

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

- Torque 18/12 Nm
- Nominal voltage AC/DC 24 V
- Control: Modulating
- Damper rotation: 12 mm form-fit


Technical Data

Electrical data	Nominal voltage	AC 24 V, 50/60 Hz / DC 24 V	
	Nominal voltage range	AC 19.2 ... 28.8 V / DC 21.6 ... 28.8 V	
	Power consumption	motoring	7 W @ nominal torque
		holding	2 W
		for wire sizing	10 VA / I _{max} : 8.3 A @ 5 ms
	Auxiliary switch	2 x 1 SPDT	
	Contact rating (contacts gold plate on silver)	1 mA ... 6 A (3 A), DC 5 V ... AC 250 V <input type="checkbox"/>	
Switching points	5°↔ / 80°↔		
Connecting cable	motor	1 m, 4 x 0.75 mm ² (halogen-free)	
	auxiliary switch	1 m, 6 x 0.75 mm ² (halogen-free)	
Functional data	Torque	motor	Min. 18 Nm
		spring-return	Min. 12 Nm
	Control	control signal Y	DC 0 ... 10 V, Input resistance 100 kΩ (0.1 mA)
		operating range	DC 2 ... 10 V (for control signal Y)
	Position response (measuring voltage U)	DC 2 ... 10 V, max. 0.5 mA (for 0 ... 100% angle of rotation)	
	Position accuracy	±5%	
	Direction of rotation	Selected by mounting L/R	
	Angle of rotation	Max. 95°↔	
	Running time	motor	150 s
		spring-return	~16 s (t _{amb} = 20°C)
	Sound power level	motor	Max. 45 dB (A)
		spring-return	~62 dB (A)
	Damper rotation	Form-fit 12 mm (10 mm with adapter supplied)	
	Position indication	Mechanical with pointer	
	Service life	Min. 60'000 safe positions	
Working conditions	Protection class	III Safety extra-low voltage	
	Degree of protection	IP54 in all mounting positions	
	EMC	CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC	
	Low voltage directive	CE according to 2006/95/EC	
	Mode of operation	Type 1.AA.B (according to EN60730-1)	
	Rated impulse voltage	0.8 kV (according to EN60730-1)	
	Control pollution degree	3 (according to EN60730-1)	
	Ambient temperature range	normal duty	-30 ... +50°C
		safety duty	-30 ... +75°C (24 h)
	Non-operating temperature	-40 ... +50°C	
Ambient humidity range	95% r.H., non-condensating (EN 60730-1)		
Maintenance	Maintenance-free		
Dimensions / weight	Dimensions	See «Dimensions» on page 2	
	Weight	Approx. 2'800 g	

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 electronic and electrical components and may not be disposed of with the household waste. Observe local regulations and valid laws.

Product features

- Mode of operation** The actuator is controlled with a standard signal of DC 0 ... 10 V and moves the damper to the operating position at the same time as tensioning the return spring. If the power supply is interrupted, the energy stored in the spring moves the damper back to its safe position.
- Signalling** 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.
- Manual operation** Without power supply, the damper can be operated manually and fixed in any required position. Release of the locking mechanism can be achieved manually or automatically by applying the supply voltage.
If manual operation is used when supply voltage is present, the actuator, first moves to the safety position for checking and then to the position as defined by control signal Y. During the self-check, the motor running time is increased to 100 s and the measuring voltage remains at 2 V.

Accessories

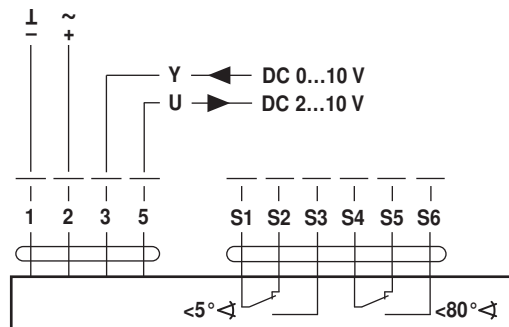
	Description	Type
Electrical accessories	Auxiliary switch, 1 x SPDT 6 A (2.5 A), AC 250 V	SN1
	Auxiliary switch, 2 x SPDT 6 A (2.5 A), AC 250 V	SN2
Mechanical accessories	Adapter with clamp for rotary axes up to 20 mm for BF.. and BLF..	ZK-BF
	Adapter with DM18 rotary axis, L = 33 mm, for BF.. and BLF..	ZA18-BF
	Adapter 12/8 mm for BF.. and BLF..	ZA8-BF
	Adapter 12/11 mm for BF.. and BLF..	ZA11-BF
	Bracket for SN1 and SN2 auxiliary switches for BF..	ZSN-BF

Electrical installation

Wiring diagram

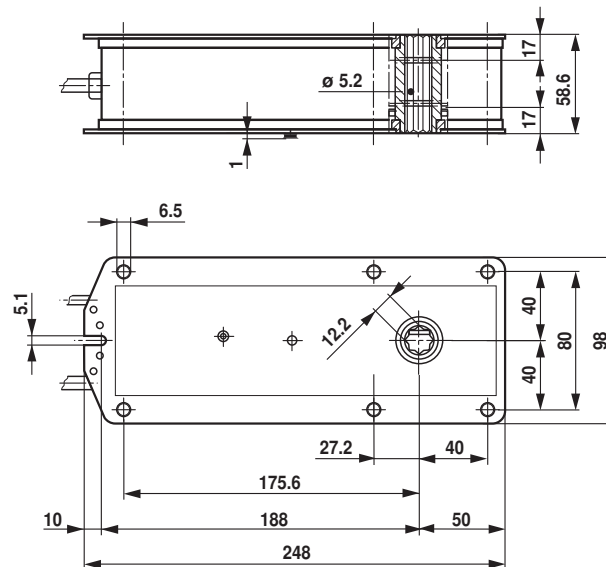
Note

- Supply via safety isolation transformer
- Parallel connection of several actuators possible. Power consumption must be observed!



Dimensions [mm]

Dimensional diagrams



Modulating spring-return actuator, combined with thermo-electric tripping device (72°C), for safety dampers 90° in ventilation and air-conditioning systems.

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		for wire sizing	10 VA / I _{max.} 8.3 A @ 5 ms
	Auxiliary switch	2 x 1 SPDT	
	Contact rating (contacts gold plate on silver)	1 mA ... 6 A (3 A), DC 5 V ... AC 250 V <input type="checkbox"/>	
	Switching points	5° \sphericalangle / 80° \sphericalangle	
	Thermal trips	Tf1: duct outside temperature 72°C Tf2 + Tf3: duct inside temperature 72°C	
	Connecting cable	motor	1 m, 4 x 0.75 mm ² (halogen-free)
auxiliary switch		1 m, 6 x 0.75 mm ² (halogen-free)	
Functional data	Torque	motor	Min. 18 Nm
		spring-return	Min. 12 Nm
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		operating range	DC 2 ... 10 V (for control signal Y)
	Position response (measuring voltage U)	DC 2 ... 10 V, max. 0.5 mA (for 0 ... 100% angle of rotation)	
	Position accuracy	±5%	
	Direction of rotation	Selected by mounting L/R	
	Angle of rotation	Max. 95° \sphericalangle	
	Running time	motor	150 s
		spring-return	~16 s (t _{amb} = 20°C)
	Sound power level	motor	Max. 45 dB (A)
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	Damper rotation	Form-fit 12 mm (10 mm with adapter supplied)	
Position indication	Mechanical with pointer		
Service life	Min. 60'000 safe positions		
Working conditions	Protection class	III Safety extra-low voltage	
	Degree of protection	IP54 in all mounting positions	
	EMC	CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC	
	Low voltage directive	CE according to 2006/95/EC	
	Software class	A	
	Mode of operation	Type 1.AA.B (according to EN60730-1)	
	Rated impulse voltage	0.8 kV (according to EN60730-1)	
	Control pollution degree	3 (according to EN60730-1)	
	Ambient temperature range	normal duty	-30 ... +50°C
		safety duty	-30 ... +75°C (24 h)
Non-operating temperature	-40 ... +50°C		
Ambient humidity range	95% r.H., non-condensating (EN 60730-1)		
Maintenance	Maintenance-free		
Dimensions / weight	Dimensions	See «Dimensions» on page 2	
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Mode of operation

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Thermo-electric tripping device
BAE72B-S

Thermal trip Tf1 operates if the ambient temperature exceeds 72°C.
Replaceable thermal trip Tf2/Tf3 operates if the temperature inside the duct exceeds 72°C.
Tf1, Tf2 or Tf3 trips cause the power supply to be interrupted permanently so that it cannot be uncanceled.

Note

The function of the thermal trip and the test switch is only warranted if the actuator is connected to the power supply and has reached its operating position.

The LED is lit when
– there is a supply voltage,
– the temperature fuses are OK and
– the test switch is not pressed.

Signalling

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.

Manual operation

Without power supply, the damper can be operated manually and fixed in any required position. Release of the locking mechanism can be achieved manually or automatically by applying the supply voltage.

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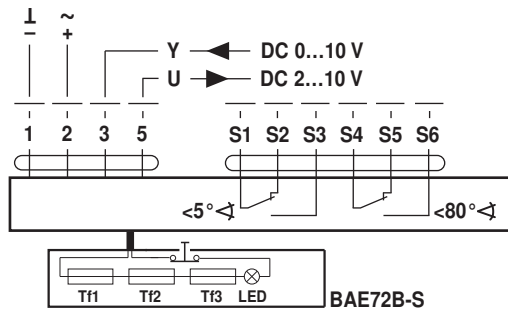
	Description	Type
Electrical accessories	Auxiliary switch, 1 x PDT 6 A (2.5 A), AC 250 V	SN1
	Auxiliary switch, 2 x PDT 6 A (2.5 A), AC 250 V	SN2
	Blanking cover (without canal sensor function)	ZBAE0
	Spare thermoelectric tripping device, Duct inside temperature 72°C	ZBAE72
	Spare thermoelectric tripping device, Duct inside temperature 95°C, colour green	ZBAE95
Mechanical accessories	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
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