Electric Rotary Actuator - On/Off and Control

- Direct mounting on quarter-turn valves
- Manual override standard
- Corrosion resistant
- Adjustable limit switches
- Multi-voltage version

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

Can be combined with

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

Type 2651 ▸
2/2-way or 3/2-way ball valve, 2-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 3005 is a compact and powerful 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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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	Nylon
Body	Epoxy-coated aluminium
Axis	Stainless steel
Screws	Stainless steel
Gear	Zinc-plated steel
Weight	
Motor 25, 45, 75 Nm	3.5 kg
Motor 100, 150, 300 Nm	5.5 kg
Manual override	
Motor 25, 45, 75 Nm	Uncoupling by gearbox-coupled rotary knob
Motor 100, 150, 300 Nm	Via handwheel
Mechanical travel stops	Standard
Position indicator	Standard
Performance data	
Torque	25...300 Nm (600, 1000, 1500, 2400 Nm on request) Further information can be found in chapter "7.3. Ordering chart" on page 10.
Rotation angle	90° (± 5°) (special angle on request)
Rotation time (90°)	7...60 s Further information can be found in chapter "7.3. Ordering chart" on page 10.
Options	• Rotation angle 180° or 270° • 3-position actuator (180°) • Position feedback of the On/Off actuator variant via: – Potentiometer (100, 1000, 5000, 10000 Ω) – Analogue signal 4...20 mA • Fail-safe option • Auxiliary limit switches
Electrical data	
Operating voltage	15...30 V AC, 50...60 Hz, 12...48 V DC 100...240 V AC, 50...60 Hz, 100...350 V DC
Limit switches	4 adjustable (2 for the motor and 2 additional for feedback), max. 250 V AC/5 A
Power consumption	45 W
Voltage tolerance	± 10 %
Linear actuator with analogue input and analogue output signal	
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 included
Motor 45, 75 Nm	Double square 17 mm, reducing sleeve double square 17/14 mm included
Motor 100, 150, 300 Nm	Double square 22 mm, reducing sleeve double square 22/17 mm included
Approvals and conformities	
Degree of protection	IP68 if mounted with cable plug
North America (USA/Canada)	Further information can be found in chapter "2.4. North America (USA/Canada)" on page 4.

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Ambient temperature	
For actuator Type 3005 Standard	- 20 °C...+ 70 °C
For actuator Type 3005 with electronic emergency reset	- 20 °C...+ 40 °C
Environment and installation	
Installation position	Do not install the actuator upside down, maximum installation angle: 90°.
Installation site	Up to max. 2000 m altitude

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

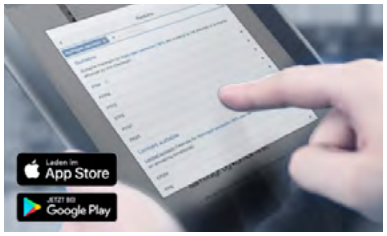
The applied standards which are used to demonstrate compliance with the EU Directives are listed in the EU-Type Examination Certificate and/or the EU Declaration of Conformity.

2.4. North America (USA/Canada)

Approval	Description
C US	**Optional: CSA for Canada and the USA** The products are CSA-approved for Canada and the USA according to: • CAN/CSA-C22.2 No. 139 - Electrically operated valves • UL 429 - Electrically operated valves

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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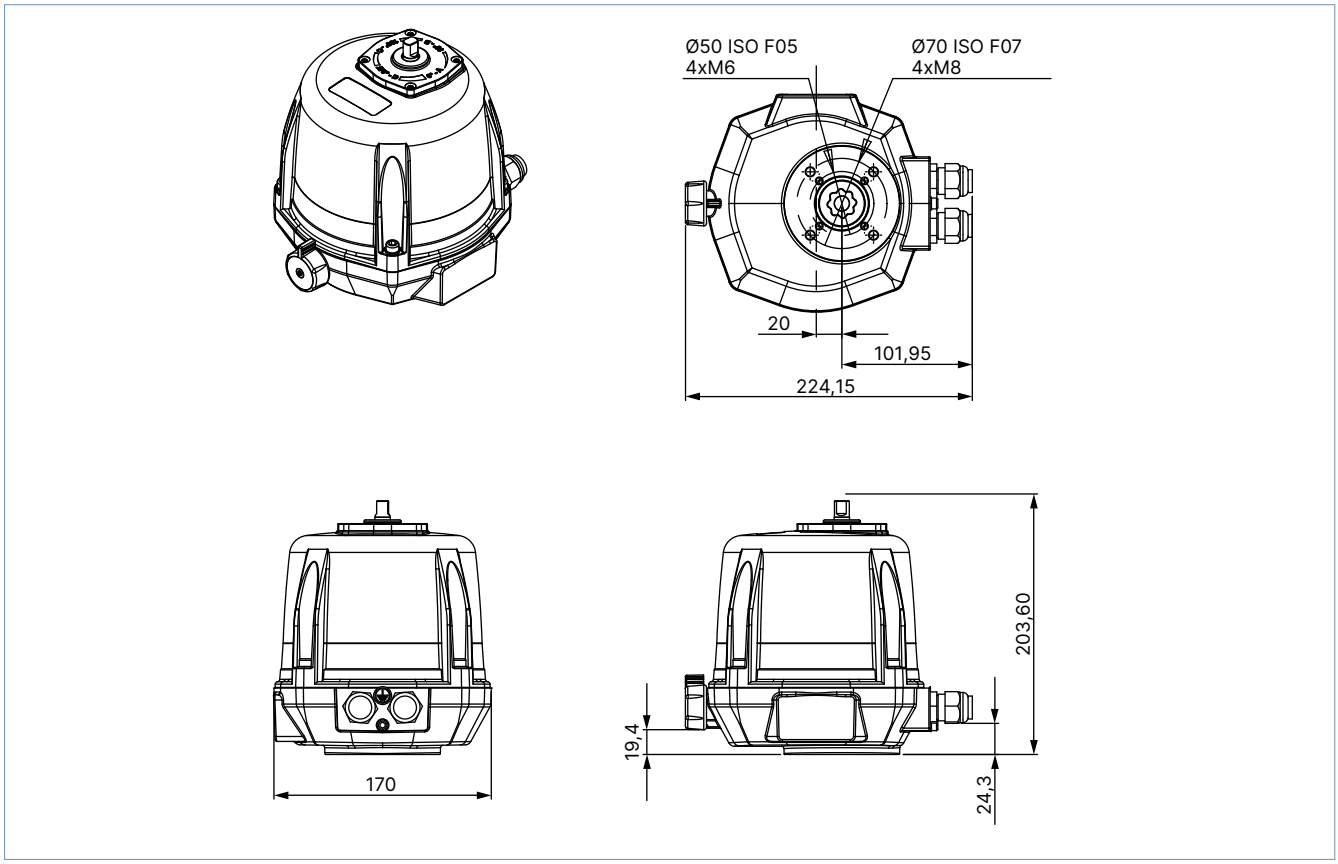
4. Dimensions

4.1. Motor 25, 45, 75 Nm

Note:
Dimensions in mm



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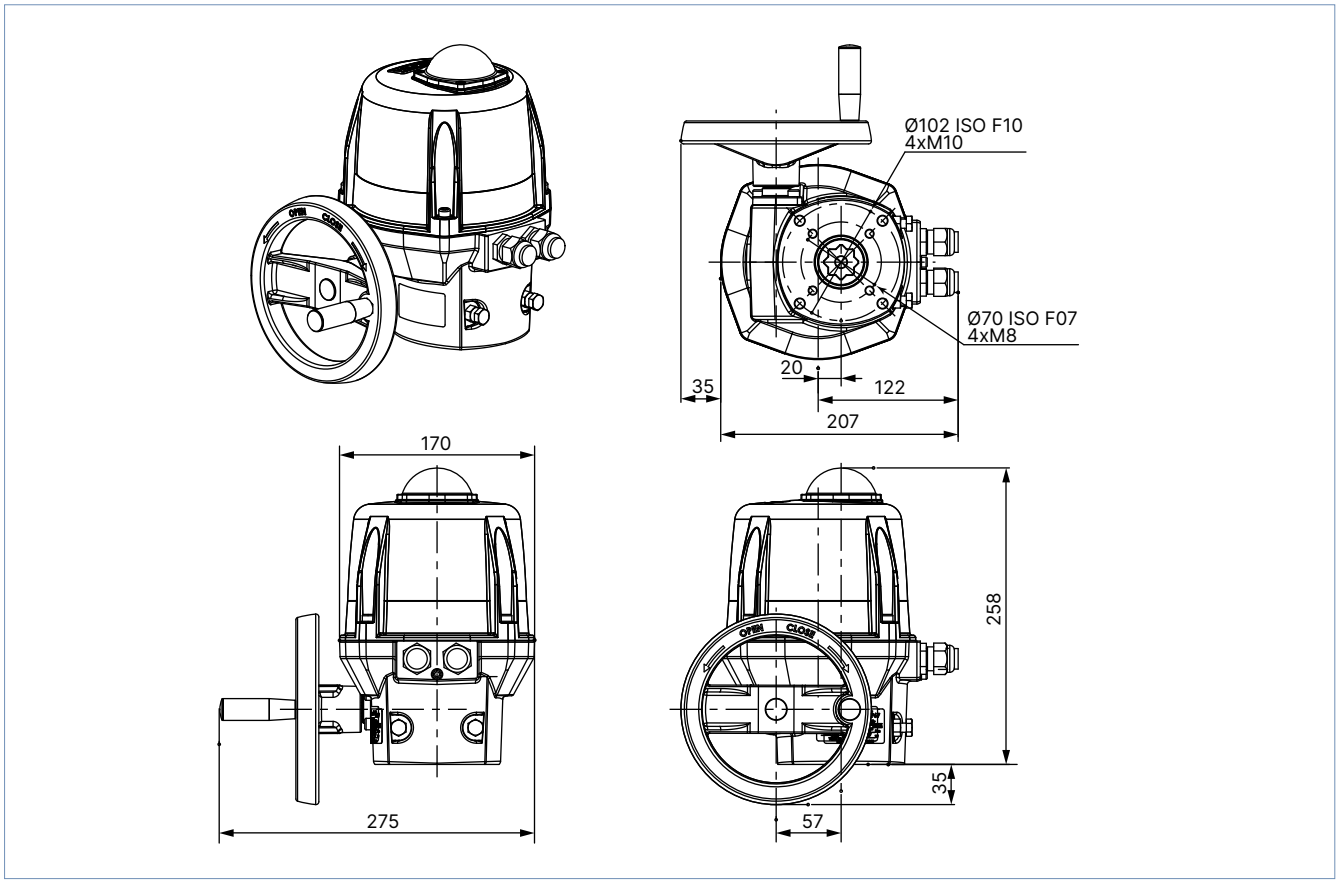
4.2. Motor 100 , 150, 300 Nm

Note:
Dimensions in mm



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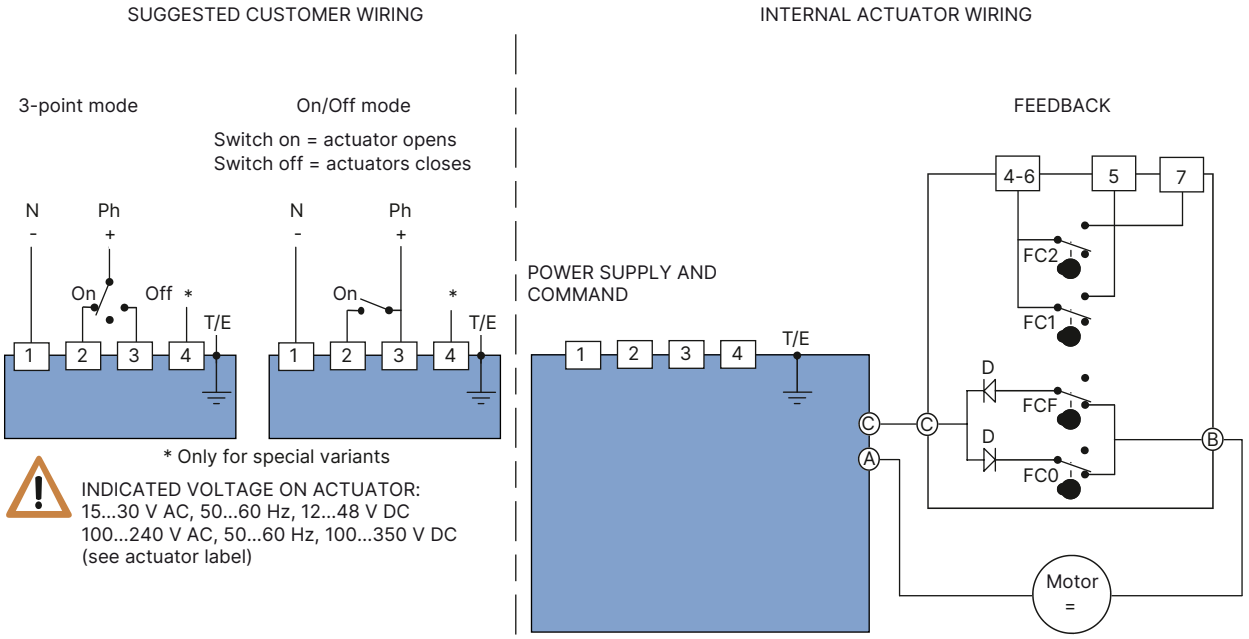
5. Product connections

5.1. Electrical connections

Standard actuators for use in On/Off mode and 3-point mode



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

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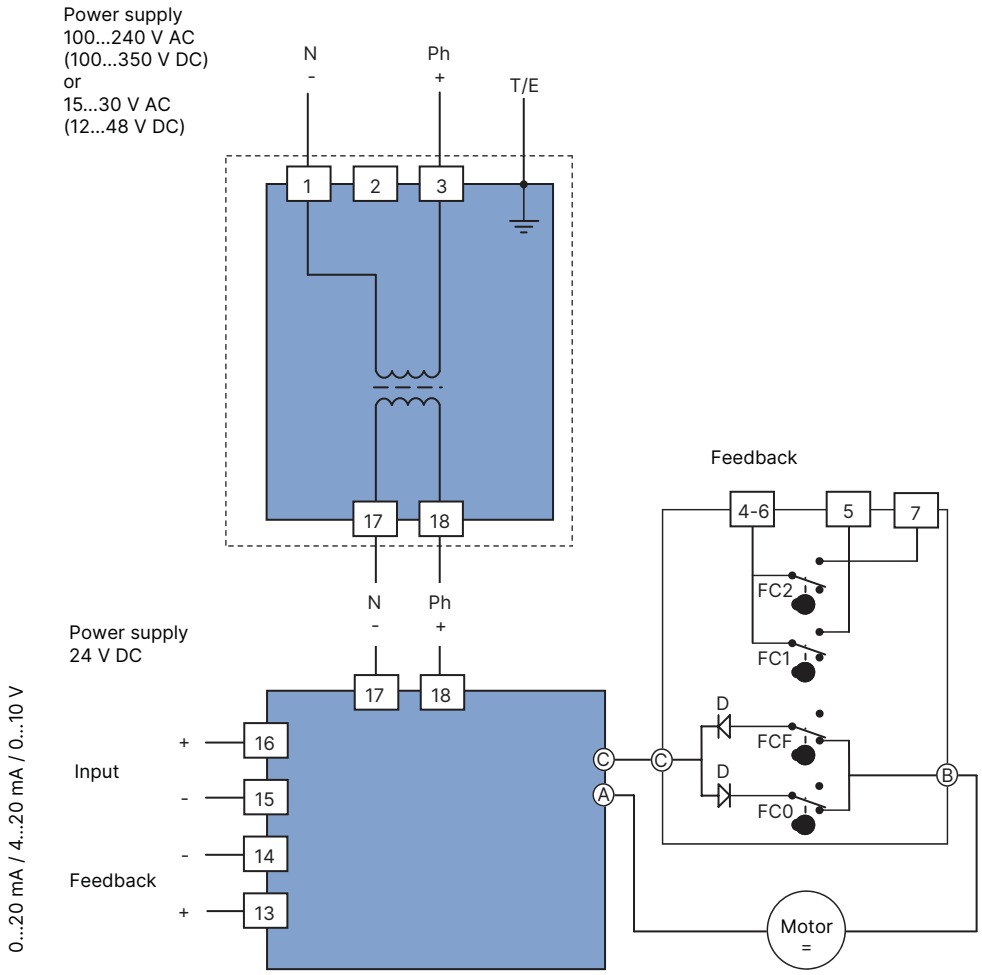
Control variant with 4...20 mA, 0...20 mA or 0...10 V programmable analogue signal input and output



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

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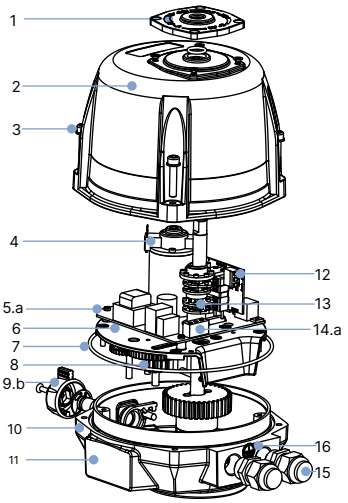
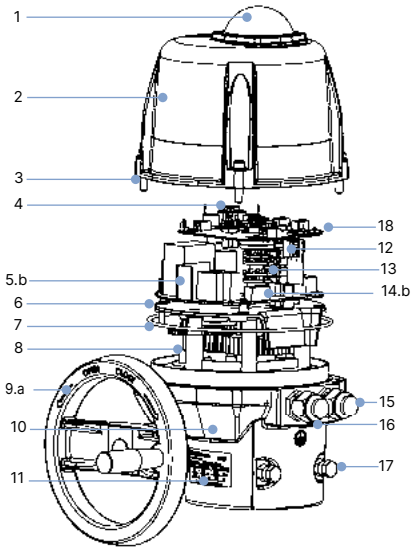
6. Product design and assembly

6.1. Product assembly

Motor 25, 45, 75 Nm



Motor 100, 150, 300 Nm



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

1.) Only for multi-voltage variant

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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

On/Off variant

Torque [1.)]	Double square	Reducing sleeve double square	Interface according to ISO 5211	90° rotation time [2.)]	Power consumption	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	207170
						15...30 V AC, 50...60 Hz, 12...48 V DC	180864
45		17/14	F05/F07	15	45	100...240 V AC, 50...60 Hz, 100...350 V DC	189194
						15...30 V AC, 50...60 Hz, 12...48 V DC	189199
75				20	45	100...240 V AC, 50...60 Hz, 100...350 V DC	203454
						15...30 V AC, 50...60 Hz, 12...48 V DC	216012
100	22	22/17	F07/F10	15	45	100...240 V AC, 50...60 Hz, 100...350 V DC	205547
						15...30 V AC, 50...60 Hz, 12...48 V DC	224608
150				30	45	100...240 V AC, 50...60 Hz, 100...350 V DC	181303
						15...30 V AC, 50...60 Hz, 12...48 V DC	181304
300				60	45	100...240 V AC, 50...60 Hz, 100...350 V DC	181305
						15...30 V AC, 50...60 Hz, 12...48 V DC	181306

1.) For the actuator choice, we recommend a safety torque equal to 1.5 times of the valve maximal torque.
2.) Other rotation angels are available on request.

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

Torque [1.]	Double suqare	Reducing sleeve double square	Interface according to ISO 5211	90° rotation time [2.]	Power consump-tion	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	189193
						15...30 V AC, 50...60 Hz, 12...48 V DC	215669
45		17/14	F05/F07	15	45	100...240 V AC, 50...60 Hz, 100...350 V DC	289888
						15...30 V AC, 50...60 Hz, 12...48 V DC	215670
75				20	45	100...240 V AC, 50...60 Hz, 100...350 V DC	306174
						15...30 V AC, 50...60 Hz, 12...48 V DC	226373
100	22	22/17	F07/F10	15	45	100...240 V AC, 50...60 Hz, 100...350 V DC	274519
						15...30 V AC, 50...60 Hz, 12...48 V DC	274606
150				30	45	100...240 V AC, 50...60 Hz, 100...350 V DC	181293
						15...30 V AC, 50...60 Hz, 12...48 V DC	228177
300				60	45	100...240 V AC, 50...60 Hz, 100...350 V DC	181307
						15...30 V AC, 50...60 Hz, 12...48 V DC	179726

1.) For the actuator choice, we recommend a safety torque equal to 1.5 times of the valve maximal torque.
2.) Other rotation angels are available on request.

On/Off variant with emergency reset via integrated battery: fail-to-close/open adjustable

Torque [1.]	Double suqare	Reducing sleeve double square	Interface according to ISO 5211	90° rotation time [2.]	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	377030
						15...30 V AC, 50...60 Hz, 12...48 V DC	377029
45		17/14	F05/F07	15	45	100...240 V AC, 50...60 Hz, 100...350 V DC	377032
						15...30 V AC, 50...60 Hz, 12...48 V DC	377031
75				20	45	100...240 V AC, 50...60 Hz, 100...350 V DC	377034
						15...30 V AC, 50...60 Hz, 12...48 V DC	377033
100	22	22/17	F07/F10	15	45	100...240 V AC, 50...60 Hz, 100...350 V DC	377037
						15...30 V AC, 50...60 Hz, 12...48 V DC	377036
150				30	45	100...240 V AC, 50...60 Hz, 100...350 V DC	377039
						15...30 V AC, 50...60 Hz, 12...48 V DC	377038
300				60	45	100...240 V AC, 50...60 Hz, 100...350 V DC	377042
						15...30 V AC, 50...60 Hz, 12...48 V DC	377040

1.) For the actuator choice, we recommend a safety torque equal to 1.5 times of the valve maximal torque.
2.) Other rotation angels are available on request.

Other variants on request

Voltage
Other supply voltage

7.4. Ordering chart accessories

Reducing sleeves

Description	Article no.
Reducing sleeve double square/square 14/9 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

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Description	Article no.
Reducing sleeve square/square 22/19 mm	773836
Reducing sleeve double square/square 22/17 mm	684858
Reducing sleeve square/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

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 without 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	Double square	ISO 5211 interface	Article no.
		[Nm]	[mm]		
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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