

Modulating spring-return actuator for fire and smoke dampers 90° in ventilation and air-conditioning systems.

- Nominal torque 4 Nm / 4 Nm
- Nominal voltage AC/DC 24 V
- Control modulating
- Damper rotation form fit 12 mm (8 mm and 10 mm with enclosed adapter)



PROTECT LIFE  
FIRE-SAFE SOLUTIONS BY BELIMO

**Technical data**

<b>Electrical data</b>	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	2.5 W
	Power consumption at rest	1 W
	Power consumption for wire sizing	5 VA
	Power consumption for wire sizing note	I <sub>max</sub> 5.8 A @ 5 ms
	Auxiliary switch	1 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°
Connection supply / control	Cable 1 m, 4 x 0.75 mm <sup>2</sup> (halogen-free)	
Connection auxiliary switch	Cable 1 m, 3 x 0.75 mm <sup>2</sup> (halogen-free)	
<b>Functional data</b>	Torque motor	Min. 4 Nm
	Torque spring-return	Min. 4 Nm
	Control signal Y	DC 0 V ... 10 V
	Control signal Y note	Input impedance 100 kΩ (0.1 mA)
	Operating range Y	DC 2 V ... 10 V
	Operating range Y note	For control signal Y
	Position feedback U	DC 2 V ... 10 V
	Position feedback U note	Max. 0.5 mA (for 0 ... 100% angle of rotation)
	Position accuracy	±5%
	Direction of rotation motor	Can be selected by mounting L / R
	Angle of rotation	Max. 95°
	Running time motor	<120 s / 90°
	Running time spring-return	~20 s @ -20 ... 50°C / max. 60 s @ -30°C
	Sound power level motor max.	45 dB (A)
	Sound power level spring-return max.	63 dB (A)
Damper rotation	Form fit 12 mm (8 mm and 10 mm with enclosed adapter)	
Position indication	Mechanically, with pointer	
Service life	Min. 60,000 safety positions	
<b>Safety</b>	Protection class IEC/EN	III Safety extra-low voltage
	Degree of protection IEC/EN	IP54 in all mounting positions
	EMC	CE according to 2004/108/EC
	Low-voltage directive	CE according to 2006/95/EC
	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 when triggered by a thermal fuse
	Non-operating temperature	-40°C ... 80°C
	Ambient humidity	95% r.h., non-condensing
Maintenance	Maintenance-free	

## Technical data

<b>Weight</b>	Weight approx.	1.6 kg
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## Safety notes



- The actuator is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- The actuator is adapted and mounted to the fire and smoke damper by the damper manufacturer. For this reason, the actuator is only supplied direct to safety damper manufacturers. The manufacturer then bears full responsibility for the proper functioning of the damper.
- 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 is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

## Product features

<b>Mode of operation</b>	The actuator is controlled with a standard signal of DC 0 ... 10 V and moves the damper to the operating position while tensioning the return spring at the same time. The damper is turned back to the safety position by spring energy when the supply voltage is interrupted.
<b>Signalling</b>	Two microswitches with fixed settings are installed in the actuator for indicating the damper end positions. The position of the damper blade can be read off on a mechanical position indicator.
<b>Manual operation</b>	The damper can be manually operated and fixed in any position using a hand crank. It can be unlocked manually or automatically by applying the supply voltage. Caution: The hand crank may only be operated when the actuator is de-energised.

## Accessories

	Description	Data sheet name
<b>Electrical accessories</b>	Auxiliary switch, 2 x SPDT, 6 A (2.5 A), AC 250 V	SN2-C7
<b>Mechanical accessories</b>	Adapter with clamp for rotary axes up to 20 mm for BF.. and BLF..	ZK-BF
	Adapter with DM18 rotary axis, L = 33 mm for BF.. and BLF..	ZA18-BF
	Adapter 12/8 mm for BF.. and BLF..	ZA8-BF
	Adapter 12/11 mm for BF.. and BLF..	ZA11-BF
	Bracket for SN2-C7 auxiliary switch for BF.. and BR..	ZSN-BF

## Electrical installation

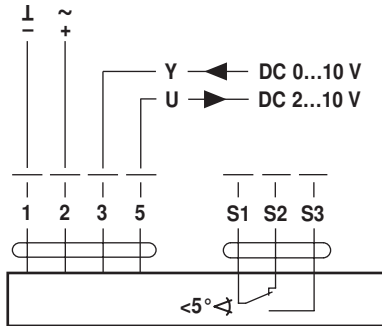


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|--------------|---|
| <b>Notes</b> | <ul style="list-style-type: none"> <li>• Connection via safety isolating transformer.</li> <li>• Parallel connection of other actuators possible. Note the performance data.</li> </ul> |
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**Electrical installation**

**Wiring diagrams**

**AC/DC 24 V, modulating**



**Cable colours:**

- 1 = black
- 2 = red
- 3 = white
- 5 = white

- S1 = white
- S2 = white
- S3 = white

**Dimensions [mm]**

**Dimensional drawings**

