the span   |                               |
| Remarks   |  |                               |
| Pack quantity   |  | 1 pcs.                        |
| Electrical connection                                   |  |                               |
| Connector: 1 x M12; coding: A; Contacts: 4, gold-plated |  |                               |
|   |  |                               |



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### Connection



- 1 connection for 2-wire operation
- 2 connection for 3-wire operation :
- OUT1 switching output
- OUT2 switching output
- analogue output
- 3 connection for IO-Link parameter setting (P = communication via IO-Link)