BELIMO

Technical data sheet BF230

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

- **Torque 18/12 Nm**
- **Nominal voltage AC 230 V**
- **Control: Open/close**
- **Damper rotation: 12 mm form-fit**

Technical Data

Electrical data	Nominal voltage		AC 230 V, 50/60 Hz
	Nominal voltage range		AC 198 ... 264 V
	Power consumption	motoring	8 W @ nominal torque
		holding	3 W
		for wire sizing	12.5 VA / Imax. 500 mA @ 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 ☐
	Switching points		5°◁ / 80°◁
	Connecting cable	motor	1 m, 2 x 0.75 mm² (halogen-free)
		auxiliary switch	1 m, 6 x 0.75 mm² (halogen-free)
Functional data	Torque	motor	Min. 18 Nm
		spring-return	Min. 12 Nm
	Direction of rotation		Selected by mounting L/R
	Angle of rotation		Max. 95°◁ (incl. 5°◁ spring pretensioning)
	Running time	motor	140 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 with adapter supplied)
	Position indication		Mechanical with pointer
	Service life		Min. 60'000 safe positions
Working conditions	Protection class		**II** totally insulated ☐
	Degree of protection		IP54 in all mounting positions
	EMC low-voltage directive		CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC CE according to 73/23/EEC
	Mode of operation		Type 1.AA.B (according to EN60730-1)
	Rated impulse voltage		4 kV (according to EN60730-1)
	Control pollution degree		3 (according to EN60730-1)
	Ambient temperature range	normal duty safety duty	–30 ... +50°C The safe position will be attained up to max. 75°C when initiated by a thermal trip
	Non-operating temperature		–40 ... +80°C
	Ambient humidity range		According to EN 60730-1
	Maintenance		Maintenance-free
Dimensions / weight	Dimensions		See «Dimensions» on page 2
	Weight		Approx. 3'100 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.**
- **Caution: Power supply voltage!**
- **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 moves the damper to its normal working position while tensioning the return spring at the same time. 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.

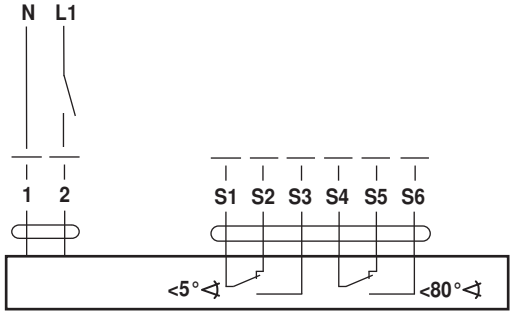
Accessories

	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

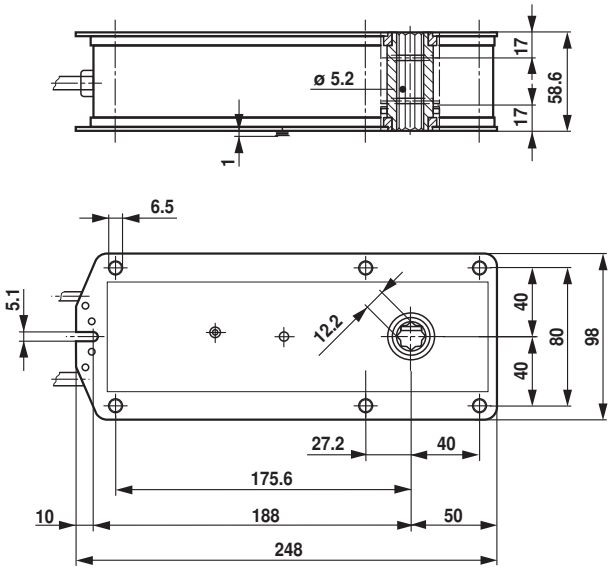
Wiring diagram

Note
- Caution: Main power supply voltage!
- A device that disconnects the pole conductors (minimum contact gap 3 mm) is required for isolation from the power supply.
- Parallel connection of several actuators possible. Power consumption must be observed!



Dimensions [mm]

Dimensional diagrams



BELIMO

Technical data sheet BF230-T

Spring-return actuator, combined with thermo-electric tripping device (72°C), for small fire and smoke dampers 90°∢ in ventilation and air-conditioning systems.

- **Torque 18/12 Nm**
- **Nominal voltage AC 230 V**
- **Control: Open/close**
- **Damper rotation: 12 mm form-fit**

Technical Data

Electrical data	Nominal voltage		AC 230 V, 50/60 Hz
	Nominal voltage range		AC 198 ... 264 V
	Power consumption	motoring	8 W @ nominal torque
		holding	3 W
		for wire sizing	12.5 VA / Imax. 500 mA @ 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 ⧈
	Switching points		5°∢ / 80°∢
	Thermal trips		Tf1: duct outside temperature 72°C Tf2 + Tf3: duct inside temperature 72°C
	Connecting cable	motor	1 m, 2 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
	Direction of rotation		Selected by mounting L/R
	Angle of rotation		Max. 95°∢ (incl. 5°∢ spring pretensioning)
	Running time	motor	140 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		**II** totally insulated ⧈
	Degree of protection		IP54 in all mounting positions
	EMC low-voltage directive		CE according to 89/336/EEC, 92/31/EEC, 93/68/EEC CE according to 73/23/EEC
	Mode of operation		Type 1.AA.B (according to EN60730-1)
	Rated impulse voltage		4 kV (according to EN60730-1)
	Control pollution degree		3 (according to EN60730-1)
	Ambient temperature range	normal duty	–30 ... +50°C
		safety duty	The safe position will be attained up to max. 75 °C
	Non-operating temperature		–40 ... +50°C
	Ambient humidity range		According to EN 60730-1
	Maintenance		Maintenance-free
Dimensions / weight	Dimensions		See «Dimensions» on page 2
	Weight		Approx. 3'100 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.**
- **Caution: Power supply voltage!**
- **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 moves the damper to its normal working position while tensioning the return spring at the same time. If the power supply is interrupted, the energy stored in the spring moves the damper back to its safe position.

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

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.

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.

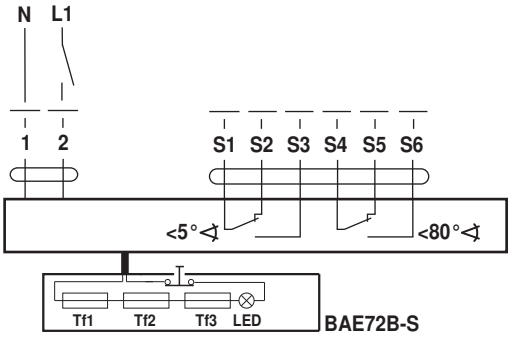
Accessories

	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
	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
- Caution: Main power supply voltage!
- A device that disconnects the pole conductors (minimum contact gap 3 mm) is required for isolation from the power supply.
- Parallel connection of several actuators possible. Power consumption must be observed!



Dimensions [mm]

Dimensional diagrams