



## Explosion Proof Rotary Actuator - On/Off and control

- Direct mounting for quarter-turn valves
- Manual override
- Corrosion resistant
- Adjustable limit switches
- ATEX II 2 GD Ex d II B T6

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

### Can be combined with

|                                                                                     |                                                        |   |
|-------------------------------------------------------------------------------------|--------------------------------------------------------|---|
|   | <b>Type 2651</b><br>2/2 or 3/2 way Ball Valve, 2-Piece | ▶ |
|  | <b>Type 2654</b><br>2/2 way ball valve 3-piece         | ▶ |
|  | <b>Type 2657</b><br>Ball Valve, manually-operated      | ▶ |
|  | <b>Type 2671</b><br>Butterfly valve                    | ▶ |
|  | <b>Type 2674</b><br>Plastic butterfly valve            | ▶ |

### Type description

The rotary actuator type 3004 is a compact, powerful and explosion proofed actuator system which provides a long service life. Materials and components have been chosen for maintenance-free operation and ensure low thermal loading on the actuator. The modular design offers many options such as extra limit switches or potentiometers, to be added to the basic unit.

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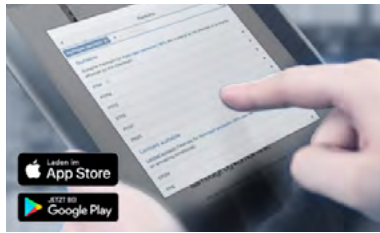
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## 1. General Technical Data

|                                                    |                                                                                                                                                                                                                    |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product properties</b>                          |                                                                                                                                                                                                                    |
| Dimensions                                         | Detailed information can be found in chapter <b>"3. Dimensions"</b> on page 4.                                                                                                                                     |
| <b>Material</b>                                    |                                                                                                                                                                                                                    |
| Cover / Body                                       | Epoxy coated aluminium                                                                                                                                                                                             |
| Axis / Screw                                       | Stainless steel                                                                                                                                                                                                    |
| Gear                                               | Stainless steel                                                                                                                                                                                                    |
| <b>ISO Mounting</b>                                |                                                                                                                                                                                                                    |
| Motor 25, 45, 75 Nm                                | F05/F07                                                                                                                                                                                                            |
| Motor 100, 150, 300 Nm                             | F07/F10                                                                                                                                                                                                            |
| <b>Drive</b>                                       |                                                                                                                                                                                                                    |
| Motor 25 Nm                                        | Female star 17 mm; conversion sleeve star 17/11 mm enclosed                                                                                                                                                        |
| Motor 45, 75 Nm                                    | Female star 17 mm; conversion sleeve star 17/14 mm enclosed                                                                                                                                                        |
| Motor 100, 150, 300 Nm                             | Female star 22 mm; conversion sleeve star 22/17 mm enclosed                                                                                                                                                        |
| <b>Manual override</b>                             |                                                                                                                                                                                                                    |
| Motor 25, 45, 75 Nm                                | By outgoing axis with return spring                                                                                                                                                                                |
| Motor 100, 150, 300 Nm                             | By hand wheel                                                                                                                                                                                                      |
| <b>Weight</b>                                      |                                                                                                                                                                                                                    |
| Motor 25, 45, 75 Nm                                | 4 kg                                                                                                                                                                                                               |
| Motor 100, 150, 300 Nm                             | 6 kg                                                                                                                                                                                                               |
| Mechanical limit stops                             | Standard                                                                                                                                                                                                           |
| Optical position indicator                         | Standard                                                                                                                                                                                                           |
| <b>Performance data</b>                            |                                                                                                                                                                                                                    |
| Torque                                             | 25, 45, 75, 100, 150 und 300 Nm<br>Detailed information can be found in chapter <b>"6. Ordering information"</b> on page 9.                                                                                        |
| Position angle                                     | 90° (±5°)                                                                                                                                                                                                          |
| Actuating time (10...90 %)                         | 7...50 sec.<br>Detailed information can be found in chapter <b>"6. Ordering information"</b> on page 9.                                                                                                            |
| Options                                            | Rotation 180° or 270°<br>3 position actuator (for 180°)<br>Feedback On/Off actuators:<br>- Potentiometer 1K, 5K, or 10K<br>- Analogue signal 4...20 mA<br>Fail safe option* (on request)<br>2 extra limit switches |
| <b>Electrical data</b>                             |                                                                                                                                                                                                                    |
| Operating voltage                                  | 100...240 V AC / 50...60 Hz oder 24 V AC/DC ± 10 %                                                                                                                                                                 |
| Limit switches                                     | 4 adjustable (2 for motor and 2 additional for feedback) max. 250 V AC/5 A                                                                                                                                         |
| Power consumption                                  | 45 W...85 W                                                                                                                                                                                                        |
| Voltage tolerance                                  | ± 10 %                                                                                                                                                                                                             |
| <b>Analogue signals control version</b>            |                                                                                                                                                                                                                    |
| Input                                              | -0...10 V / -4...20 mA / -0...20 mA                                                                                                                                                                                |
| Output                                             | -0...10 V / -4...20 mA / -0...20 mA                                                                                                                                                                                |
| Motor protection                                   | Electronic torque limited                                                                                                                                                                                          |
| Duty cycle                                         | At max. torque: 50 % of the time<br>Control actuator: 50 % of max. torque                                                                                                                                          |
| Heating resistor                                   | 10 W                                                                                                                                                                                                               |
| <b>Process/Port connection &amp; communication</b> |                                                                                                                                                                                                                    |
| Electrical connection                              | 2 cable glands ISO 20                                                                                                                                                                                              |
| <b>Environment and installation</b>                |                                                                                                                                                                                                                    |
| Installation position                              | Do not mount the actuator upside down!                                                                                                                                                                             |
| Ambient temperature                                | -20 °C...+70 °C                                                                                                                                                                                                    |
| Degree of protection                               | IP68                                                                                                                                                                                                               |

## 2. Materials

### 2.1. Chemical Resistance Chart – Bürkert resistApp



#### Bürkert resistApp – Chemical Resistance Chart

You want to ensure the reliability and durability of the materials in your individual application case? Verify your combination of media and materials on our website or in our resistApp.

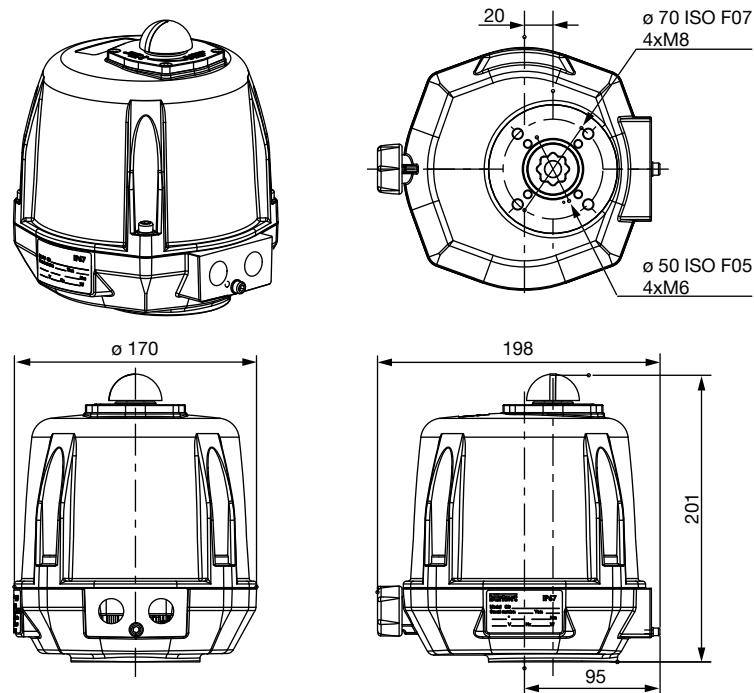
[Start Chemical Resistance Check](#)

## 3. Dimensions

### 3.1. Motor 25, 45, 75 Nm

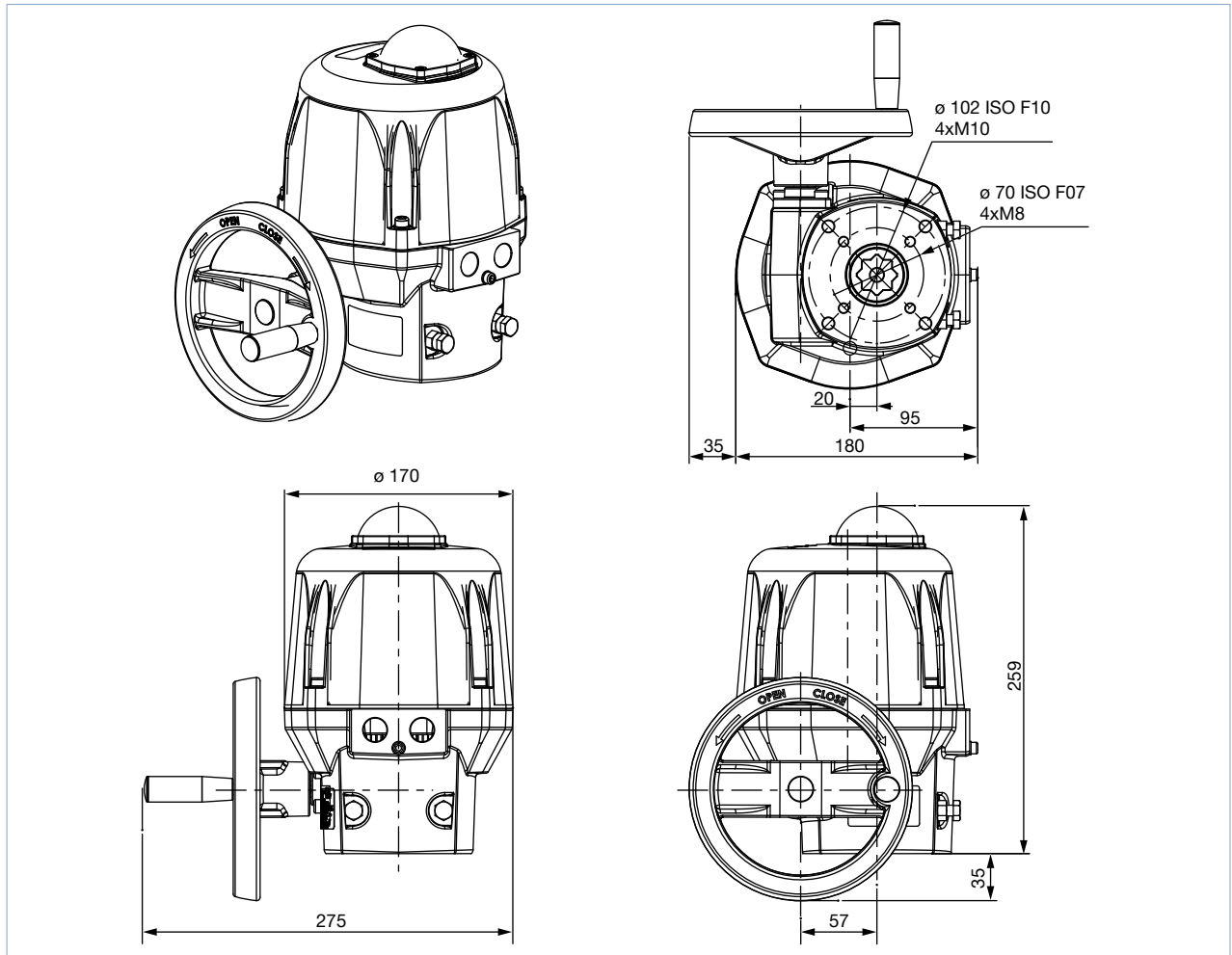
#### Note:

Dimensions in mm



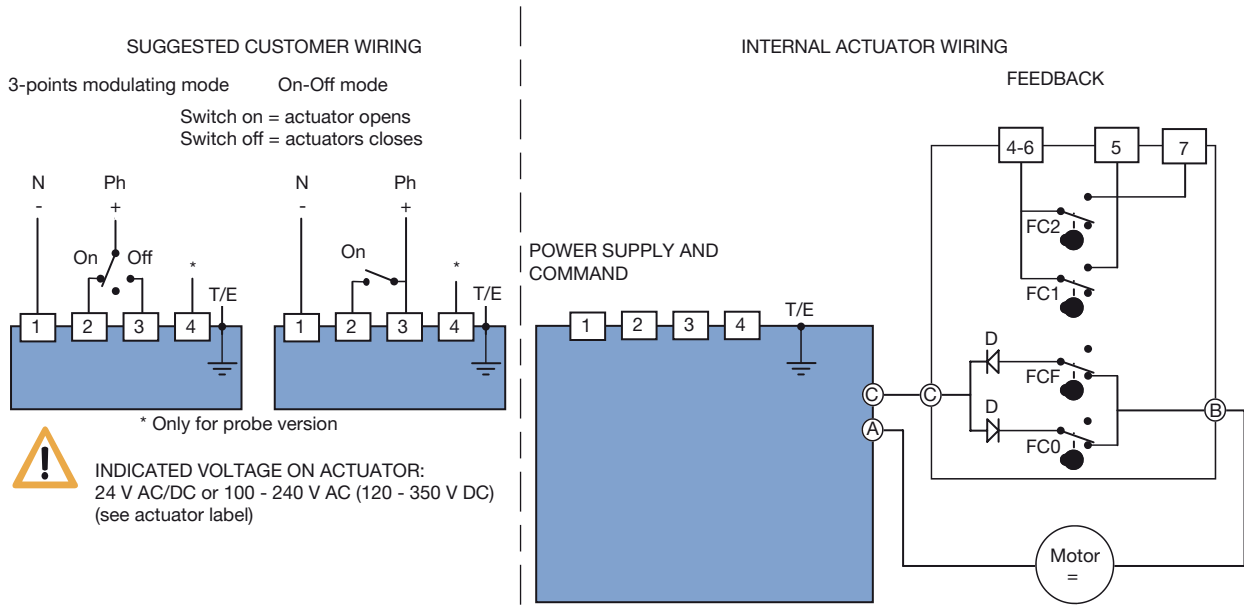
**3.2. Motor 100, 150, 300 Nm****Note:**

Dimensions in mm



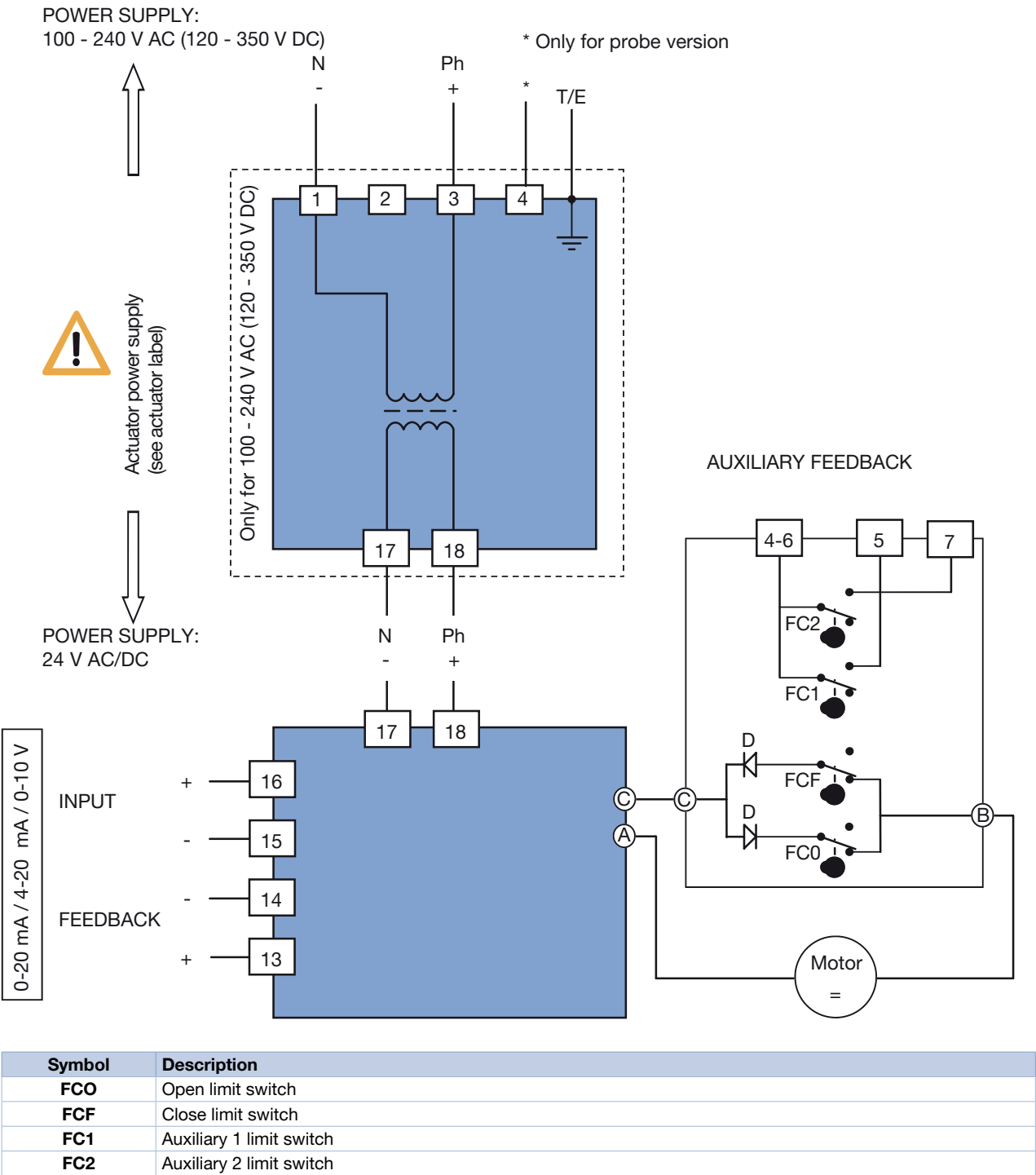
4. Device/Process connections

4.1. Multi-voltage or 24 V AC/DC standard version



| Symbol | Description              |
|--------|--------------------------|
| FCO    | Open limit switch        |
| FCF    | Close limit switch       |
| FC1    | Auxiliary 1 limit switch |
| FC2    | Auxiliary 2 limit switch |

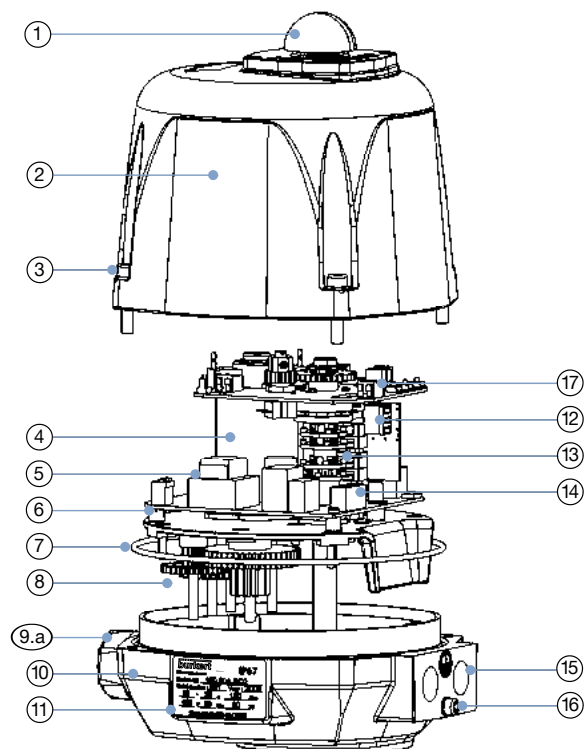
4.2. Multi-voltage or 24 V AC/DC with programmable analogue signal input or output



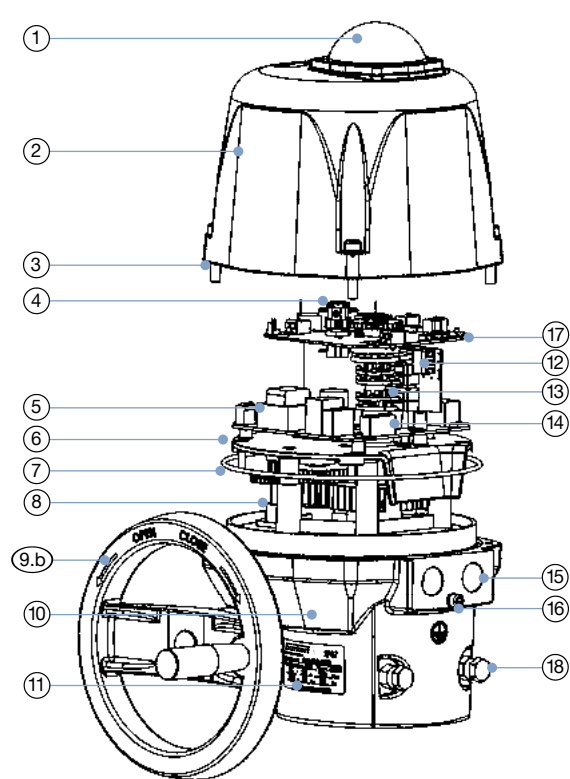
## 5. Product design and assembly

### 5.1. Product features

Motor 25, 45, 75 Nm



Motor 100, 150, 300 Nm



| No. | Element                                                |
|-----|--------------------------------------------------------|
| 1   | Optical position indicator                             |
| 2   | Cover                                                  |
| 3   | Stainless steel screws                                 |
| 4   | Motor                                                  |
| 5   | Power supply card                                      |
| 6   | Gear box                                               |
| 7   | O-ring                                                 |
| 8   | Gear                                                   |
| 9.a | Manual override                                        |
| 9.b | Hand wheel                                             |
| 10  | Housing                                                |
| 11  | Identification label                                   |
| 12  | Auxiliary limit switch terminal                        |
| 13  | Cams                                                   |
| 14  | Power supply terminal                                  |
| 15  | Internal thread M20 × 1.5                              |
| 16  | Earth screw                                            |
| 17  | Positioning card (only actuator with position control) |
| 18  | Mechanical limit stops                                 |

## 6. Ordering information

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



#### Bürkert eShop – Easy ordering and fast delivery

You want to find your desired Bürkert product or spare part quickly and order directly? Our online shop is available for you 24/7. Sign up and enjoy all the benefits.

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### 6.2. Bürkert product filter



#### Bürkert product filter – Get quickly to the right product

You want to select products comfortably based on your technical requirements? Use the Bürkert product filter and find suitable articles for your application quickly and easily.

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### 6.3. Ordering chart

#### Standard version without analogue signal input

##### Note:

- For the actuator choice, we recommend a safety torque equal to 1.5 times of the valve maximal torque (2 times for the control version).
- Other regulating times and delay angles on request

| Drive stars | Conversion adapter star | Connection flange | Torque | 90° ravel | Power consumption | Voltage / Frequency                                  | Article no. |
|-------------|-------------------------|-------------------|--------|-----------|-------------------|------------------------------------------------------|-------------|
| [mm]        | [mm]                    |                   | [Nm]   | [s]       | [W]               | [V / Hz]                                             |             |
| 17          | 17/11                   | F05-F07           | 25     | 7         | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 181308      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 181309      |
|             | 17/14                   | F05-F07           | 45     | 15        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 181310      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 181311      |
|             |                         |                   | 75     | 20        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 181312      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 181313      |
| 22          | 22/17                   | F07-F10           | 100    | 15        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 181314      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 181315      |
|             |                         |                   | 150    | 30        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 181316      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 181317      |
|             |                         |                   | 300    | 60        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 181318      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 181319      |

1.) The operating voltage mustn't to fall below 11.5 V

## Control version with 4...20 mA, 0...20 mA or 0...10 V programmable analogue signal input or output

## Note:

- For the actuator choice, we recommend a safety torque equal to 1.5 times of the valve maximal torque (2 times for the control version).
- Other regulating times and delay angles on request

| Drive stars | Conversion adapter star | Connection flange | Torque | 90° ravel | Power consumption | Voltage / Frequency                                  | Article no. |
|-------------|-------------------------|-------------------|--------|-----------|-------------------|------------------------------------------------------|-------------|
| [mm]        | [mm]                    |                   | [Nm]   | [s]       | [W]               | [V / Hz]                                             |             |
| 17          | 17/11                   | F05-F07           | 25     | 15        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 182324      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 182326      |
|             | 17/14                   | F05-F07           | 45     | 15        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 182327      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 182330      |
|             |                         |                   | 75     | 20        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 182335      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 182384      |
| 22          | 22/17                   | F07-F10           | 100    | 15        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 182385      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 182386      |
|             |                         |                   | 150    | 30        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 182388      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 182390      |
|             |                         |                   | 300    | 60        | 45                | 100...240 V AC, / 50/60 Hz / 100...350 V DC          | 182392      |
|             |                         |                   |        |           |                   | 15...30 V AC, 50/60 Hz / 12...48 V DC <sup>1.)</sup> | 182394      |

1.) The operating voltage mustn't to fall below 11.5 V

## Further versions on request



**Voltage**  
Other voltages

## 6.4. Ordering chart accessories

## Conversion sleeves

| Description                              | Article no. |
|------------------------------------------|-------------|
| Conversion Sleeve star/square 14/9 mm    | 665288      |
| Conversion Sleeve star/square 14/11 mm   | 665289      |
| Conversion Sleeve square/square 17/14 mm | 665290      |
| Conversion Sleeve star/square 17/14 mm   | 773348      |
| Conversion Sleeve star/square 17/11 mm   | 773343      |
| Conversion Sleeve square/square 22/19 mm | 773836      |
| Conversion Sleeve star/square 22/17 mm   | 684858      |
| Conversion Sleeve star/star 22/14 mm     | 666684      |
| Conversion Sleeve star/square 22/11 mm   | 773344      |
| Conversion Sleeve star/square 27/22 mm   | 774594      |
| Conversion Sleeve square/square 27/19 mm | 774279      |
| Conversion Sleeve square/square 27/17 mm | 774193      |

**Replacement battery for actuators with electrical emergency reset function****Note:**

- The battery has to be replaced every 2 years at the latest or after 500 charging cycles.
- Additional Info for Type 3004: The person who changes the battery must be trained and qualified to do modifications on ATEX products.
- Actuators which do not have an electronic emergency reset when delivered cannot be retrofitted with this.

| Description                                                                                                     | Article no.                                                                                |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Replacement battery for actuators of Type 3005 and 3004 (25Nm...300Nm) with electrical emergency reset function | 772992  |

# Bürkert – Close to You

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DTS 1000097022 EN Version: T Status: RL (released | freigegeben | valide) printed: 03.08.2021

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