bürkert
FLUID CONTROL SYSTEMS

Explosion-Proof Rotary Actuator - On/Off or 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

Type 2651 ▸
2/2-way or 3/2-way ball valve, 2-piece

Type 2654 ▸
2/2-way ball valve, 3-piece

Type 2657 ▸
Ball valve, manually operated

Type 2671 ▸
Butterfly valve

Type 2674 ▸
Plastic butterfly valve

Type TKU001 ▸
2/2 way compact flange ball valve

Type 8804 ▸
Ball valve / butterfly valve with electrical rotary actuator

Type description

The electrical rotary actuator Type 3004 is a compact, powerful and explosion-proof actuator system with a long service life. Materials and components have been chosen for a 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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Visit product website ▸

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1. General technical data

Product properties	
Dimensions	Further information can be found in chapter "4. Dimensions" on page 5.
Material	
Cover	Epoxy-coated aluminium
Body	Epoxy-coated aluminium
Axis	Stainless steel
Screws	Stainless steel
Gear	Stainless steel
Weight	
Motor 25, 45, 75 Nm	4 kg
Motor 100, 150, 300 Nm	6 kg
Manual override	
Motor 25, 45, 75 Nm	Uncoupling by gearbox-coupled rotary knob
Motor 100, 150, 300 Nm	By hand wheel
Mechanical travel stops	Standard
Position indicator	Standard
Performance data	
Torque	25, 45, 75, 100, 150, 300 Nm Further information can be found in chapter "7. Ordering information" on page 10.
Rotation angle	90° (± 5°) (special angles on request)
Rotation time (10...90 %)	7...50 s Further information can be found in chapter "7. Ordering information" on page 10.
Options	• Rotation angle 180° or 270° • 3-position actuator (for 180°) • Position feedback of the On/Off actuator variant via: – Potentiometer (1000, 5000, 10000 Ω) – Analogue signal 4...20 mA • Fail-safe option • Auxiliary limit switches
Electrical data	
Operating voltage	100...240 V AC / 50...60 Hz or 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...85 W
Voltage tolerance	± 10 %
Analogue signals in control variant	
Input	0...10 V / 4...20 mA / 0...20 mA
Output	0...10 V / 4...20 mA / 0...20 mA
Motor protection	Electronic torque limiter
Duty cycle	At maximum torque: 50 % of the time Control actuator: 50 % of maximum torque
Heating resistor	10 W
Product connections and communication	
Electrical connection	2 cable glands according to ISO M20
Armature-side interface according to ISO 5211	
Motor 25, 45, 75 Nm	F05/F07
Motor 100, 150, 300 Nm	F07/F10
Armature-side interface: double square	
Motor 25 Nm	Double square 17 mm, reducing sleeve double square 17/11 mm enclosed
Motor 45, 75 Nm	Double square 17 mm, reducing sleeve double square 17/14 mm enclosed
Motor 100, 150, 300 Nm	Double square 22 mm, reducing sleeve double square 22/17 mm enclosed
Approvals and conformities	
Degree of protection	IP68
Explosion protection	Further information can be found in chapter "2.4. Explosion protection" on page 4.

Environment and installation	
Installation position	Do not install the actuator upside down, maximum installation angle: 90°
Installation site	Up to max. 2000 m altitude
Ambient temperature	- 20 °C...+ 70 °C

2. Approvals and conformities

2.1. General notes

- The approvals and conformities listed below must be stated when making enquiries. This is the only way to ensure that the product complies with all required specifications.
- Not all available variants can be supplied with the below mentioned approvals or conformities.

2.2. Conformity

In accordance with the Declaration of Conformity, the product is compliant with the EU Directives.

2.3. Standards

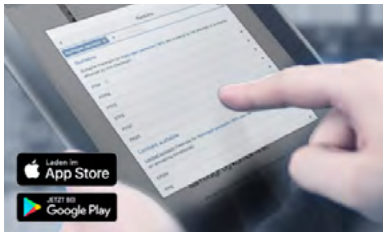
The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

2.4. Explosion protection

Approval	Description
	Optional: Explosion protection **ATEX:** Ex db IIB T6...T5 Gb Ex tb IIIC T80°C...T95°C Db **IECEx:** IECEX LCIE 22.0001X

3. Materials

3.1. 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

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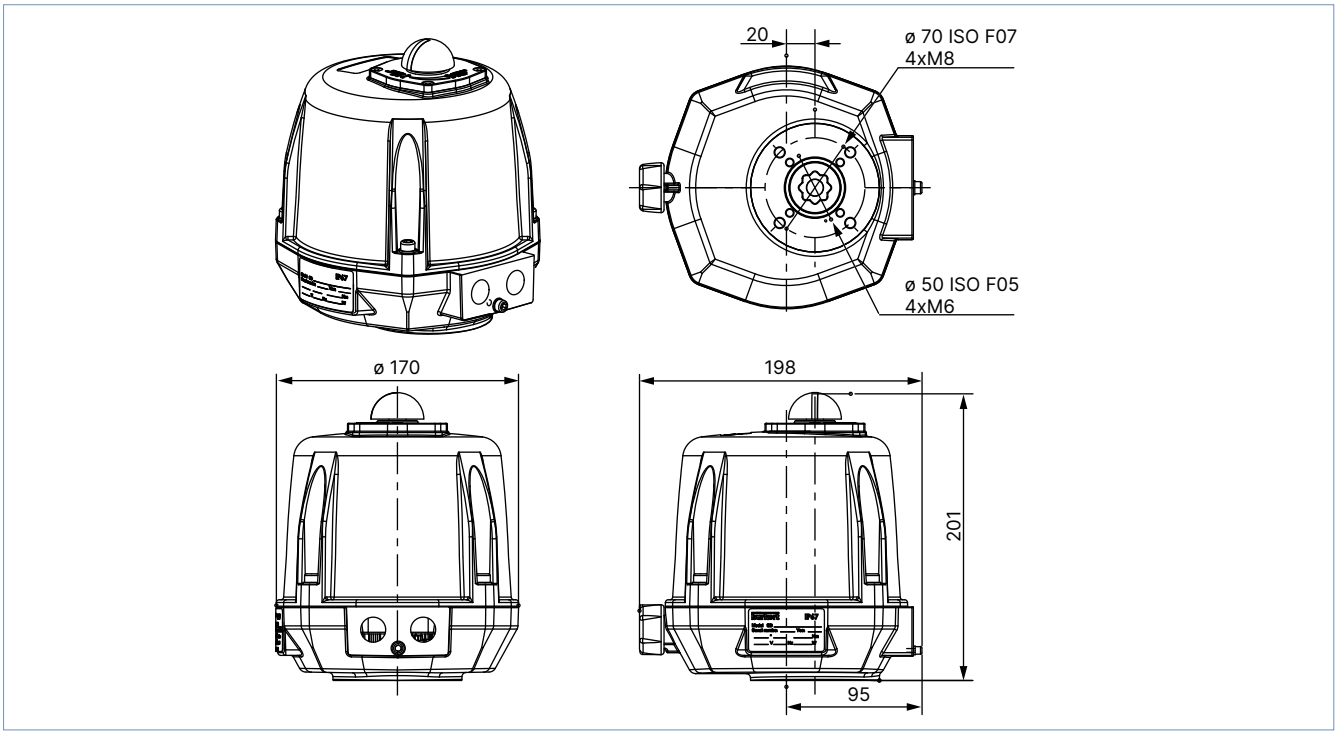
4. Dimensions

4.1. Motor 25, 45, 75 Nm

Note:
Dimensions in mm



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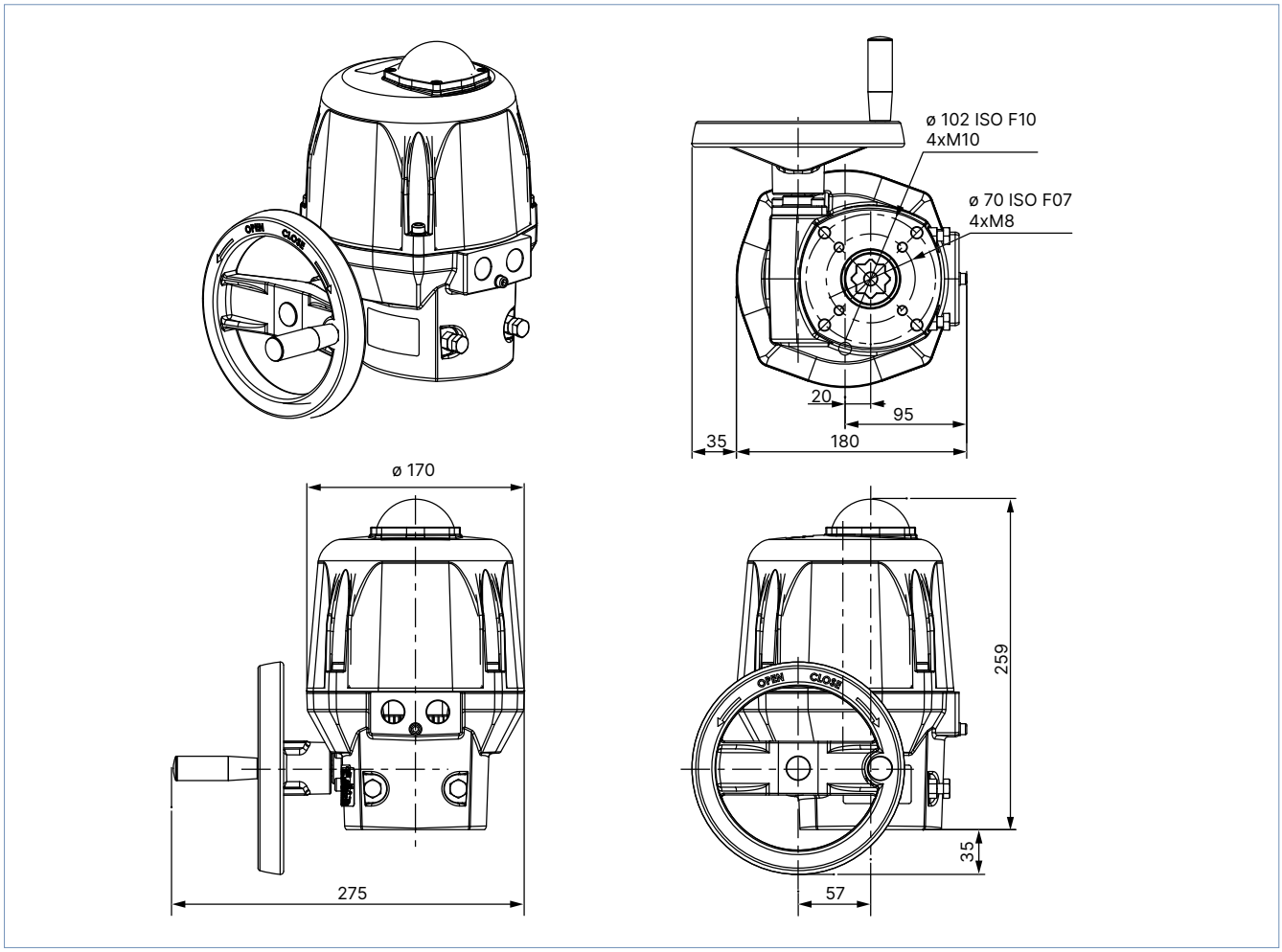
4.2. Motor 100, 150, 300 Nm

Note:
Dimensions in mm



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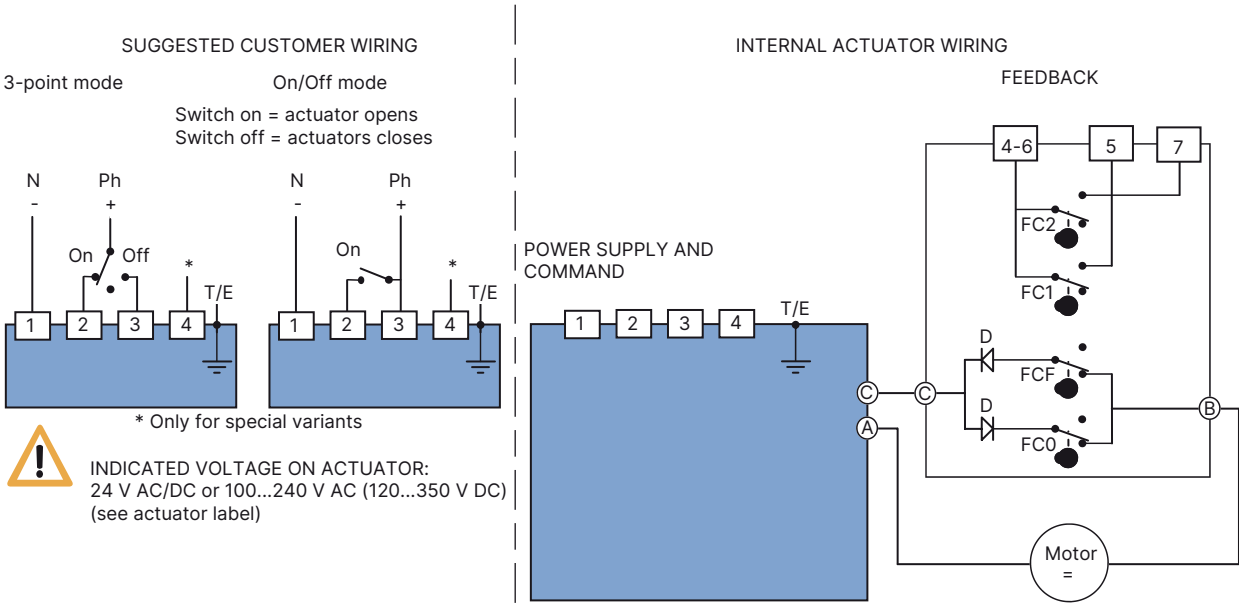
5. Product connections

5.1. Electrical connections

Standard variant



Symbol	Description
FCO	Limit switch OPEN
FCF	Limit switch CLOSED
FC1	Auxiliary limit switch 1
FC2	Auxiliary limit switch 2

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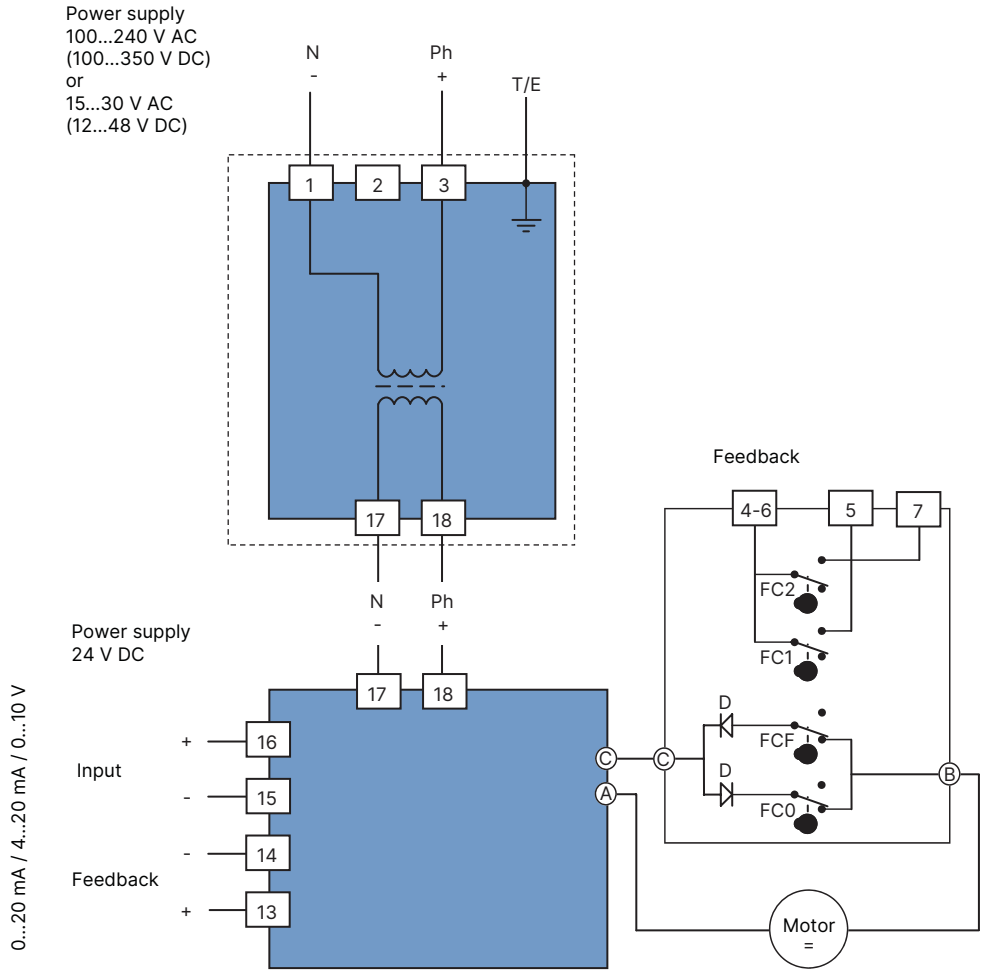
Control variant with 4...20 mA, 0...20 mA or 0...10 V programmable analogue signal input or output



Symbol	Description
FCO	Limit switch OPEN
FCF	Limit switch CLOSED
FC1	Auxiliary limit switch 1
FC2	Auxiliary limit switch 2

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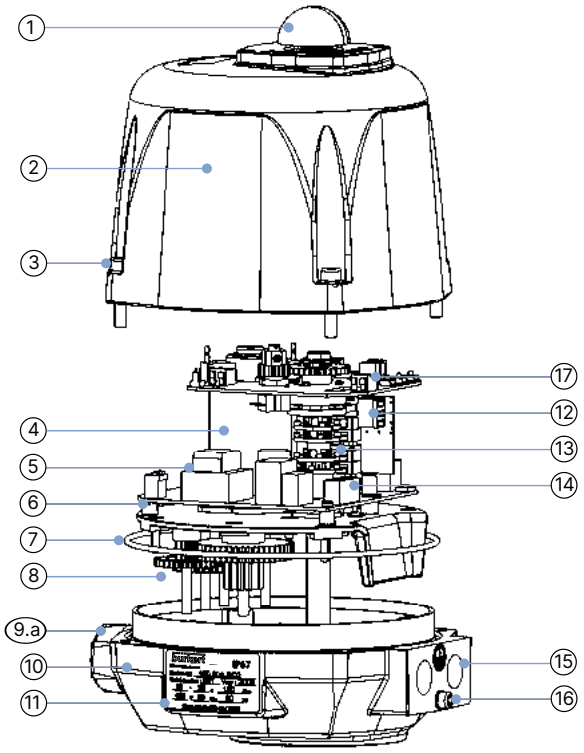
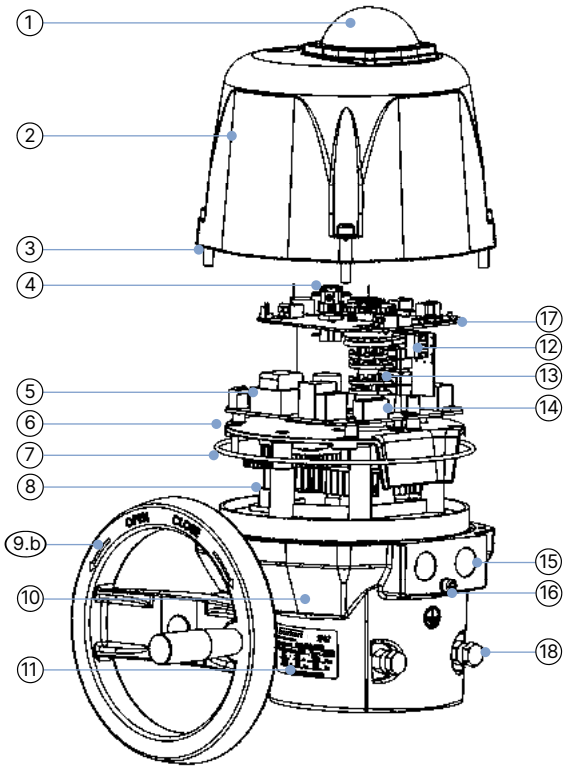
6. Product design and assembly

6.1. Product features

Motor 25, 45, 75 Nm



Motor 100, 150, 300 Nm



No.	Element
1	Position indicator
2	Cover
3	Stainless steel screws
4	Motor
5	Power supply card
6	Gear plate
7	O-ring
8	Gear
9.a	Clutch wheel for manual override
9.b	Hand wheel
10	Housing
11	Type label
12	Auxiliary limit switch terminal
13	Switching cams
14	Power supply terminal strip
15	Internal thread according to M20 × 1.5
16	Earthing screw
17	Positioning card (only with control actuator)
18	Mechanical travel stops

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7. Ordering information

7.1. Bürkert eShop

Bürkert eShop – Easy ordering and quick 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.

Order online now

7.2. 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.

Try out our product filter

7.3. Ordering chart

Standard variant 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 variant).
- Other rotation times and rotation angles on request

Torque	Double square	Reducing sleeve double square	Interface according to ISO 5211	90° rotation time	Power consump-tion	Voltage/frequency	Article no.
[Nm]	[mm]	[mm]		[s]	[W]	[V/Hz]	
25	17	17/11	F05/F07	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 1.)	181309
45		17/14	F05/F07	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 1.)	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 1.)	181313
100	22	22/17	F07/F10	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 1.)	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 1.)	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 1.)	181319

1.) The operating voltage must not drop below 11.5 V.

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Control variant with 4...20 mA, 0...20 mA or 0...10 V programmable analogue signal input and 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 variant).
- Other regulating times and delay angles on request

Torque	Double square	Reducing sleeve double square	Interface according to ISO 5211	90° rotation time	Power consumption	Voltage/frequency	Article no.
[Nm]	[mm]	[mm]		[s]	[W]	[V/Hz]	
25	17	17/11	F05/F07	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 [1)]	182326
45		17/14	F05/F07	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 [1)]	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 [1)]	182384
100	22	22/17	F07/F10	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 [1)]	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 [1)]	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 [1)]	182394

1.) The operating voltage must not drop below 11.5 V.

Other variants on request	
	Voltage Other voltages

7.4. Ordering chart accessories

Reducing sleeves

Description	Article no.
Reducing sleeve double square/square14/9 mm	665288
Reducing sleeve double square/square 14/11 mm	665289
Reducing sleeve square/square 17/14 mm	665290
Reducing sleeve double square/square 17/14 mm	773348
Reducing sleeve double square/square 17/11 mm	773343
Reducing sleeve square/square 22/19 mm	773836
Reducing sleeve double square/square 22/17 mm	684858
Reducing sleeve double square/double square 22/14 mm	666684
Reducing sleeve double square/square 22/11 mm	773344
Reducing sleeve double square/square 27/22 mm	774594
Reducing sleeve square/square 27/19 mm	774279
Reducing sleeve square/square 27/17 mm	774193

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Spare battery for actuators with electronic emergency reset

Note:

- The battery must be replaced after max. 500 charging cycles or after 2 years at the latest, depending on which condition is reached earlier.
- Additional information for Type 3004: The person who changes the battery must be trained and qualified to do modifications on ATEX products.
- Actuators that do not have an electronic emergency reset when delivered cannot be upgraded with this device at a later date.

Spare battery for actuator models of the BB40 variant

Type	Variant	Torque [Nm]	Article no.
3003	BB40	10...100	775335
3004/5	BB40	25...300	774761
3004/5	BB40	600...2400	775337

Spare battery for older actuator models of the BB31/BB33/GS2 variants

Note:
For older actuators of variants BB31, BB33, and GS2, both the battery and the electronic card of the fail-safe module must be replaced.
The article numbers listed below include both components (battery and electronic card).
Once the electronic card of the aforementioned BB31, BB33 or GS2 variants has been replaced, the BB40 battery variant can be used for all subsequent replacements.

Type	Variant	Torque [Nm]	Double square [mm]	ISO 5211 interface	Article no.
3003	BB31/BB33/GS2	10...35	14	F03/05	775680
3003	BB31/BB33/GS2	35...100	22	F05/07	775681
3004/5	BB31/BB33/GS2	25...300	-	-	775682

Other accessories

Description	Article no.
Key for adjusting the limit switches	679946

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