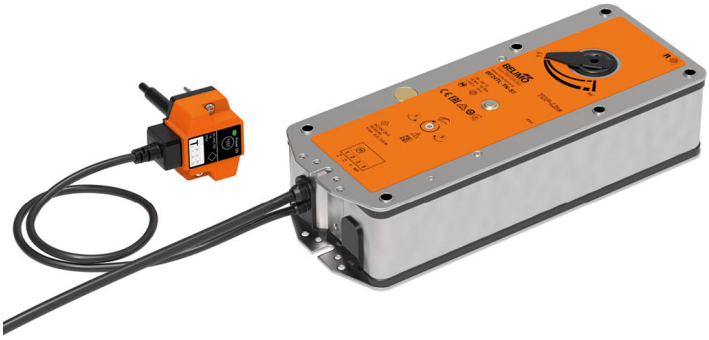
Top-Line spring-return actuator, combined with thermoelectric tripping device BAT (72°C), for fire and smoke dampers 90° in ventilation and air-conditioning systems, integrated in LONWORKS® or BELIMO MP-Bus networks

- **Torque motor 18 Nm / 12 Nm**
- **Nominal voltage AC/DC 24 V**
- **Control Open/close, communicative**
- **Mechanical interface Form fit 12x12 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
	Auxiliary switch	2x SPDT
	Connection supply / control	Cable with connector plug 1 m, 4x 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	18 Nm
	Torque fail-safe	12 Nm
	Direction of motion motor	selectable by mounting L/R
	Manual override	with position stop
	Angle of rotation	Max. 95°
	Angle of rotation note	incl. 5° initial spring tension
	Running time motor	<120 s / 90°
	Running time fail-safe	16 s @ 20°C
	Sound power level, motor	45 dB(A)
	Sound power level, fail-safe	63 dB(A)
	Mechanical interface	Form fit 12x12 mm, non-continuous hollow shaft
	Position indication	Mechanical, with pointer
	Service life	Min. 60'000 safety positions
	Probe length	65 mm
Safety data	Response temperature thermal fuse	Duct outside temperature 72°C Duct inside temperature 72°C (colour black)
	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)
	Degree of protection IEC/EN	IP54 IP protection in all mounting orientations
	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
	Type of action	Type 1.AA.B
	Rated impulse voltage supply / control	0.8 kV

Technical data

Safety data

Pollution degree	3
Ambient humidity	Max. 95% RH, non-condensing
Ambient temperature normal operation	-30...50°C [-22...122°F]
Ambient temperature safety operation	The safety position will be attained up to max. 75°C
Storage temperature	-40...50°C [-40...122°F]
Servicing	maintenance-free

Weight

Weight	2.6 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

Operating mode

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 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.

Manual override

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.

Signalling

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

Product features

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

The regular operational check (open/close control of the fire damper) enhances 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 a monthly operational check. 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.

Parts included

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

Accessories

Electrical accessories

Description	Type
Communication and power supply unit for fire damper actuators 24 V with connector	BKN230-24MP
Auxiliary switch 2x SPDT	SN2-C7
Blanking cover for BAT (without thermal fuse for duct inside temperature)	ZBAT0
Spare tripping element for BAT, Duct inside temperature 72°C (colour black), Probe length 65 mm	ZBAT72
Spare tripping element for BAT, Duct inside temperature 72°C (colour black), Probe length 90 mm	ZBAT72/9
Spare tripping element for BAT, Duct inside temperature 95°C (colour grey), Probe length 65 mm	ZBAT95
Spare tripping element for BAT, Duct inside temperature 95°C (colour grey), Probe length 90 mm	ZBAT95/9
Spare tripping element for BAT, Duct inside temperature 120°C (colour orange), Probe length 65 mm	ZBAT120
Spare tripping element for BAT, Duct inside temperature 140°C (colour red), Probe length 65 mm	ZBAT140
Service tool, with ZIP-USB function, for parametrisable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH EU
Belimo PC-Tool, Software for adjustments and diagnostics	MFT-P

Mechanical accessories

Description	Type
Bracket for SN2-C7 for BF	ZSN-BF

Accessories

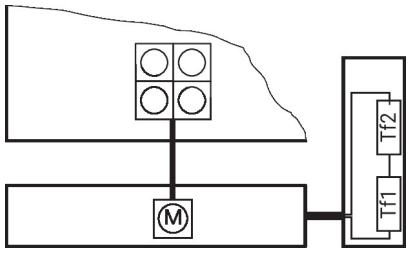
Description	Type
Adapter, for form fit 12 mm on round shaft 18 mm, L = 33 mm	ZA18-BF
Adapter, for form fit with clamp for round shaft 10...20 mm / square 10...16 mm	ZK-BF
Pointer 12x12 mm	ZZ12-B
Hand crank 40 mm	ZK1-B
Hand crank 70 mm	ZK2-B
Protective bag with wire, Multipack 100 pcs.	ZSD-B.1

Electrical installation

Supply from isolating transformer.

Wiring diagrams

AC/DC 24 V, open/close

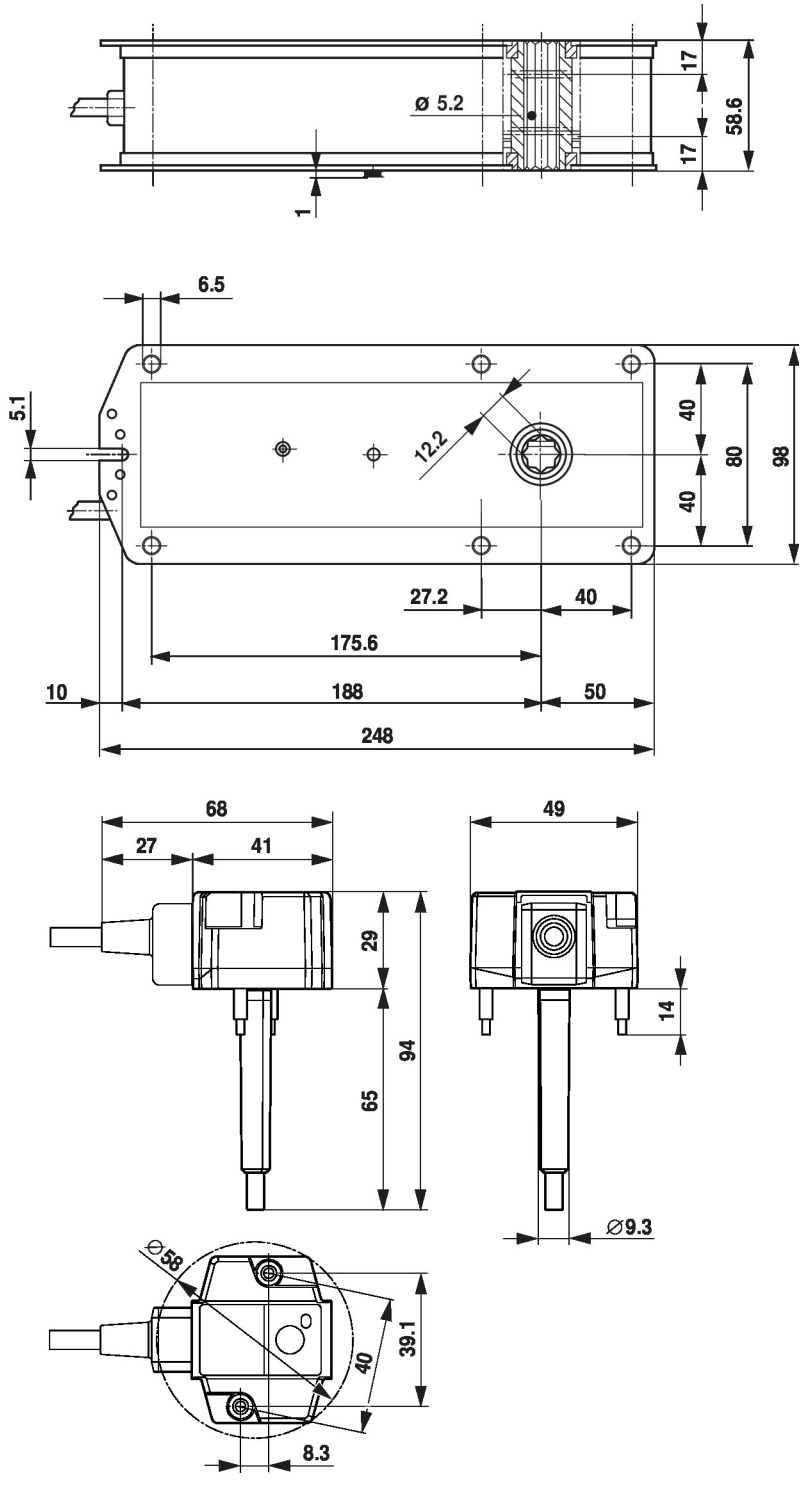


BKN230-24MP

BF(G)24TL-T-ST

BAT72TL

Dimensions


Ø 5.2
17
58.6
17
1
6.5
5.1
12.2
40
80
98
40
27.2
40
175.6
10
188
50
248
68
27
41
29
94
65
49
14
Ø9.3
Ø58
39.1
40
8.3