

RetroFIT+ rotary actuator for rotary valves and butterfly valves

- Torque motor 20 Nm
- Nominal voltage AC 24...240 V / DC 24...125 V
- Control Open/close
- With 2 integrated auxiliary switches



Picture may differ from product

Technical data

| Electrical data | |
|--|---|
| Nominal voltage | AC 24...240 V / DC 24...125 V |
| Nominal voltage frequency | 50/60 Hz |
| Nominal voltage range | AC 19.2...264 V / DC 21.6...137.5 V |
| Power consumption in operation | 7 W |
| Power consumption in rest position | 3.5 W |
| Power consumption for wire sizing | 18 VA |
| Auxiliary switch | 2x SPDT, 1x 10% / 1x 11...100% |
| Switching capacity auxiliary switch | 1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V |
| Connection supply / control | Cable 1 m, 2x 0.75 mm ² |
| Connection auxiliary switch | Cable 1 m, 6x 0.75 mm ² |
| Parallel operation | Yes (note the performance data) |
| Functional data | |
| Torque motor | 20 Nm |
| Torque fail-safe | 20 Nm |
| Direction of motion fail-safe | selectable: Deenergised NC, valve closed (A - AB = 0%) Deenergised NO, valve open (A - AB = 100%) |
| Manual override | by means of hand crank and locking switch |
| Running time motor | 75 s / 90° |
| Running time fail-safe | <20 s @ -20...50°C, <60 s @ -30°C |
| Sound power level, motor | 45 dB(A) |
| Position indication | Mechanical |
| Service life | Min. 60'000 fail-safe positions |
| Safety data | |
| Protection class IEC/EN | II, reinforced insulation |
| Protection class UL | II, reinforced insulation |
| Protection class auxiliary switch IEC/EN | II, reinforced insulation |
| Degree of protection IEC/EN | IP54 |
| Degree of protection NEMA/UL | NEMA 2 |
| Housing | UL Enclosure Type 2 |
| EMC | CE according to 2014/30/EU |
| Low voltage directive | CE according to 2014/35/EU |
| Certification IEC/EN | IEC/EN 60730-1 and IEC/EN 60730-2-14 |

Safety data

UL Approval
cULus according to UL60730-1A, UL60730-2-14 and CAN/CSA E60730-1
The UL marking on the actuator depends on the production site, the device is UL-compliant in any case

| | |
|--|-----------------------------|
| Type of action | Type 1.AA.B |
| Rated impulse voltage supply / control | 4 kV |
| Rated impulse voltage auxiliary switch | 2.5 kV |
| Pollution degree | 3 |
| Ambient humidity | Max. 95% RH, non-condensing |
| Ambient temperature | 0...50°C [32...122°F] |
| Storage temperature | -40...80°C [-40...176°F] |
| Servicing | maintenance-free |

Mechanical data

Connection flange F03/F04/F05

Weight

Weight 2.3 kg

Safety notes


- This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Outdoor application: only possible in case that no (sea) water, snow, ice, insolation or aggressive gases interfere directly with the device and that it is ensured that the ambient conditions remain within the thresholds according to the data sheet at any time.
- Caution: Mains voltage!
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The device may only be opened at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- Cables must not be removed from the device.
- The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- The two switches integrated in the actuator are to be operated either on mains voltage or on safety extra-low voltage. The combination mains voltage/safety extra-low voltage is not permitted.

Product features
Operating mode

The actuator is equipped with a universal power supply module that can utilise supply voltages of AC 24...240 V and DC 24...125V.

The actuator moves the valve to the operating position at the same time as tensioning the return spring. The valve is turned back to the fail-safe position by spring force when the supply voltage is interrupted.

Application

For rotary valves and butterfly valves with the following mechanical specifications:

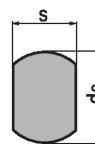
- ISO 5211: F03, F04, F05 (hole circle diameter on the flange for mounting the fitting)
- ISO 5211: quadratic, flat head or wedge-shaped spindle head geometry

Product features

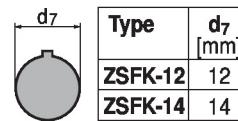
Tappet shaft The form fit adapter is not included in the scope of delivery (see «Accessories»).

ZSFV-..

| Type | s [mm] |
|---------|-----------|
| ZSFV-08 | 8 |
| ZSFV-09 | 9 |
| ZSFV-10 | 10 |
| ZSFV-11 | 11 |
| ZSFV-12 | 12 |
| ZSFV-14 | 14 |

ZSFF-..

| Type | s [mm] | d8 [mm] |
|---------|-----------|------------|
| ZSFF-08 | 8 | 17 |
| ZSFF-09 | 9 | 12 |
| ZSFF-10 | 10 | 17 |
| ZSFF-11 | 11 | 14 |
| ZSFF-14 | 14 | 18 |

ZSFK-..

| Type | d7 [mm] |
|---------|------------|
| ZSFK-12 | 12 |
| ZSFK-14 | 14 |

Simple direct mounting Simple direct mounting on the rotary valve or butterfly valve with mounting flange. The mounting orientation in relation to the fitting can be selected in 90° steps.

Manual override By using the hand crank the valve can be operated manually and engaged with the locking switch at any position. Unlocking is carried out manually or automatically by applying the operating voltage.

Adjustable angle of rotation Adjustable angle of rotation with mechanical end stops.

High functional reliability The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.

Flexible signalling The actuator has one auxiliary switch with a fixed setting and one adjustable auxiliary switch. They permit a 10% or 11...100% angle of rotation to be signaled.

Accessories

| Mechanical accessories | Description | Type |
|---|-------------|------|
| Form fit adapter square 8x8x55 mm (LxWxH) | ZSFV-08 | |
| Form fit adapter square 9x9x55 mm (LxWxH) | ZSFV-09 | |
| Form fit adapter square 10x10x55 mm (LxWxH) | ZSFV-10 | |
| Form fit adapter square 11x11x55 mm (LxWxH) | ZSFV-11 | |
| Form fit adapter square 12x12x55 mm (LxWxH) | ZSFV-12 | |
| Form fit adapter square 14x14x55 mm (LxWxH) | ZSFV-14 | |
| Form fit adapter flat head 8xØ17x55 mm (WxØxH) | ZSFF-08 | |
| Form fit adapter flat head 9xØ12x55 mm (WxØxH) | ZSFF-09 | |
| Form fit adapter flat head 10xØ17x55 mm (WxØxH) | ZSFF-10 | |
| Form fit adapter flat head 11xØ14x55 mm (WxØxH) | ZSFF-11 | |
| Form fit adapter flat head 14xØ18x55 mm (WxØxH) | ZSFF-14 | |
| Form fit adapter wedge groove Ø12x4x55 mm (ØxWxH) | ZSFK-12 | |
| Form fit adapter wedge groove Ø14x5x55 mm (ØxWxH) | ZSFK-14 | |

Electrical installation



Caution: Mains voltage!

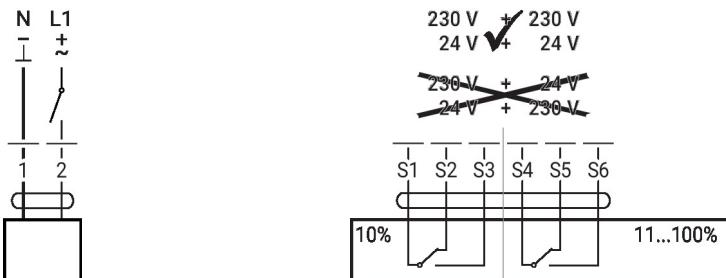
Parallel connection of other actuators possible. Observe the performance data.

Wire colours:

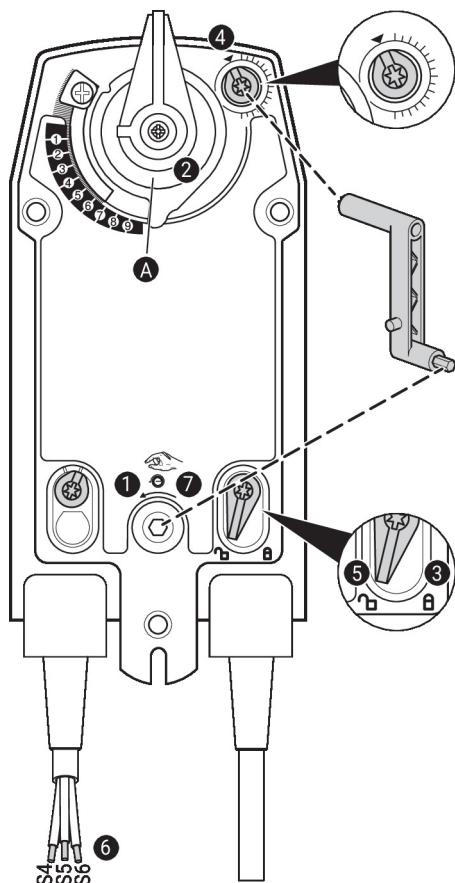
- 1 = blue
- 2 = brown
- S1 = violet
- S2 = red
- S3 = white
- S4 = orange
- S5 = pink
- S6 = grey

Electrical installation

AC 24...240 V / DC 24...125 V, open/ close
Auxiliary switch



Operating controls and indicators



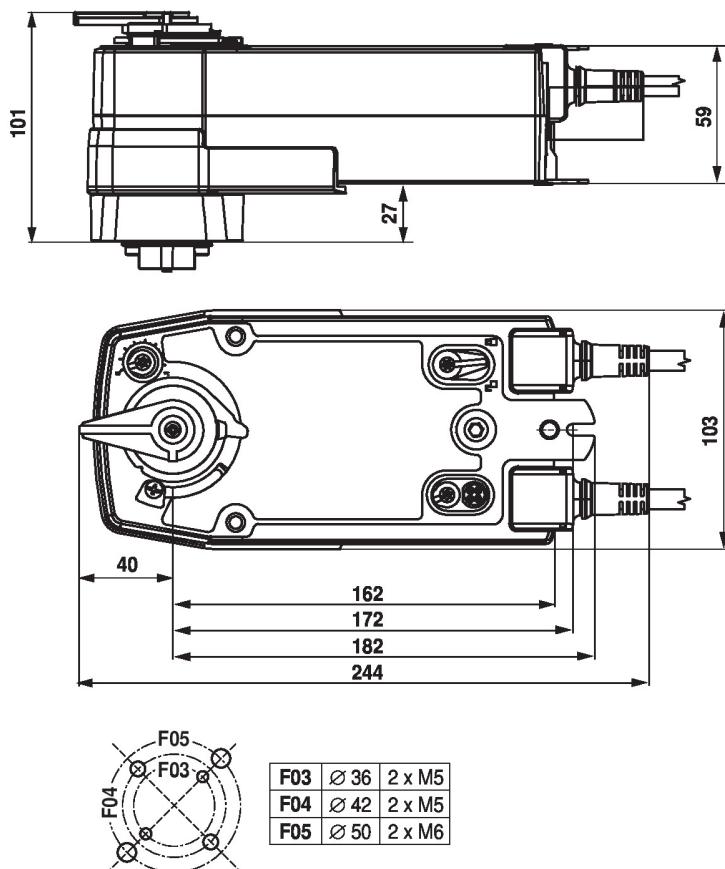
Auxiliary switch settings

Note: Perform settings on the actuator only in deenergised state.

For the auxiliary switch position settings, carry out points 1 to 7 successively.

- 1 **Manual override**
Turn the hand crank until the desired switching position is set.
- 2 **Shaft clamp**
Edge line A displays the desired switching position of the actuator on the scale.
- 3 **Fasten the locking device**
Turn the locking switch to the „Locked padlock“ symbol.
- 4 **Auxiliary switch**
Turn rotary knob until the notch points to the arrow symbol.
- 5 **Unlock the locking device**
Turn the locking switch to the „Unlocked padlock“ symbol or unlock with the hand crank.
- 6 **Cable**
Connect continuity tester to S4 + S5 or to S4 + S6.
- 7 **Manual override**
Turn the hand crank until the desired switching position is set and check whether the continuity tester shows the switching point.

Dimensions



Further documentation

- General notes for project planning