



## 2/2 way ball valve with electric rotary actuator, ball valve in plastic, DN10 - DN50

- Suitable for aggressive media
- High flow rate value
- Actuator with adjustable limit switches
- Visual position indicator
- Safe blocked union nuts with Dual Block® Technology
- Multivoltage

Product variants described in the data sheet may differ from the product presentation and description.

### Type description

The electrical ball valve Type 8804 consists of an electrical rotary actuator and a 2/2 or 3/2 way ball valve made of plastic. Different housings and materials are available for various applications. The rotary actuator is compactly built. Moreover it can be used also as single device for the operation of other control elements (see datasheet Type 3003). Heat resistors and torque limiters are standard. The body is made of low inflammable material, classified acc. to UL 94 V0.

### Special features

The ball valves are equipped with the so-called Dual Block® Technology. This system allows you to lock the union nuts in the preset position and prevents them becoming loose during operation.

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## 1. General technical data

### Product characteristics

#### Materials

|      |                                     |
|------|-------------------------------------|
| Body | PVC-U, (PP, PVDF, PVC-C on request) |
| Seal | PTFE/EPDM, (PTFE/FKM on request)    |

#### Materials electrical actuator

|                                            |                                                                                        |
|--------------------------------------------|----------------------------------------------------------------------------------------|
| Cover/Body                                 | Nylon/PA 6.6                                                                           |
| Axis/Screws                                | Stainless steel                                                                        |
| Gear                                       | Stainless steel and PC                                                                 |
| Operating pressure                         | 0 - 10 bar/0 - 16 bar                                                                  |
| Connection between actuator and ball valve | Flange according to ISO 5211                                                           |
| Duty cycle                                 | According to IEC34 S4 = 50 %                                                           |
| Degree of protection                       | IP66 mounted with cable plug                                                           |
| Actuating times                            | See Ordering chart                                                                     |
| Limit switches                             | 4 adjustable (2 for the motor and 2 additional ones for feedback)<br>Max. 250 V AC/5 A |

### Electrical data

|                       |                                                                                   |
|-----------------------|-----------------------------------------------------------------------------------|
| Operating voltages    | 15...30 V AC 50/60 Hz / 12...48 V DC<br>100...240 V AC 50/60 Hz / 100...350 V DC  |
| Voltage tolerance     | ± 10 %; at 12...48 V DC the operating voltage must not drop below 11.5 V          |
| Electrical connection | Cable plug acc. to EN175301-803 (supply voltage) included<br>Cable glands ISO M20 |

### Media data

|       |                                                                          |
|-------|--------------------------------------------------------------------------|
| Media | Gaseous and liquid media which do not attack the body and seal materials |
|-------|--------------------------------------------------------------------------|

### Media temperature

|       |                 |
|-------|-----------------|
| PVC-U | 0 °C...+60 °C   |
| PP    | +10 °C...+80 °C |
| PVDF  | 0 °C...+120 °C  |

### Product connections

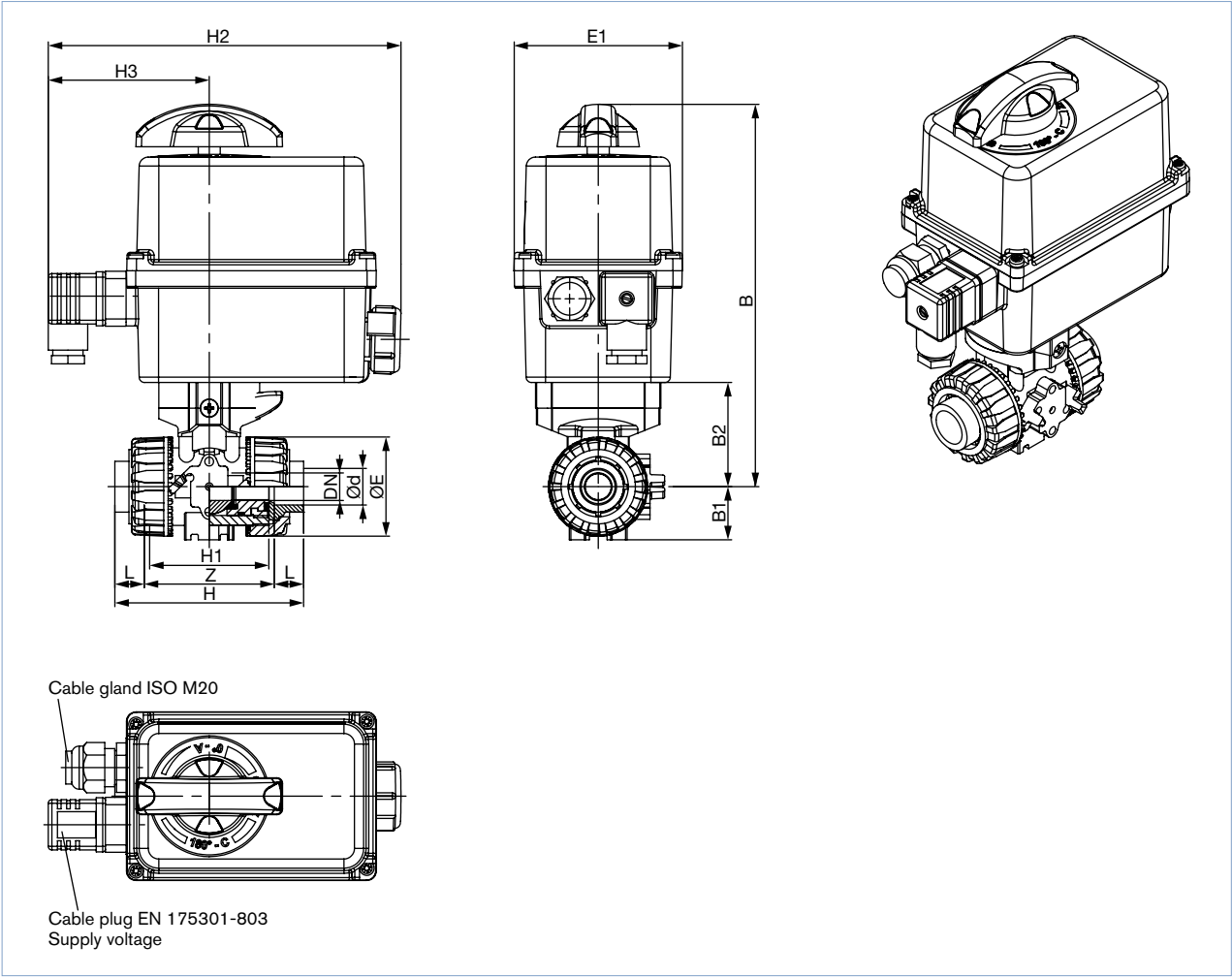
#### Port connections

|                     |               |
|---------------------|---------------|
| PVC-U               | Gluing sleeve |
| PP, PVDF on request | Welded sleeve |

### Environment and installation

|                       |                                                                 |
|-----------------------|-----------------------------------------------------------------|
| Ambient temperature   | -10 °C...+55 °C                                                 |
| Rotation angle        | 90° (±5°)                                                       |
| Installation position | Do not install actuator with the cover face down (upside down)! |

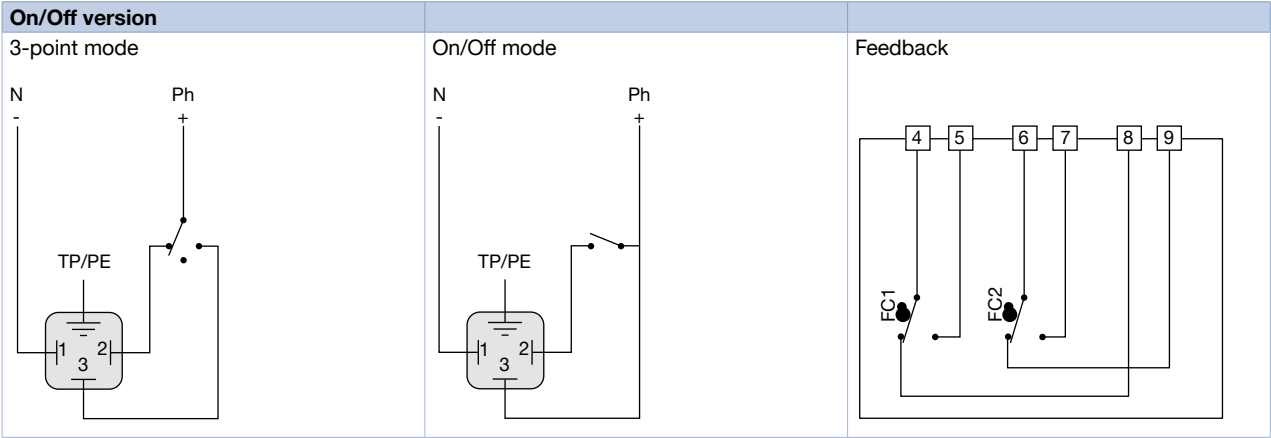
2. Dimensions



| DN | Ød | H   | H1  | Z   | L  | ØE  | B1   | B2  | B   | E1 | H2  | H3 |
|----|----|-----|-----|-----|----|-----|------|-----|-----|----|-----|----|
| 10 | 16 | 103 | 65  | 75  | 14 | 54  | 29   | 58  | 206 | 92 | 180 | 75 |
| 15 | 20 | 103 | 65  | 71  | 16 | 54  | 29   | 58  | 206 | 92 | 180 | 75 |
| 20 | 25 | 115 | 70  | 77  | 19 | 65  | 34.5 | 69  | 217 | 92 | 180 | 75 |
| 25 | 32 | 128 | 78  | 84  | 22 | 73  | 39   | 74  | 222 | 92 | 180 | 75 |
| 32 | 40 | 146 | 88  | 94  | 26 | 86  | 46   | 91  | 239 | 92 | 180 | 75 |
| 40 | 50 | 164 | 93  | 102 | 31 | 98  | 52   | 97  | 245 | 92 | 180 | 75 |
| 50 | 63 | 199 | 111 | 123 | 38 | 122 | 62   | 114 | 261 | 92 | 180 | 75 |

3. Device / Process connections

3.1. Connection details

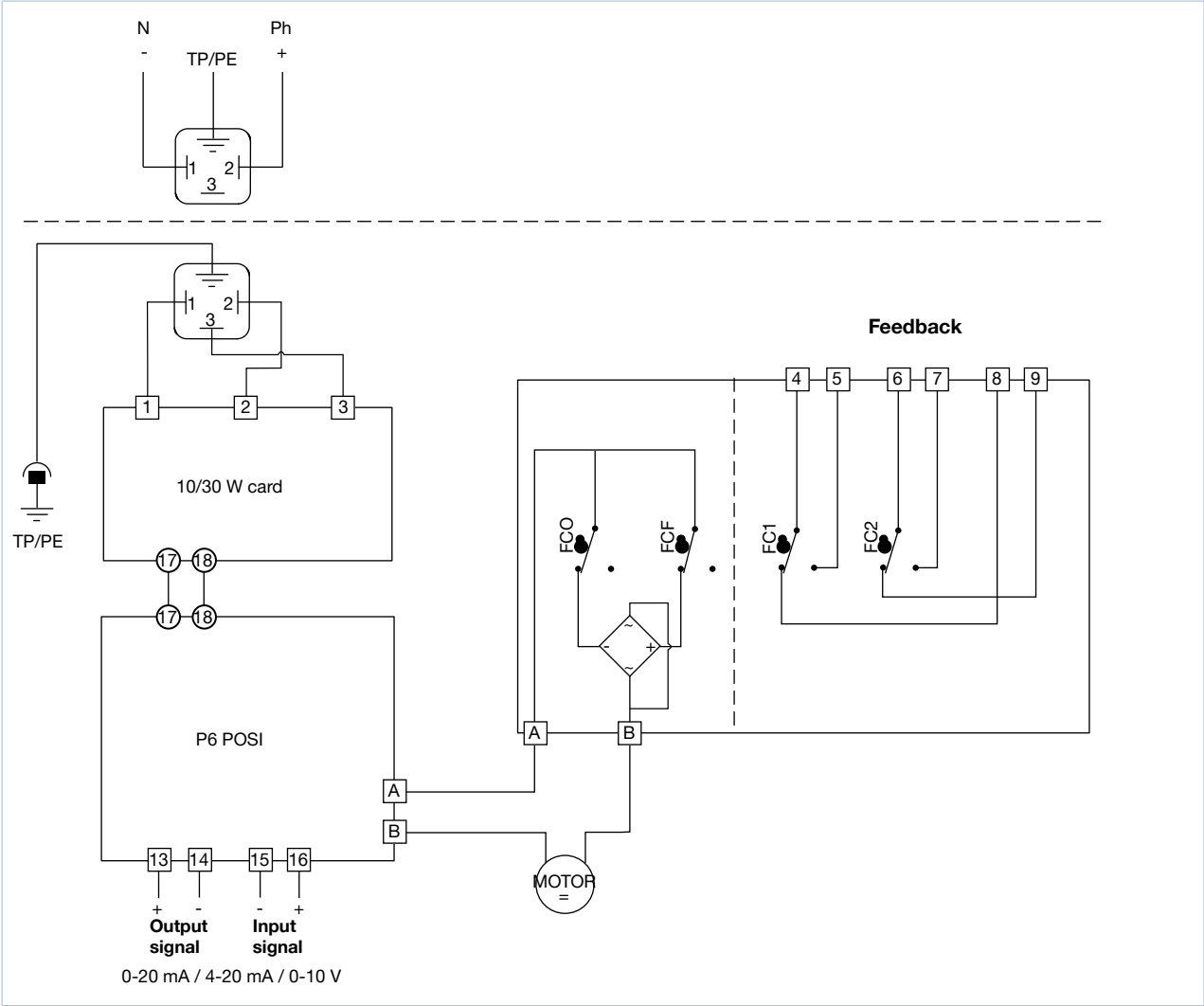


| Symbol | Description               |
|--------|---------------------------|
| FCO    | Limit switch OPEN         |
| FCF    | Limit switch CLOSED       |
| FC1    | Additional limit switch 1 |
| FC2    | Additional limit switch 2 |

Version with analogue signal input

Note:

- The resolution of the closed-loop control mode is 1°
- The input resistance for control 0...10 V is 10 kΩ
- The input resistance for control 0...20 mA/4...20 mA is 100 Ω



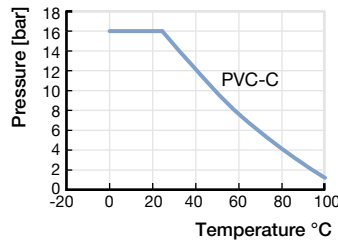
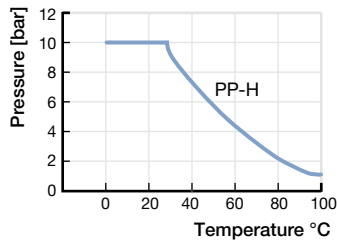
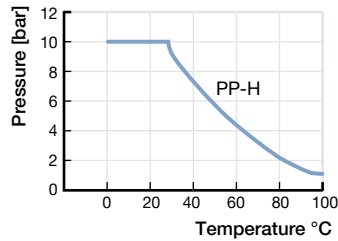
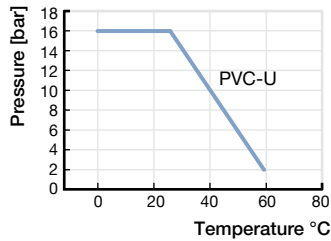
| Symbol | Description               |
|--------|---------------------------|
| FCO    | Limit switch OPEN         |
| FCF    | Limit switch CLOSED       |
| FC1    | Additional limit switch 1 |
| FC2    | Additional limit switch 2 |

## 4. Performance specifications

### 4.1. Pressure temperature diagram

**Note:**

The temperature limits of the actuators are usually lower. Therefore the lowest temperature limit values of the included system components (ball valve and actuator) must be observed.



## 5. Ordering information

### 5.1. Bürkert eShop – Easy ordering and quick delivery



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## 5.3. Ordering chart

| Nominal diameter               | Port connection Ø | Flow coefficient water | Pressure range PVC-U, PVDF | Pressure range PP | Actuating time for 90° | Actuator | Voltage <sup>1.)</sup>                       | Article no. Adhesive sleeve PVC-U |
|--------------------------------|-------------------|------------------------|----------------------------|-------------------|------------------------|----------|----------------------------------------------|-----------------------------------|
| [mm]                           | [mm]              | [m³/h]                 | [bar]                      | [bar]             | [s]                    | [Nm]     |                                              |                                   |
| <b>Seal material PTFE/EPDM</b> |                   |                        |                            |                   |                        |          |                                              |                                   |
| 10                             | 16                | 4.8                    | 0...16                     | 0...10            | 12                     | 20       | 100...240 V AC<br>50/60 Hz<br>100...350 V DC | 226440                            |
| 15                             | 20                | 12                     | 0...16                     | 0...10            | 12                     | 20       |                                              | 226453                            |
| 20                             | 25                | 23                     | 0...16                     | 0...10            | 12                     | 20       |                                              | 226454                            |
| 25                             | 32                | 46                     | 0...16                     | 0...10            | 12                     | 20       |                                              | 226455                            |
| 32                             | 40                | 66                     | 0...16                     | 0...10            | 12                     | 20       |                                              | 226456                            |
| 40                             | 50                | 105                    | 0...16                     | 0...10            | 12                     | 20       |                                              | 226457                            |
| 50                             | 63                | 204                    | 0...16                     | 0...10            | 12                     | 20       |                                              | 226178                            |
| 10                             | 16                | 4.8                    | 0...16                     | 0...10            | 12                     | 20       | 15...30 V AC<br>50/60 Hz<br>12...48 V DC     | 226459                            |
| 15                             | 20                | 12                     | 0...16                     | 0...10            | 12                     | 20       |                                              | 226460                            |
| 20                             | 25                | 23                     | 0...16                     | 0...10            | 12                     | 20       |                                              | 226461                            |
| 25                             | 32                | 46                     | 0...16                     | 0...10            | 12                     | 20       |                                              | 226462                            |
| 32                             | 40                | 66                     | 0...16                     | 0...10            | 12                     | 20       |                                              | 226463                            |
| 40                             | 50                | 105                    | 0...16                     | 0...10            | 12                     | 20       |                                              | 226464                            |
| 50                             | 63                | 204                    | 0...16                     | 0...10            | 12                     | 20       |                                              | 226465                            |

1.) at 12 to 48 V DC the operating voltage must not drop below 11.5 V

| Further versions on request                                                                                                                                                                                                                                                                                                                   |                                                                           |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--|
| <b>Additionalw</b> <ul style="list-style-type: none"> <li>Position controller with standard signal input 4...20 mA or 0...10 V</li> <li>Feedback via potentiometer or 4...20 mA analogue signal</li> <li>Slowly rotating version</li> <li>3-position actuator (90° or 180°)</li> <li>Version with emergency reset</li> <li>3/2 way</li> </ul> | <b>Material</b><br>Body: PVDF, PVC-C, PP<br>Seal material: FKM on request |  |

## 5.4. Ordering chart accessories

## Adaption flange in PP-GR

## Note:

Adaption flange in PP-GR: used for automation of ball valves with pneumatic or electric rotary actuators.

| For ball valve orifice [mm] | For port connection Ø [mm] | ISO 5211 Flange | Square [mm] | Double square [mm] | Article no. |
|-----------------------------|----------------------------|-----------------|-------------|--------------------|-------------|
| 10                          | 16                         | F03/04          | 11          | –                  | 669974      |
|                             |                            | F03/04          | –           | 14                 | 669980      |
| 15                          | 20                         | F03/04          | 11          | –                  | 669974      |
|                             |                            | F03/04          | –           | 14                 | 669980      |
| 20                          | 25                         | F03/05          | 11          | –                  | 669975      |
|                             |                            | F03/05          | –           | 14                 | 669981      |
| 25                          | 32                         | F03/05          | 11          | –                  | 669976      |
|                             |                            | F03/05          | –           | 14                 | 669982      |
| 32                          | 40                         | F05/07          | 14          | –                  | 669977      |
| 40                          | 50                         | F05/07          | 14          | –                  | 669978      |
| 50                          | 63                         | F05/07          | 14          | –                  | 669979      |
| 65                          | 75                         | F05/07          | 14          | –                  | 672134      |
| 80                          | 90                         |                 |             |                    |             |
| 100                         | 110                        |                 |             |                    |             |



Distance plate kit – used for wall fixing of the plastic ball valves

| For ball valve orifice<br>[mm] | For port connection Ø<br>[mm] | Article no.                                                                              |
|--------------------------------|-------------------------------|------------------------------------------------------------------------------------------|
| 10 – 25                        | 16 – 32                       | 772678  |
| 32 – 50                        | 40 – 63                       | 772679  |

| Description                        | Article no.                                                                              |
|------------------------------------|------------------------------------------------------------------------------------------|
| Key for setting the limit switches | 665296  |

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| Delivery |                        |
|----------|------------------------|
| Quantity | Required delivery date |

| Operating data                                                                   |                 |
|----------------------------------------------------------------------------------|-----------------|
| Function<br>(Function of the control valve in the process / process description) |                 |
| Pipeline                                                                         | DN PN           |
| Operating medium                                                                 |                 |
| Type of medium                                                                   | Fluid Steam Gas |

| Fluidic data                                       | Largest flow rate<br>1. Operating point | Largest flow rate<br>2. Operating point | Largest flow rate<br>3. Operating point | Unit |
|----------------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|------|
| Flow rate                                          |                                         |                                         |                                         |      |
| Temperature $t_1$                                  |                                         |                                         |                                         |      |
| Inlet pressure $p_1$<br>absolute (a) relative (g)  |                                         |                                         |                                         |      |
| Outlet pressure $p_2$<br>absolute (a) relative (g) |                                         |                                         |                                         |      |
| Steam pressure $p_v$                               |                                         |                                         |                                         |      |
| Viscosity ( $v / \eta$ )                           |                                         |                                         |                                         |      |
| Density ( $\rho$ )                                 |                                         |                                         |                                         |      |
| Max. permitted<br>sonic pressure level ( $L_p$ )   |                                         |                                         |                                         |      |

| Valve body            |                  |                            |                               |                              |
|-----------------------|------------------|----------------------------|-------------------------------|------------------------------|
| Construction          | Angle seat valve |                            | Globe valve                   |                              |
| DN / Nominal pressure | DN               |                            | PN                            |                              |
| Seat size             |                  |                            |                               |                              |
| Flow coefficient      | $K_{vs}$         | $m^3/h$                    | $C_v$                         | GPM(US)                      |
| Seat seal             | metallic         |                            | soft seal PTFE soft seal PEEK |                              |
| Connection            | Flange           | DIN EN 1092-1              | ANSI B16.5                    | JIS 10K                      |
|                       | Thread           | G                          | NPT                           | RC                           |
|                       | Weld             | DIN EN ISO 1127 / ISO 4200 | DIN 11850 2 / DIN 11866 A     | ASME BPE                     |
|                       | Clamp            | ASME BPE                   | DIN 32676 A (tube ISO 4200)   | DIN 32676 B (tube DIN 11850) |
|                       | Other            |                            |                               |                              |

| Valve data            |                                                                                                                                              |                                        |                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------------------------|
| Safety position       | With energy storage (factory setting NO)<br>With energy storage (factory setting NC)<br>Without energy storage (last valve position blocked) |                                        |                                                  |
| Function              | Positioner                                                                                                                                   | Process controller                     |                                                  |
| Operation             | With Touch-Display                                                                                                                           | Without Touch-Display, internal button |                                                  |
| Electrical connection | Cable gland                                                                                                                                  | M12 multi-pin plug connection          |                                                  |
| Communication         | <b>Analogue:</b><br><b>Digital (Fieldbus):</b>                                                                                               | 1 AI, 1 DI<br>EtherNet/IP<br>CANopen   | 1 AI, 1 DI, 1 AO, 2 DO<br>PROFINET<br>Modbus TCP |
| SIM card              | With                                                                                                                                         | without                                |                                                  |

| Approvals / Conformities                                                          |
|-----------------------------------------------------------------------------------|
| For use with food (conform to EG regulation no. 1935/2004)                        |
| For use with food (conform to FDA)                                                |
| Explosion protection in accordance with ATEX II 2GD mech. / IECex                 |
| European Gas Appliances Directive (EU) 2016/426, DVGW DINEN 161 and DIN EN 16678  |
| For potable water according to KTW/W270                                           |
| Certificate for the fulfilment of the order EN-ISO 10204 2.1 (Article no. 440788) |
| Test report EN-ISO 10204 2.2 (Article no. 803722)                                 |
| Conformity certification for raw material EN-ISO 10204 3.1 (included)             |
| cULus                                                                             |

| Additional Requirements / Comment |
|-----------------------------------|
|                                   |