

Top-Line spring-return actuator, combined with thermoelectric tripping device (72 °C), for fire and smoke dampers 90° in ventilation and air-conditioning systems, integrated in LONWORKS® or BELIMO MP bus networks

- 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	8 W
	Power consumption at rest	3.5 W
	Power consumption for wire sizing	11 VA
	Power consumption for wire sizing note	I _{max} 8.3 A @ 5 ms
	Connection supply / control	Cable 1 m, 4 x 0.75 mm ² (halogen-free)
	Connection plug	Supply / control: 4-pole plug, suitable for BKN230-24LON and BKN230-24MP
	Cable length thermoelectric tripping device	1 m
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	Response temperature thermal fuse	Tf1: Duct outside temperature 72 °C Tf2 and Tf3: Duct inside temperature 72 °C
	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
	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	
Non-operating temperature	-40 °C ... 50 °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 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

Mode of operation	<p>The actuator 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 if the supply voltage is interrupted or if the temperature switch is tripped.</p> <p>Safety through permanent monitoring: When integrated in bus systems, additional information can be called up and monitored from the actuator:</p> <ul style="list-style-type: none"> – Announcement of the current position OPEN / running OPEN or CLOSED / CLOSED – Status of the BAE tripping device – Fault messages, such as, e.g. damper blocked, BAE tripped – Central triggering of a function test – Evaluation of a smoke detector contact – Watchdog function (actuator moves into safety position), if no communication is possible for longer than 60 seconds. <p>Note: If the actuator is used with the BKN230-24LON, then the watchdog function of the BKN module is to be activated.</p>
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	<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	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	<p>The actuator is equipped with a connection plug. This means that it can be integrated via communication and power supply unit (see «Accessories») in LONWORKS® or in MP bus networks.</p> <p>Connection plug</p>



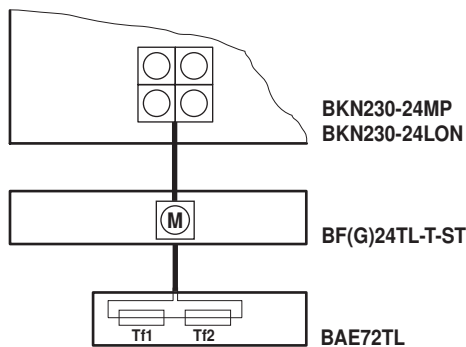
Accessories

	Description	Data sheet name
Electrical accessories	Communication and power supply unit for integration in LONWORKS® network	BKN230-24LON
	Communication and power supply unit for integration in MP-Bus network	BKN230-24MP
	Belimo PC-Tool, software for adjustments and diagnostics	MFT-P
	Blanking cover for BAE (without thermal fuse for duct inside temperature)	ZBAE0
	Spare tripping element for BAE, duct inside temperature = 72 °C, sensor length = 65 mm	ZBAE72
	Spare tripping element for BAE, duct inside temperature = 95 °C, sensor length = 65 mm	ZBAE95
	ZIP-USB-MP interface	ZIP-USB-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

AC/DC 24, open-close



Dimensions [mm]

Dimensional drawings

