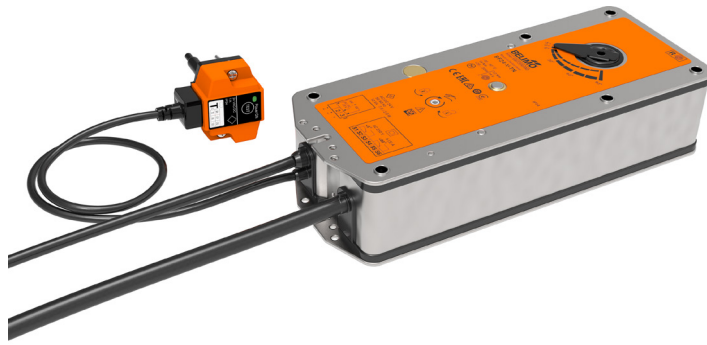


Spring-return actuator for VRD3 controller, combined with thermoelectric tripping device BAT (72 °C), for fire and smoke dampers 90° in ventilation and air-conditioning systems

- Torque 18 Nm / 12 Nm
- Nominal voltage AC/DC 24 V
- Control modulating
- Mechanical interface Form fit 12x12 mm, Non-continuous hollow shaft


Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	7 W
	Power consumption in rest position	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	1 mA...6 (3) A, DC 5 V...AC 250 V (II reinforced insulation)
	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	18 Nm
	Torque spring return	12 Nm
	Operating range Y	DC 6 ±4 V
	Control operating range Y note	from VRD3 controller
	direction of rotation motor	Can be selected by mounting L/R
	Manual override	with position stop
	Angle of rotation	Max. 95°
	Running time motor	120...300 s / 90°
	Running time spring-return	16 s (t _{amb} = 20 °C)
	Sound power level, motor	45 dB(A)
	Sound power level, spring-return	63 dB(A)
	Mechanical interface	Form fit 12x12 mm, Non-continuous hollow shaft
	Position indication	Mechanically, with pointer
Service life	Min. 60'000 safety positions	
Safety	Response temperature thermal fuse	Duct outside temperature 72 °C Duct inside temperature 72 °C
	Protection class IEC/EN	III Safety Extra-Low Voltage (SELV)
	Protection class auxiliary switch IEC/EN	II reinforced insulation
	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	IEC/EN 60730-1 and IEC/EN 60730-2-14
	Mode of operation	Type 1.AA.B
	Rated impulse voltage supply	0.8 kV
	Control pollution degree	3
	Ambient temperature normal operation	-30...50 °C
	Ambient temperature safety operation	The safety position will be attained up to max. 75 °C
	Non-operating temperature	-40...50 °C
	Ambient humidity	Max. 95% r.h., non-condensing
	Maintenance	Maintenance-free
Weight	Weight	2.8 kg

Safety notes



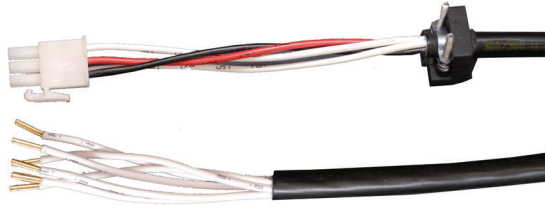
- The device must not be used outside the specified field of application, especially not in aircraft or in any other airborne means of transport.
- The actuator is adapted and installed on the fire and smoke damper by the damper manufacturer. For this reason, the actuator is only supplied directly to 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>Complies with the specific requirements of the standard ISO 10294-4. BAT: If the ambient temperature of 72°C is exceeded, then the duct outside temperature fuse will respond. If the duct inside temperature of 72°C is exceeded, then the duct inside temperature fuse will respond. When one of the thermal fuses responds, the supply voltage is interrupted permanently and irreversibly. The LED is on when</p> <ul style="list-style-type: none"> - supply voltage is available - the thermal fuses are OK and - the test switch is not pressed. <p>Note: The function of the thermal fuses and the control key is only warranted if the actuator is connected to the supply voltage (LED on).</p>
Signalling	<p>Two microswitches with fixed settings are installed in the actuator for indicating the damper end positions. The electrical contacts of these microswitches are equipped with a gold/silver coating that permits integration both in circuits with low currents (mA range) and in ones with larger-sized currents (A range) in accordance with the specifications in the data sheet. It should be noted with this application however that the contacts can no longer be used in the milliampere range after larger currents have been applied to them, even if this has taken place only once. The position of the damper blade can be read off on a mechanical position indication.</p>
Manual operation	<p>Without power supply, the actuator 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

Connection The motor connection cable of the actuator is equipped with a plug for the direct connection to the VRD controller. The connection cable for the auxiliary switch has no plug.



Delivery notes Incl. Hand crank, Pointer, Protective bag, Form fit insert 12/10 mm

Accessories

	Description	Type
Electrical accessories	Auxiliary switch 2 x SPDT	SN2-C7
	Blanking cover for BAT (without thermal fuse for duct inside temperature)	ZBAT0
	Spare tripping element for BAT, duct inside temperature = 72 °C, probe ZBAT72 length = 65 mm	
	Spare tripping element for BAT, duct inside temperature = 72 °C, probe ZBAT72/9 length = 90 mm	
	Spare tripping element for BAT, duct inside temperature = 95 °C, probe ZBAT95 length = 65 mm	
	Spare tripping element for BAT, duct inside temperature = 95 °C, probe ZBAT95/9 length = 90 mm	
	Spare tripping element for BAT, duct inside temperature = 120 °C, probe length = 65 mm	ZBAT120
	Spare tripping element for BAT, duct inside temperature = 140 °C, probe length = 65 mm	ZBAT140
Mechanical accessories	Description	Type
	Pointer 12x12 mm for BLF, BF, BLE, BR	ZZ12-B
	Hand crank 40 mm for BLF, BF, BLE, BE, BR	ZK1-B
	Hand crank 70 mm for BLF, BF, BLE, BE, BR	ZK2-B
	Bracket for auxiliary switch (SN2-C7) for BF, BR	ZSN-BF
	Adapter for form fit 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
	Form fit insert 12/8 mm for BFL, BLF, BFN, BF, BLE, BR	ZA8-B
	Form fit insert 12/10 mm for BFL, BLF, BFN, BF, BLE, BR	ZA10-B
	Form fit insert 12/11 mm for BFL, BLF, BFN, BF, BLE, BR	ZA11-B
Protective bag with wire (100 pcs.)	ZSD-B.1	

Electrical installation



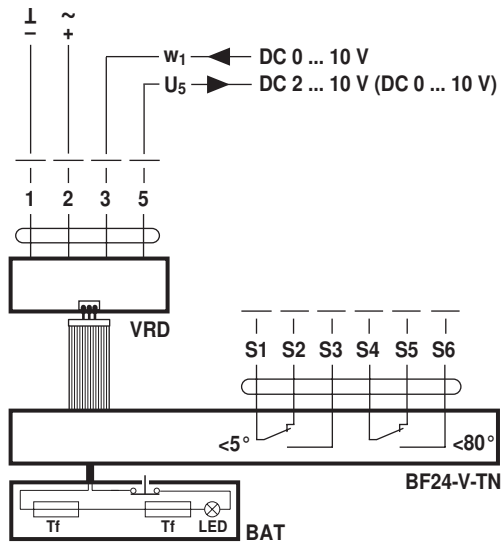
Notes

- Connection via safety isolating transformer.
- Combination of power supply voltage and safety extra-low voltage not permitted at the both auxiliary switches.

Electrical installation

Wiring diagrams

AC/DC 24 V, modulating



Cable colours:

- S1 = violet
- S2 = red
- S3 = white
- S4 = orange
- S5 = pink
- S6 = grey
- Tf: Thermal fuse (see "Technical data")

Dimensions [mm]

Dimensional drawings

