BELIMO

Technical data sheet BF24-ST

Spring-return actuator for fire and smoke dampers 90° in ventilation and air-conditioning systems, with connection plugs for simple integration in control and monitoring systems or bus networks via communication and power supply units

- **Nominal torque 18 Nm / 12 Nm**
- **Nominal voltage AC/DC 24 V**
- **Control open-close**
- **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	Imax 8.3 A @ 5 ms
	Auxiliary switch	2 x single-pole double-throw switches,
	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	Cable 1 m, 2 x 0.75 mm² (halogen-free)
	Connection auxiliary switch	Cable 1 m, 6 x 0.75 mm² (halogen-free)
	Connection plug	Supply / control: 3-pole plug, suitable for communication and power supply units (see "Accessories") Auxiliary switch: 6-pole plug, suitable for communication and power supply units (see “Accessories”)
Functional data	Torque motor	Min. 18 Nm
	Torque spring-return	Min. 12 Nm
	Direction of rotation motor	Can be selected by mounting L / R
	Angle of rotation	Max. 95° (incl. 5° initial spring tension)
	Running time motor	<120 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)
	Damper rotation	Form fit 12 mm (10 mm with enclosed adapter)
	Position indication	Mechanically, with pointer
	Service life	Min. 60,000 safety positions
Safety	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 when triggered by a thermal fuse
	Non-operating temperature	-40°C ... 80°C
	Ambient humidity	95% r.h., non-condensing
	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 is not allowed to be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

Mode of operation
The actuator moves the damper to the operating position at the same time as tensioning the return spring. The damper is turned back to the safety position by spring energy when the supply voltage is interrupted.

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. It can be unlocked manually or automatically by applying the supply voltage.

Standards / Regulations
The design of the actuator is based on the specific requirements from the European standards:
- 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
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».

Connecting
The actuator is fitted with plugs. This means that it can be integrated via a communication and power supply unit (see "Accessories") in the control and monitoring systems (e.g. SBS control) or in bus networks (e.g. MP bus solutions).
Connection plug



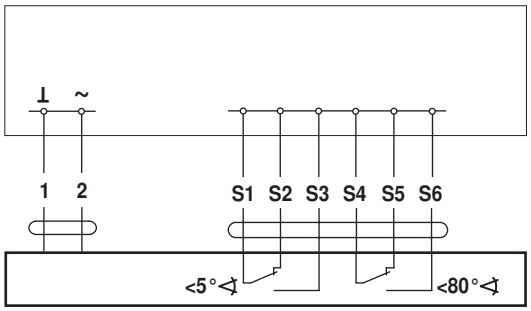
Accessories

	Description	Data sheet name
Electrical accessories	Thermoelectrical tripping device	BAE72
	Thermoelectrical tripping device, with plug	BAE72-F-ST
	Thermoelectrical tripping device, with test button	BAE72-S
	Thermoelectrical tripping device, with plug, with test button	BAE72-S-F-ST
	Auxiliary switch 2 x SPDT	SN2-C7
	Cable set with plug, L = 0.5 m for communication and power supply unit	ZST-BS
	Communication and power supply unit for integration in SBS-Control networks	BKN230-24
	Communication and power supply unit for integration in SBS-Control and MP bus networks	BKN230-24-C-MP
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

Wiring diagrams

Connection by means of plug at communication and power supply units



Application examples for integration into monitoring and control systems or into bus networks can be found in the documentation of the connected communication and power supply unit (see "Accessories").

Dimensions [mm]

Dimensional drawings

