

# PI2797

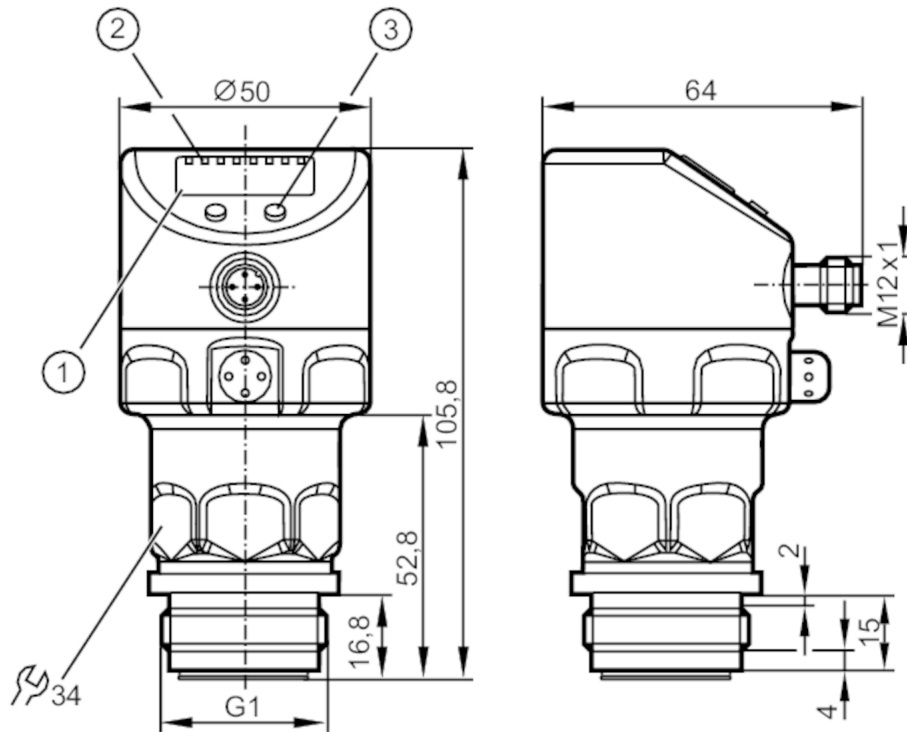


## Flush pressure sensor with display

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



### 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 Aseptoflex Vario    |                 |                  |              |

### 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. 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   |         |          |
| No dead space                                  | yes   |         |          |
| MAWP (for applications according to CRN) [bar] | 10  |         |          |



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| Electrical data                                 |      |   |                 |                   |                 |
|---|------|---|-----------------|-------------------|-----------------|
| Min. insulation resistance                      | [MΩ] | 100; (500 V DC)   |                 |                   |                 |
| Protection class                                |      | III   |                 |                   |                 |
| Reverse polarity protection                     |      | yes   |                 |                   |                 |
| Measuring principle                             |      | hydrostatic   |                 |                   |                 |
| Integrated watchdog                             |      | yes   |                 |                   |                 |
| 2-wire  |      |   |                 |                   |                 |
| Operating voltage                               | [V]  | 20...32 DC  |                 |                   |                 |
| Current consumption                             | [mA] | 3.6...21  |                 |                   |                 |
| Power-on delay time                             | [s]  | 1   |                 |                   |                 |
| 3-wire  |      |   |                 |                   |                 |
| Operating voltage                               | [V]  | 18...32 DC  |                 |                   |                 |
| Current consumption                             | [mA] | < 45  |                 |                   |                 |
| 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; (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   |                 |                   |                 |
| 2-wire  |      |   |                 |                   |                 |
| Max. load                                       | [Ω]  | 300   |                 |                   |                 |
| 3-wire  |      |   |                 |                   |                 |
| 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                             |                 |                   |                 |
| Measuring/setting range                         |      |   |                 |                   |                 |
| 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         |



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|                 |                |                 |
|-----------------|----------------|-----------------|
| Factory setting | SP1 = 250 mbar | rP1 = 230 mbar  |
|                 | SP2 = 750 mbar | rP2 = 730 mbar  |
|                 | ASP = 0 mbar   | AEP = 1000 mbar |

### Accuracy / deviations

|  |  |
|--|--|
| Switch point accuracy<br>[% of the span]                     | < ± 0,2; (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; (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 |
| <b>2-wire</b>                                     |              |
| Step response time analogue output [ms]           | 45           |
| <b>3-wire</b>                                     |              |
| 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               |          |
| Profiles                     | no profile        |          |
| 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          | Type of operation | DeviceID |
|                              | Default           | 256      |

### Operating conditions

|                          |           |
|--------------------------|-----------|
| Ambient temperature [°C] | -25...80  |
| Storage temperature [°C] | -40...100 |

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|            |                      |
|------------|----------------------|
| Protection | IP 67; IP 68; IP 69K |
|------------|----------------------|

### 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   | 50 g (11 ms)        |
| 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  |
| 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  |
| Process connection       | threaded connection G 1 external thread Aseptoflex Vario   |

### 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: gold-plated

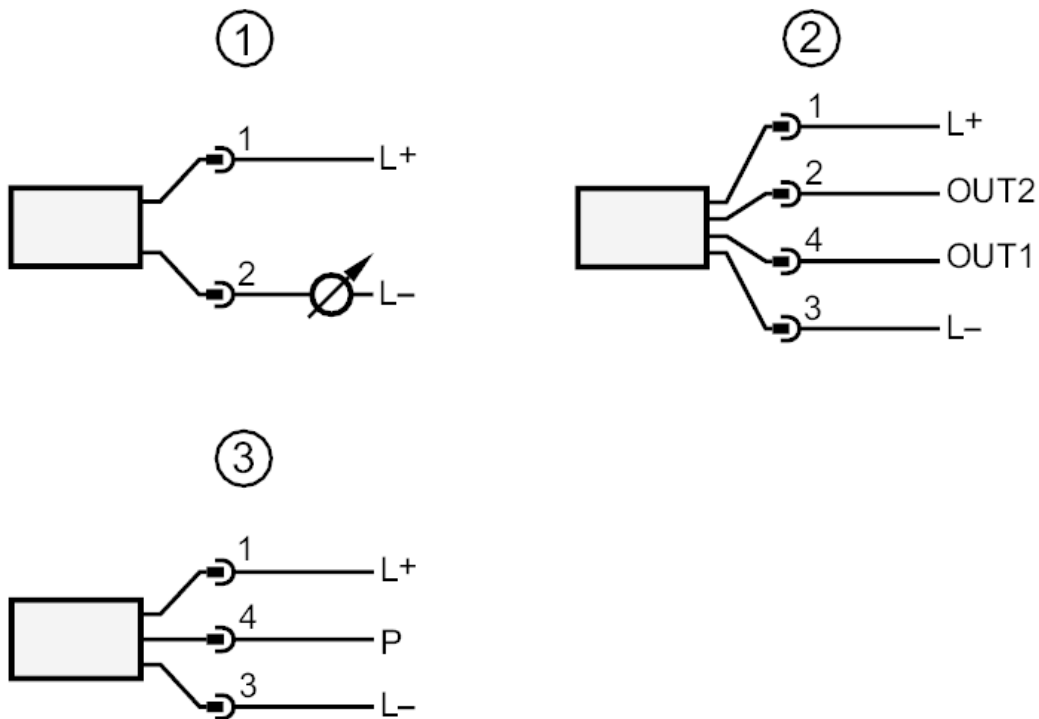




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### Connection



- 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)