

Spring-return actuator for VRD3 controller for fire and smoke dampers 90° in ventilation and air-conditioning systems

- Nominal torque 18 Nm / 12 Nm
- Nominal voltage AC/DC 24 V
- Control modulating
- Damper rotation form fit 12 mm (10 mm with enclosed adapter)


Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2 V ... 28.8 V / DC 21.6 V ... 28.8 V
	Power consumption in operation	7 W
	Power consumption at rest	2 W
	Power consumption for wire sizing	10 VA
	Power consumption for wire sizing note	I _{max} 8.3 A @ 5 ms
	Auxiliary switch	2 x SPDT
	Switching capacity auxiliary switch	Contact gold-plated silver: 1 mA ... 3 (0.5) A, DC 5 V ... AC 250 V (II Totally insulated)
	Switching points auxiliary switch	5° / 80°
	Connection supply / control	Cable 0.5 m, 3 x 0.75 mm ² (halogen-free)
	Connection auxiliary switch	Cable 1 m, 6 x 0.75 mm ² (halogen-free)
	Connection plug	Supply / controller: 3-pole plug, suitable for VRD3 controller
	Cable length thermoelectric tripping device	1 m
Functional data	Torque motor	Min. 18 Nm
	Torque spring-return	Min. 12 Nm
	Control signal X	DC 6 V ± 4 V
	Control signal Y note	From VRD3 controller
	Direction of rotation motor	Can be selected with switch L / R
	Angle of rotation	Max. 95°
	Running time motor	120 ... 300 s / 90°
	Running time spring-return	16 s (tamb = 20°C)
	Sound power level motor max.	45 dB (A)
	Sound power level spring-return max.	63 dB (A)
Safety	Damper rotation	Form fit 12 mm (10 mm with enclosed adapter)
	Position indication	Mechanically, with pointer
	Service life	Min. 60,000 safety positions
	Response temperature thermal fuse	Tf1: Duct outside temperature 72°C Tf2 and Tf3: Duct inside temperature 72°C
	Protection class IEC/EN	III Safety extra-low voltage
	Degree of protection IEC/EN	IP54 in all mounting positions
	EMC	CE according to 2014/30/EU
	Low-voltage directive	CE according to 2014/35/EU
	Certification IEC/EN	Certified according to IEC/EN 60730-1 and IEC/EN 60730-2-14
	Mode of operation	Type 1.AA.B
	Rated impulse voltage supply / control	0.8 kV
Control pollution degree	3	
Ambient temperature normal duty	-30°C ... 50°C	
Ambient temperature safety duty	The safety position will be attained up to max. 75°C	
Non-operating temperature	-40°C ... 50°C	
Ambient humidity	95% r.h., non-condensing	

Technical data

Safety	Maintenance	Maintenance-free
Weight	Weight approx.	2.8 kg

Safety notes



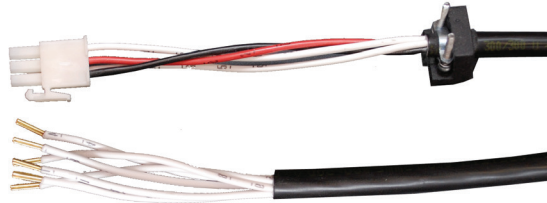
- The device must not be used outside the specified field of application, especially not in aircraft or in any other airborne means of transport.
- The actuator is adapted and installed on the fire and smoke damper by the damper manufacturer. For this reason, the actuator is only supplied directly to safety damper manufacturers. The manufacturer then bears full responsibility for the proper functioning of the damper.
- The two switches integrated in the actuator are to be operated either on power supply voltage or at safety extra-low voltage. The combination power supply voltage/safety extra-low voltage is not permitted.
- 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.
- 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.

Product features

Thermoelectric tripping device	<p>If the ambient temperature of 72°C is exceeded, the thermal fuse Tf1 responds. If the duct inside temperature of 72°C is exceeded, the exchangeable thermal fuse Tf2/Tf3 will respond.</p> <p>When the thermal fuses Tf1, Tf2 or Tf3 respond, the supply voltage is interrupted permanently and irreversibly.</p> <p>The LED is lit when</p> <ul style="list-style-type: none"> – there is a supply voltage – the temperature fuses are OK and – the test switch is not pressed. <p>The function of the thermal fuse and the test button is only warranted if the actuator is connected to the power supply and has reached its operating position (LED on).</p>
Signalling	<p>Two microswitches with fixed settings are installed in the actuator for indicating the damper end positions.</p> <p>The position of the damper blade can be read off on a mechanical position indicator.</p>
Manual operation	<p>Without power supply, the damper can be operated manually and fixed in any required position. It can be unlocked manually or automatically by applying the supply voltage.</p>
Standards / Regulations	<p>The design of the actuator is based on the specific requirements from the European standards:</p> <ul style="list-style-type: none"> - EN 15650 Ventilation for buildings – Fire dampers - EN 1366-2 Fire resistance tests on service installations (Part 2: Fire dampers) - EN 13501-3 Fire classification of construction products and building elements (Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire resisting ducts and fire dampers)
Recommendation for application	<p>Regular operational checks (open-close control of the fire damper) enhance the safety of people, animals, property and the environment. Unless other requirements are stipulated – e. g. in the damper manufacturer's operating instructions – Belimo recommends the performance of monthly operational checks. Fire damper actuators from Belimo are designed in accordance with service life specifications contained in the technical data sheet for regular operational checks. Notes for regular operational checks can be found in the European Product Standard for Fire Dampers (EN 15650) under «Maintenance information».</p>

Product features

Connecting The actuator is equipped with a connector on the motor connecting cable for direct connection to the VRD controller. The connecting cable for the auxiliary switches is provided without a connector.



Accessories

	Description	Data sheet name
Electrical accessories	Auxiliary switch 2 x SPDT	SN2-C7
	Blanking cover for BAE (without thermal fuse for duct inside temperature)	ZBAE0
	Spare tripping element for BAE, duct inside temperature = 72 °C, sensor length = 65 mm	ZBAE72
	Spare tripping element for BAE, duct inside temperature = 95 °C, sensor length = 65 mm	ZBAE95
Mechanical accessories	Adapter with clamp for round spindle 10...20 mm / square 10...16 mm for BF	ZK-BF
	Adapter for form fit 12 mm with round spindle 18 mm, L = 33 mm for BF	ZA18-BF
	Adapter 12/8 mm for BF.. and BLF..	ZA8-BF
	Adapter 12/11 mm for BF.. and BLF..	ZA11-BF
	Bracket for auxiliary switch (SN2-C7) for BF, BR	ZSN-BF

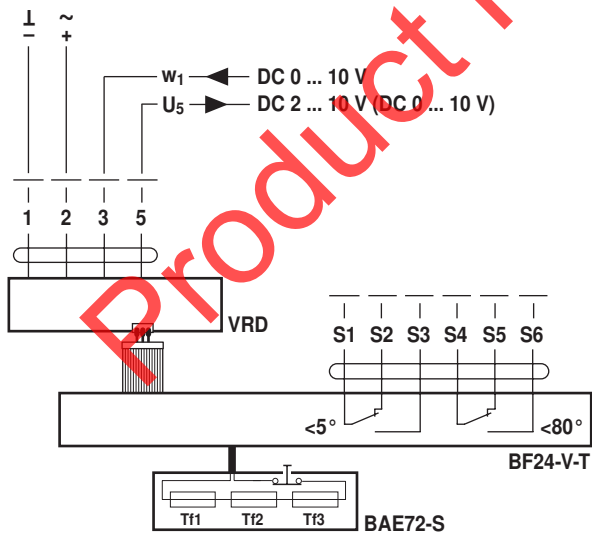
Electrical installation



Notes • Connection via safety isolating transformer.

Wiring diagrams

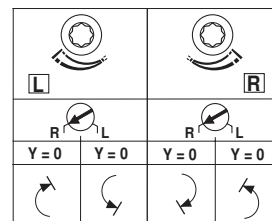
AC/DC 24 V, modulating



Cable colours:

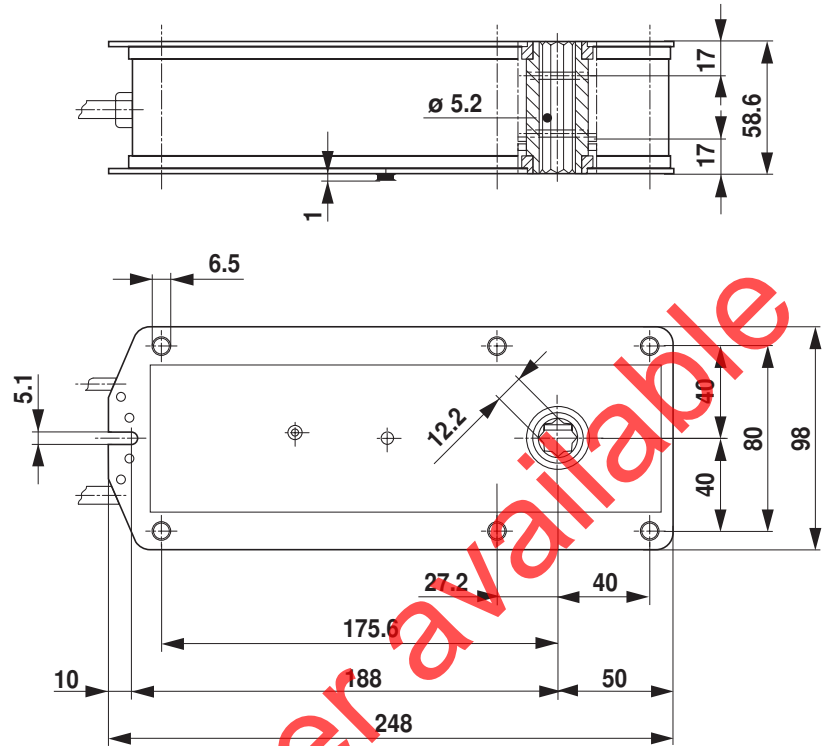
- S1 = white
- S2 = white
- S3 = white
- S4 = white
- S5 = white
- S6 = white

Direction of rotation



Dimensions [mm]

Dimensional drawings



Product no longer available