

PF2054



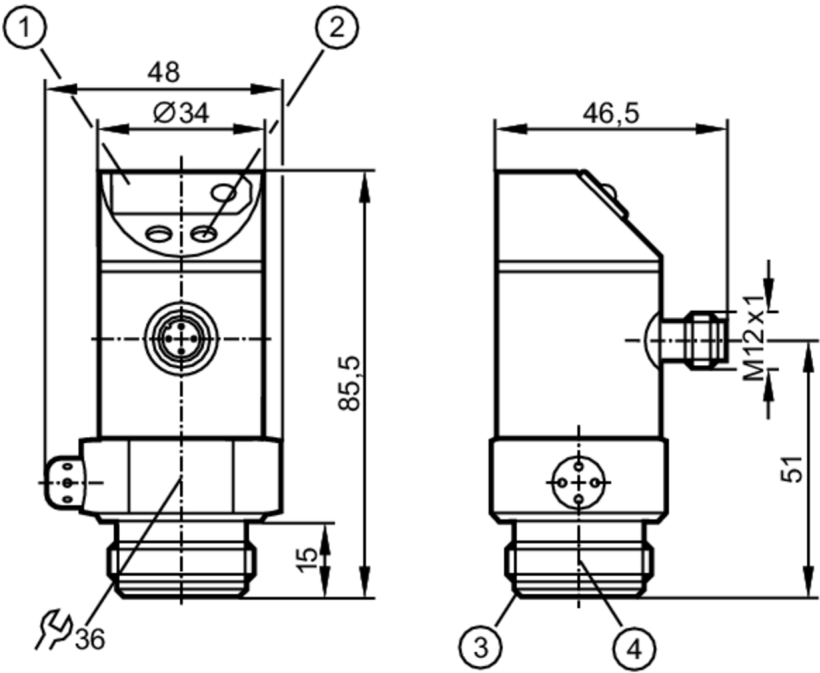
Flush pressure sensor

PF-010-RES30-MFRKG/US/ /P

phase-out article  
Discontinuation date: 03/31/2024

Alternative articles: PI1004 or PI1704  
When selecting an alternative article and accessories please note that technical data may differ!

Please do not use for new projects.  
no more adapters available as accessories



- 1 7-segment LED display
- 2 programming button
- 3 Aseptoflex sealing edge
- 4 Aseptoflex thread



| Product characteristics      |                                                             |              |                |               |
|------------------------------|-------------------------------------------------------------|--------------|----------------|---------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analogue outputs: 1 |              |                |               |
| Measuring range              | -0.5...10 bar                                               | -7...145 psi | -50...1000 kPa | -0.05...1 MPa |
| Process connection           | threaded connection Aseptoflex external thread Aseptoflex   |              |                |               |

| Application             |                                                                       |          |           |
|-------------------------|-----------------------------------------------------------------------|----------|-----------|
| Special feature         | Gold-plated contacts                                                  |          |           |
| Application             | flush mountable for the food and beverage industry                    |          |           |
| Installation            | freely rotatable housing 350°                                         |          |           |
| Media                   | viscous media and liquids with suspended particles; liquids and gases |          |           |
| Medium temperature [°C] | -25...80                                                              |          |           |
| Min. bursting pressure  | 150 bar                                                               | 2175 psi | 15000 kPa |
| Pressure rating         | 50 bar                                                                | 725 psi  | 5000 kPa  |
| Type of pressure        | relative pressure                                                     |          |           |



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|               |     |
|---------------|-----|
| No dead space | yes |
|---------------|-----|

### Electrical data

|                                 |                 |
|---------------------------------|-----------------|
| Operating voltage [V]           | 20...30 DC      |
| Current consumption [mA]        | < 60            |
| Min. insulation resistance [MΩ] | 100; (500 V DC) |
| Protection class                | III             |
| Reverse polarity protection     | yes             |
| Power-on delay time [s]         | 0.2             |
| Integrated watchdog             | yes             |

### 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; (configurable)  |
| Electrical design                                    | PNP/NPN                                            |
| Number of digital outputs                            | 2                                                  |
| Output function                                      | normally open / normally closed; (parameterisable) |
| Max. voltage drop switching output DC [V]            | 2                                                  |
| Permanent current rating of switching output DC [mA] | 250                                                |
| Switching frequency DC [Hz]                          | < 170                                              |
| Number of analogue outputs                           | 1                                                  |
| Analogue current output [mA]                         | 4...20; (scalable 1:4)                             |
| Max. load [Ω]                                        | (U <sub>b</sub> - 10 V) / 20 mA                    |
| Analogue voltage output [V]                          | 0...10; (scalable 1:4)                             |
| Min. load resistance [Ω]                             | 2000                                               |
| Short-circuit protection                             | yes                                                |
| Type of short-circuit protection                     | pulsed                                             |
| Overload protection                                  | yes                                                |

### Measuring/setting range

|                      |                  |                |                |               |
|----------------------|------------------|----------------|----------------|---------------|
| Measuring range      | -0.5...10 bar    | -7...145 psi   | -50...1000 kPa | -0.05...1 MPa |
| Set point SP         | -0.45...9.99 bar | -7...145 psi   | -45...999 kPa  |               |
| Reset point rP       | -0.5...9.94 bar  | -7...144 psi   | -50...994 kPa  |               |
| Analogue start point | -0.5...7.49 bar  | -7...109 psi   | -50...749 kPa  |               |
| Analogue end point   | 2...9.99 bar     | 29...145 psi   | 200...999 kPa  |               |
| In steps of          | 0.01 bar         | 1 psi          | 1 kPa          |               |
| Factory setting      |                  | SP1 = 2.50 bar | rP1 = 2.30 bar |               |
|                      |                  | ASP = 0.00 bar | AEP = 9.99 bar |               |

### Accuracy / deviations

|                                 |                                                                                                                    |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Repeatability [X21]             | < ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)                                                     |
| Characteristics deviation [X21] | < ± 0,6; (Turn down 1:1, linearity, incl. hysteresis and repeatability, limit value setting to DIN EN IEC 62828-1) |
| Linearity deviation [X21]       | < ± 0,5; (Turn down 1:1)                                                                                           |



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|                                              |                           |                                                                                                                                                                                                                 |
|----------------------------------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hysteresis deviation                         | [X21]                     | < ± 0,1; (Turn down 1:1)                                                                                                                                                                                        |
| Long-term stability                          | [X21]                     | < ± 0,1; (Turn down 1:1; per year)                                                                                                                                                                              |
| Temperature coefficient zero point           | [X22]                     | < ± 0,1; (0...80 °C)                                                                                                                                                                                            |
| Temperature coefficient span                 | [X22]                     | < ± 0,2; (0...80 °C)                                                                                                                                                                                            |
| <b>Response times</b>                        |                           |                                                                                                                                                                                                                 |
| Response time                                | [ms]                      | < 3                                                                                                                                                                                                             |
| Damping process value dAP                    | [s]                       | 0...4                                                                                                                                                                                                           |
| Damping for the analogue output dAA in steps | [s]                       | 0 - 0,1 - 0,5 - 2                                                                                                                                                                                               |
| Max. response time analogue output           | [ms]                      | 3                                                                                                                                                                                                               |
| <b>Software / programming</b>                |                           |                                                                                                                                                                                                                 |
| Parameter setting options                    |                           | hysteresis / window; normally open / normally closed; switching logic; current/voltage output; Damping; adaptation of displayed values; display can be rotated and switched off; Display unit; zero point; span |
| <b>Operating conditions</b>                  |                           |                                                                                                                                                                                                                 |
| Ambient temperature                          | [°C]                      | -25...80                                                                                                                                                                                                        |
| Storage temperature                          | [°C]                      | -40...100                                                                                                                                                                                                       |
| Protection                                   |                           | IP 67                                                                                                                                                                                                           |
| <b>Tests / approvals</b>                     |                           |                                                                                                                                                                                                                 |
| 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 61000-4-6 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                                         | [ANN]                     | 181                                                                                                                                                                                                             |
| <b>Mechanical data</b>                       |                           |                                                                                                                                                                                                                 |
| Weight                                       | [g]                       | 279.65                                                                                                                                                                                                          |
| Materials                                    |                           | stainless steel (1.4404 / 316L); PBT; PC; PEI; EPDM/X; FKM                                                                                                                                                      |
| 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 Aseptoflex external thread Aseptoflex                                                                                                                                                       |
| <b>Displays / operating elements</b>         |                           |                                                                                                                                                                                                                 |
| Display                                      | switching status          | 2 x LED, red                                                                                                                                                                                                    |
|                                              | function display          | 7-segment LED display                                                                                                                                                                                           |
|                                              | measured values           | 7-segment LED display                                                                                                                                                                                           |
| Display unit                                 |                           | bar; psi; kPa                                                                                                                                                                                                   |
| <b>Remarks</b>                               |                           |                                                                                                                                                                                                                 |
| Remarks                                      |                           | The 3-A qualification is only valid if adapters with 3-A qualification are used for installation.                                                                                                               |
| Notes                                        |                           | Please do not use for new projects.; no more adapters available as accessories                                                                                                                                  |
| Pack quantity                                |                           | 1 pcs.                                                                                                                                                                                                          |



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### Electrical connection

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



### Connection



OUT1  
OUT2

switching output  
switching output  
analogue output