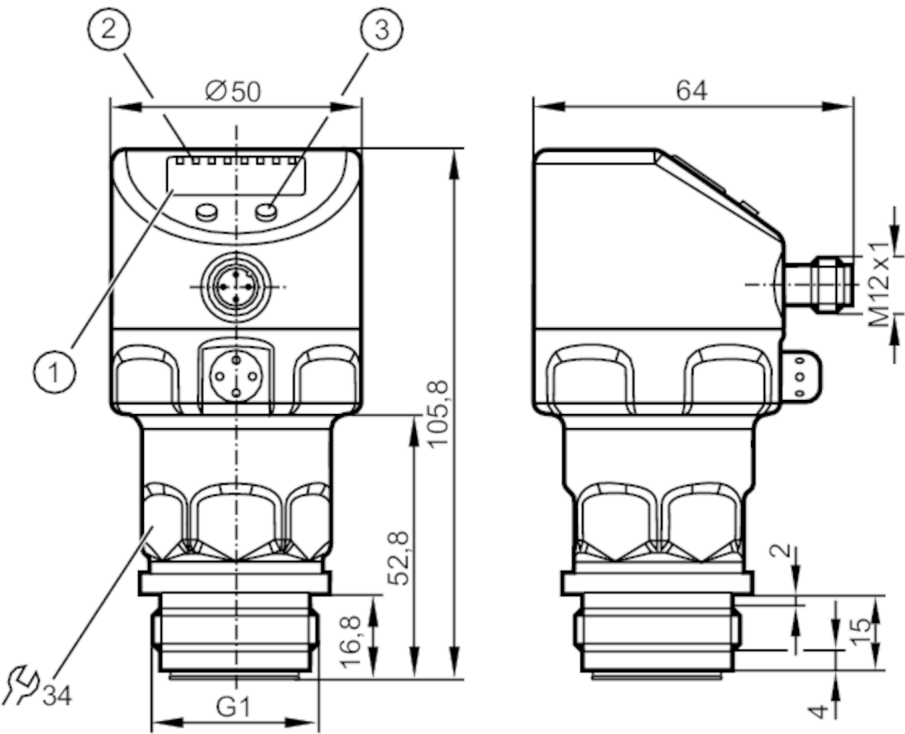




Flush pressure sensor with display

PI-2,5-REA01-MFRKG/US/ /P

Alternative articles: PI1706  
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              | -0.124...2.5 bar                                            | -124...2500 mbar | -1.8...36.27 psi | -12.4...250 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                         | 50 bar                                                                | 725 psi | 5000 kPa |
| Pressure rating                                | 20 bar                                                                | 290 psi | 2000 kPa |
| Vacuum resistance [mbar]                       | -1000                                                                 |         |          |
| Vacuum resistance [MPa]                        | -0.1                                                                  |         |          |
| Type of pressure                               | relative pressure                                                     |         |          |
| No dead space                                  | yes                                                                   |         |          |
| MAWP (for applications according to CRN) [bar] | 20                                                                    |         |          |



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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]  | (Ub - 10 V) / 20 mA                                         |                   |                                     |
| Measuring/setting range                         |      |                                                             |                   |                                     |
| Measuring range                                 |      | -0.124...2.5 bar                                            | -124...2500 mbar  | -1.8...36.27 psi    -12.4...250 kPa |
| Set point SP                                    |      | -0.12...2.5 bar                                             | -1.74...36.27 psi | -12...250 kPa                       |
| Reset point rP                                  |      | -0.124...2.496 bar                                          | -1.8...36.21 psi  | -12.4...249.6 kPa                   |
| Analogue start point                            |      | -0.124...1.88 bar                                           | -1.8...27.27 psi  | -12.4...188 kPa                     |
| Analogue end point                              |      | 0.5...2.5 bar                                               | 7.26...36.27 psi  | 50...250 kPa                        |
| In steps of                                     |      | 0.002 bar                                                   | 0.03 psi          | 0.2 kPa                             |



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|                 |                 |                 |
|-----------------|-----------------|-----------------|
| Factory setting | SP1 = 0.624 bar | rP1 = 0.574 bar |
|                 | SP2 = 1.874 bar | rP2 = 1.824 bar |
|                 | ASP = 0.000 bar | AEP = 2.500 bar |
|                 | dAP = 0.06 s    | dAA = 0.03 s    |

## 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               |          |
| 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           | 159      |

## Operating conditions

|                          |          |
|--------------------------|----------|
| Ambient temperature [°C] | -25...80 |
|--------------------------|----------|



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|                     |      |                      |
|---------------------|------|----------------------|
| Storage temperature | [°C] | -40...100            |
| 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]  | 358.5                                                                                                                               |
| 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 / 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; 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) |