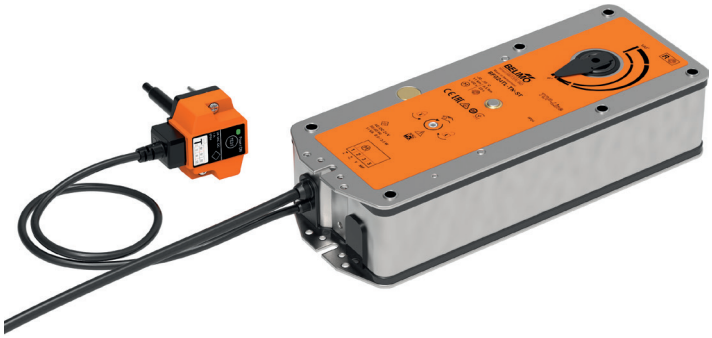
BELIMO

Technical data sheet BFG24TL-TN-ST

Top-Line spring-return actuator, combined with thermoelectric tripping device BAT (72°C), for fire and smoke dampers 180° in ventilation and air-conditioning systems, integrated in LONWORKS® or BELIMO MP-Bus networks

- **Torque 11 Nm / 8.5 Nm**
- **Nominal voltage AC/DC 24 V**
- **Control Open/close**
- **Mechanical interface Form fit 10x10 mm, Non-continuous hollow shaft**



MP BUS®

Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	8 W
	Power consumption in rest position	3.5 W
	Power consumption for wire sizing	11 VA
	Power consumption for wire sizing note	Imax 8.3 A @ 5 ms
	Connection supply / control	Cable with Connector Plug 1 m, 4 x 0.75 mm² (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	11 Nm
	Torque fail-safe	8.5 Nm
	Direction of rotation motor	Can be selected by mounting L/R
	Manual override	with position stop
	Angle of rotation	Max. 180°
	Running time motor	<120 s / 180°
	Running time fail-safe	20 s tamb = 20°C
	Running time fail-safe note	tamb = 20°C
	Sound power level, motor	45 dB(A)
	Sound power level, fail-safe	63 dB(A)
	Mechanical interface	Form fit 10x10 mm, Non-continuous hollow shaft
	Position indication	Mechanically, with pointer
	Service life	Min. 60'000 safety positions
Safety	Response temperature thermal fuse	Duct outside temperature 72°C Duct inside temperature 72°C
	Protection class IEC/EN	III Safety Extra-Low Voltage (SELV)
	Protection class auxiliary switch IEC/EN	II reinforced insulation
	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	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 operation	-30...50°C
	Ambient temperature safety operation	The safety position will be attained up to max. 75°C
	Storage temperature	-40...50°C
	Ambient humidity	Max. 95% r.H., non-condensing
	Servicing	maintenance-free
Weight	Weight	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

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 emergency position by spring force if the supply voltage is interrupted or if the temperature fuse is tripped.
Safety through permanent monitoring:
If there is integration in bus systems, then additional information can be called up and monitored by the actuator:
– Message regarding the current position OPEN / runs OPEN or CLOSED / CLOSED
– Status of the BAT tripping device
– Error messages, e.g. damper blocked, BAT triggered
– Central triggering of a function test
– Evaluation of a smoke detector contact
– Watchdog function (actuator moves to the safety position), if no communication is possible for longer than 60 seconds.
Note: if the actuator is used with the BKN230-24LON, then the watchdog function of the BKN module has to be activated.

Thermoelectric tripping device

Complies with the specific requirements of the standard ISO 10294-4.
BAT: if the ambient temperature of 72°C is exceeded, then the duct outside temperature fuse will respond. If the duct inside temperature of 72°C is exceeded, then the duct inside temperature fuse will respond.

Signalling

The position of the damper blade can be read off on a mechanical position indication.

Manual operation

Without power supply, the actuator 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".

Connection

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.

Delivery notes

Incl. Hand crank, Pointer, Protective bag, Form fit insert 12/10 mm

Accessories

	Description	Type
Electrical accessories	Auxiliary switch 2 x SPDT	SN2-C7
	Blanking cover for BAT (without thermal fuse for duct inside temperature) Multipack 20 pcs.	ZBAT0
	Spare tripping element for BAT, duct inside temperature 72°C, Probe length 65 mm	ZBAT72
	Spare tripping element for BAT, duct inside temperature 72°C	ZBAT72/9
	Spare tripping element for BAT, duct inside temperature 95°C, Probe length 65 mm	ZBAT95
	Spare tripping element for BAT, duct inside temperature 95°C, Probe length 65 mm Multipack 20 pcs.	ZBAT95.1
	Spare tripping element for BAT, duct inside temperature 95°C	ZBAT95/9
	Spare tripping element for BAT, duct inside temperature 120°C, Probe length 65 mm	ZBAT120
	Cable set with plug 0.5 m for communication and power supply unit	ZST-BS
	Description	**Type**
Mechanical accessories	Pointer 12x12 mm for BLF, BF, BLE	ZZ12-B
	Hand crank 40 mm for BLF, BF, BLE, BE	ZK1-B
	Hand crank 70 mm for BLF, BF, BLE, BE	ZK2-B
	Bracket for SN2-C7 to BF	ZSN-BF
	Adapter for form fit with clamp for round shaft 10...20 mm / square 10...16 mm for BF	ZK-BF
	Adapter for form fit 12 mm with round shaft 18 mm, L = 33 mm for BF	ZA18-BF
	Form fit insert 12/8 mm for BFL, BLF, BFN, BF, BLE	ZA8-B
	Form fit insert 12/10 mm for BFL, BLF, BFN, BF, BLE	ZA10-B
	Form fit insert 12/11 mm for BFL, BLF, BFN, BF, BLE	ZA11-B
	Protective bag with wire Multipack 100 pcs.	ZSD-B.1

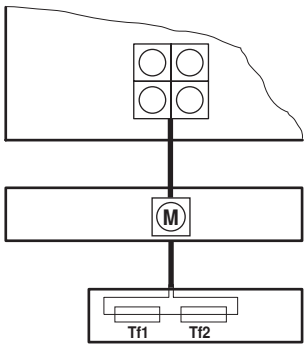
Electrical installation

Notes

- Connection via safety isolating transformer.

Wiring diagrams

AC/DC 24 V, open-close



BKN230-24MP
BKN230-24LON

BF(G)24TL-T-ST

BAT72TL

Dimensions [mm]

Dimensional drawings