

**PI2794**

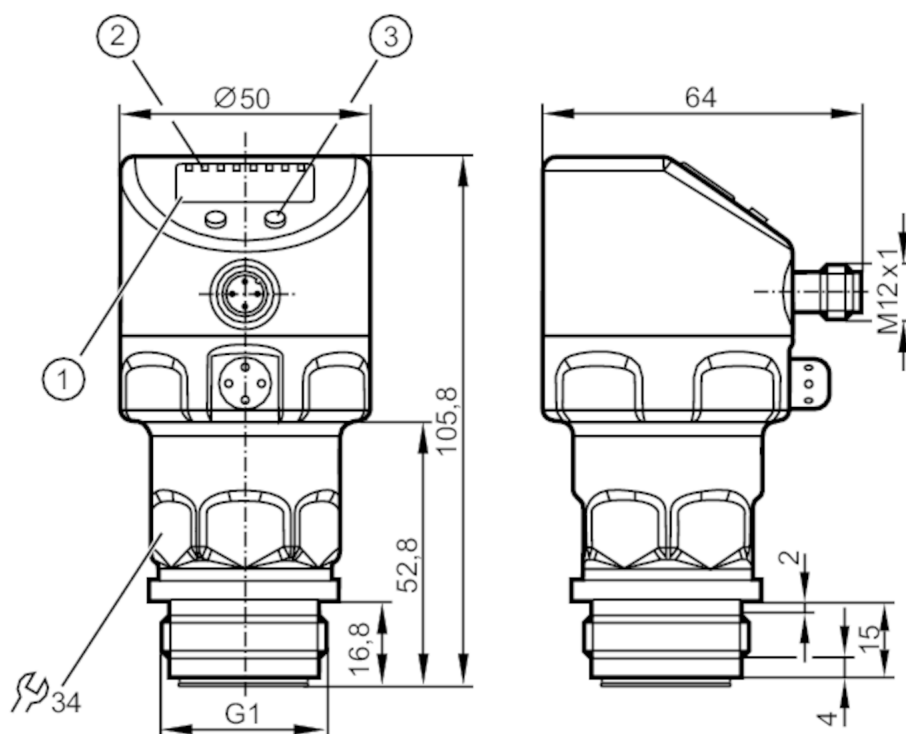


### Flush pressure sensor with display

PI-010-REA01-MFRKG/US/ /P

Alternative articles: [PI1704](#)

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 CE CRN  US EC 1935/2004 EHEDG Certified FCM   IO-Link Reg31 

## Product characteristics

|                              |                                                             |                 |              |
|------------------------------|-------------------------------------------------------------|-----------------|--------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analogue outputs: 1 |                 |              |
| Measuring range              | -1...10 bar                                                 | -14.5...145 psi | -0.1...1 MPa |
| 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                   | 150 bar                                                               | 2175 psi | 15 MPa |
| Pressure rating                          | 50 bar                                                                | 725 psi  | 5 MPa  |
| Vacuum resistance [mbar]                 | -1000                                                                 |          |        |
| Type of pressure                         | relative pressure; vacuum                                             |          |        |
| No dead space                            | yes                                                                   |          |        |
| MAWP (for applications according to CRN) | 50 bar                                                                | 725 psi  | 5 MPa  |



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| 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...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]            | (Ub - 10 V) / 20 mA                                         |                  |
| Measuring/setting range                         |                |                                                             |                  |
| Measuring range                                 | -1...10 bar    | -14.5...145 psi                                             | -0.1...1 MPa     |
| Set point SP                                    | -0.98...10 bar | -14.2...145 psi                                             | -0.098...1 MPa   |
| Reset point rP                                  | -1...9.98 bar  | -14.5...144.7 psi                                           | -0.1...0.998 MPa |
| Analogue start point                            | -1...7.5 bar   | -14.5...108.7 psi                                           | -0.1...0.75 MPa  |
| Analogue end point                              | 1.5...10 bar   | 21.8...145 psi                                              | 0.15...1 MPa     |
| In steps of                                     | 0.01 bar       | 0.1 psi                                                     | 0.001 MPa        |



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|                 |                |                 |
|-----------------|----------------|-----------------|
| Factory setting | SP1 = 2.50 bar | rP1 = 2.30 bar  |
|                 | SP2 = 7.50 bar | rP2 = 7.30 bar  |
|                 | ASP = 0.00 bar | AEP = 10.00 bar |

### Accuracy / deviations

|                                                              |                                                                                                                         |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Switch point accuracy<br>[% of the span]                     | $< \pm 0,2$ ; (Turn down 1:1)                                                                                           |
| Repeatability<br>[% of the span]                             | $< \pm 0,1$ ; (with temperature fluctuations $< 10$ K; Turn down 1:1)                                                   |
| Characteristics deviation<br>[% of the span]                 | $< \pm 0,2$ ; (Turn down 1:1, linearity, incl. hysteresis and repeatability, limit value setting to DIN EN IEC 62828-1) |
| Linearity deviation<br>[% of the span]                       | $< \pm 0,15$ ; (Turn down 1:1)                                                                                          |
| Hysteresis deviation<br>[% of the span]                      | $< \pm 0,15$ ; (Turn down 1:1)                                                                                          |
| Long-term stability<br>[% of the span]                       | $< \pm 0,1$ ; (Turn down 1:1; per year)                                                                                 |
| Temperature coefficient zero point<br>[% of the span / 10 K] | $< \pm 0,05$ ; (0...70 °C)                                                                                              |
| Temperature coefficient span<br>[% of the span / 10 K]       | $< \pm 0,15$ ; (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                                                                                                           |                   |          |         |     |
| 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          | <table> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>default</td><td>157</td></tr> </table> | Type of operation | DeviceID | default | 157 |
| Type of operation            | DeviceID                                                                                                      |                   |          |         |     |
| default                      | 157                                                                                                           |                   |          |         |     |

### 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                  | DIN EN 61000-6-2                                                                                                          |                     |
|                      | DIN EN 61000-6-3                                                                                                          |                     |
| 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]         | 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]               | 351.8                                                                                                                               |  |
| 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 / 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 | bar; psi; MPa; % of the span |                               |

## Remarks

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

## Electrical connection

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

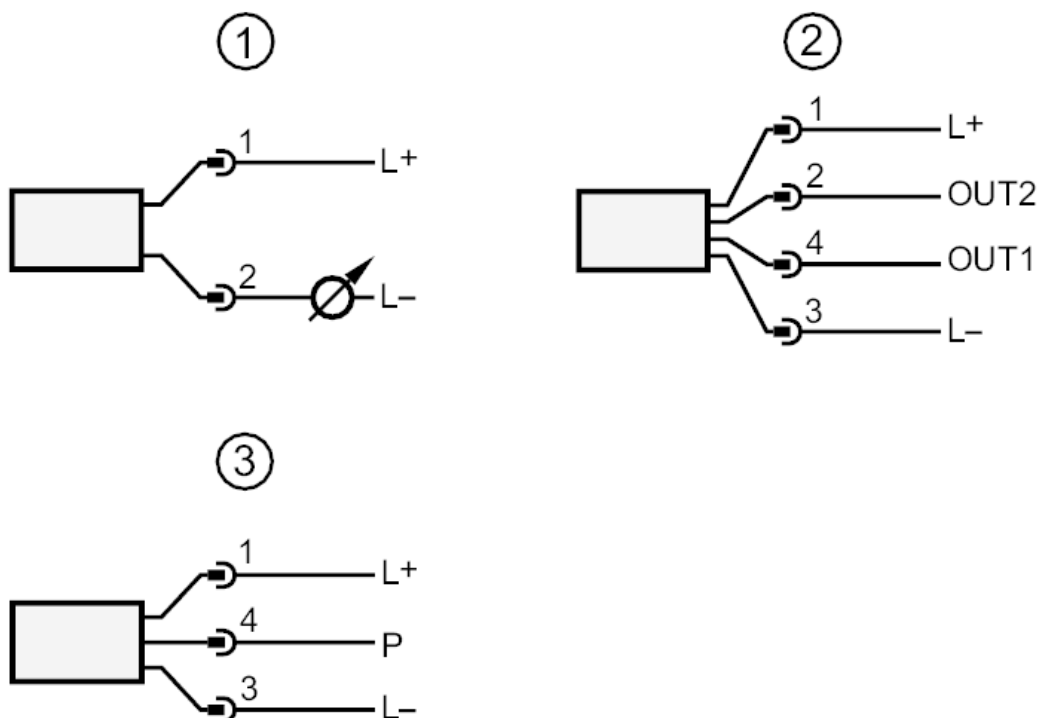




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### Connection



- 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)