

Fire and Smoke protection Spring-Return Actuator	BLF..	BF..	BFG..	FSLF..US	FSNF..US	FSAF..US
Agency listing	CE certification			UL555 and UL555S		
Torque -Motor	6Nm	18Nm	11Nm	3.5Nm	7.9Nm	15Nm
-Spring return	4Nm	12Nm	8.5Nm			
Open/Close						
AC 24V 50/60Hz, DC 24V	BLF24	BF24	BFG24			FSAF24 US
AC 24V 50/60Hz, DC 24V with thermal trip (72°C)	BLF24-T	BF24-T	BFG24-T			
AC/DC 24V with plug connect to BKN230-24	BLF24-ST	BF24-ST	BFG24-ST			
AC 24V 50/60Hz, DC 24V with thermal trip and plug connect to BKN230-24	BLF24-T-ST	BF24-T-ST	BFG24-T-ST			
AC 24V 50/60Hz				FSLF24 US	FSNF24 US	
AC 230V 50/60Hz	BLF230	BF230	BFG230	FSLF230 US	FSNF230 US	FSAF230 US
AC 230V 50/60Hz with thermal trip	BLF230-T	BF230-T	BFG230-T			
Modulating (AC 24V 50/60Hz, DC 24V)						
Control signal DC 2(0)...10V						
Feedback signal DC 2...10V	BLF24-SR*	BF24-SR(-T)				FSAF24-SR(-S) US
Running time -Motor	40..75s	140s	140s	15s	15s	75s
-Spring return	20s	16s	20s	15s	15s	20s
Built-in 2 SPDT auxiliary switch	Built-in**				FSNF24-S US FSNF230-S US	
Built-in 2 SPST auxiliary switch				FSLF24-S US FSLF230-S US		FSAF24-S US FSAF230-S US
Form-fit	12x12mm, (10x10mm with adapter)		10x10mm			
Clamp				12.7...20mm	12.7...26mm	
Manual override function	Yes***					Yes
Angle of rotation	Max. 95°		Max.180°	Max. 95°		
Direction of rotation selectable by L/R mounting	Yes					

* For BLF24-SR, the motor torque is 4Nm and the spring return torque is 4Nm, motor running time is 150s.

** BLF24-SR has 1 SPDT auxiliary switch built-in.

***BLF24-SR has no manual override function.

Smoke control Non-Spring-Return Actuator	BLE..	BE..	BEG..	BR..
Agency listing	CE certification			
Torque	15Nm	40Nm	24Nm	15Nm
Open/Close				
AC 24V 50/60Hz, DC 24V	BLE24	BE24	BEG24	
AC/DC 24V with plug connect to BKNE230-24	BLE24-ST	BE24-ST	BEG24-ST	
AC 24...48V compatible with control unit for pulse triggering BSIA24-48(-R)				BR24-48-F-ST
AC 230V 50/60Hz	BLE230	BE230	BEG230	
Running time	30s	60s	60s	30s
Form-fit 12x12mm	Yes	BE24-12 BE24-12-ST BE230-12	Yes	Yes
Form-fit 14x14mm		Yes		
Angle of rotation	Max. 95°		Max. 180°	Max. 105°
Direction of rotation selectable by L/R mounting	Yes			
Built-in 2 SPDT auxiliary switch	Yes			
Manual override function	Yes			

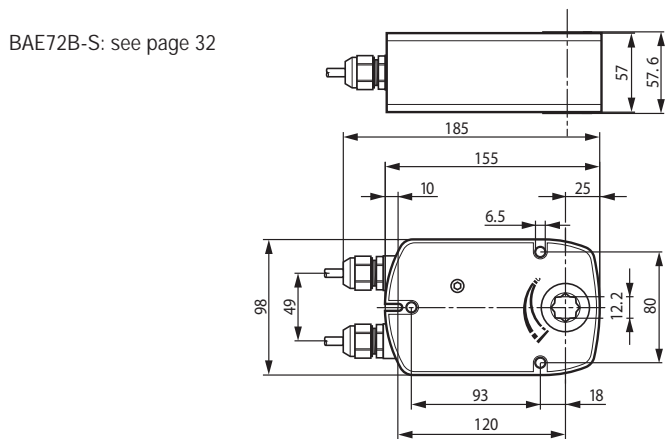
- For control of Fire and Smoke Dampers in HVAC systems
- Torque: 6/4Nm
- Nominal voltage: AC/DC 24V
- Manual override function
- Control: Open/Close



Technical data

Electrical data	Nominal voltage	AC 24V 50/60Hz, DC 24V	
	Nominal voltage range	AC 19.2...28.8V, DC 21.6...28.8V	
	Power consumption	5W @ running / 2.5W @ holding	
	Wire sizing	7VA (I _{max} 5.8A @ 5ms)	
	Auxiliary switch	2 SPDT, 1mA...3(0.5)A, DC 5V...AC 250V <input type="checkbox"/>	
	-Switching points	fixed at 5°↔, 80°↔	
	Connection cable -Motor	1m, 2x0.75mm ² (halogen-free)	
	-Auxiliary switch	1m, 6x0.75mm ² (halogen-free) (...ST with plug connectors, suitable for BKN230-24)	
	Functional data	Torque - Motor	Min. 6Nm
		- Spring return	Min. 4Nm
Thermal trip (-T: BAE72B-S)		Tf1: duct outside temperature 72°C Tf2/Tf3: duct inside temperature 72°C *(Art. Nr. ZBAE72)	
Direction of rotation		Selectable by L/R installation	
Angle of rotation		Max. 95°↔ (incl. 5°↔ spring pretensioning)	
Running time - Motor		40...75s (0...6Nm)	
- Spring return		~20s @ -20...+50°C/max. 60s @ -30°C	
Sound power level		Motor max. 45dB(A), Spring return approximately 62dB(A)	
Position indication		Mechanical with pointer	
Service life		>60,000 cycles	
Working conditions	Protection class	III (safety extra-low voltage)	
	Degree of protection	IP54	
	EMC	CE according to 2004/108/EC	
	Mode of operation	Type 1.AA.B	
	Ambient temperature - Normal duty	-30...+50°C	
	- Safety duty	Safe position will be attained up to max. 75°C when initiated by a thermal trip	
	Non-operation temperature	-40...+50°C (-40...+80°C without thermal trip)	
	Humidity test	95%RH, non condensing	
	Maintenance	Maintenance-free	
	Dimensions / weight	Dimensions (L x W x H)	185x98x57.6mm
Shaft diameter		Form-fit 12x12mm (10mm with adapter supplied)	
Weight		BLF24 (-ST) Approximately 1540g BLF24-T(-ST) Approximately 1630g	

Dimensions [mm]



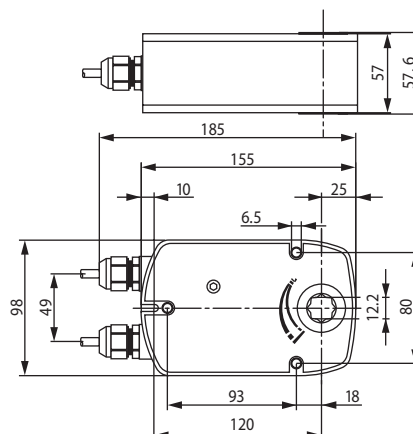
- For control of Fire and Smoke Dampers in HVAC systems
- Torque: 4/4Nm
- Nominal voltage: AC/DC 24V
- Control signal: DC 2(0)...10V
- Position feedback: DC 2...10V



Technical data

Electrical data	Nominal voltage	AC 24V 50/60Hz, DC 24V
	Nominal voltage range	AC 19.2 ... 28.8V, DC 21.6...28.8V
	Power consumption	2.5W @ running / 1W @ holding
	Wire sizing	5VA (Imax 5.8A @ 5ms)
	Auxiliary switch	1 SPDT, 1mA...3(0.5)A, AC 250V <input type="checkbox"/> fixed at 5°
Functional data	Connection cable -Motor	1m, 4x0.75mm ² (halogen-free)
	-Auxiliary Switch	1m, 3x0.75mm ² (halogen-free)
	Torque - Motor	Min. 4Nm
	- Spring return	Min. 4Nm
	Control signal	DC 2 (0) ...10V (input impedance 100kΩ)
	Feedback signal	DC 2...10V
	Direction of rotation -Motor	Selectable by L/R switch
	-Spring return	Selectable by L/R installation
	Angle of rotation	Max. 95°
	Running time - Motor	150s
- Spring return	~20s (@ t _{amb} =20°C)	
Working conditions	Sound power level	Motor max. 45dB(A), Spring return approximately 62dB(A)
	Position indication	Mechanical with pointer
	Service life	>60,000 cycles
	Protection class	III (safety extra-low voltage)
	Degree of protection	IP54
	EMC	CE according to 2004/108/EC
	Mode of operation	Type 1.AA.B
	Ambient temperature - Normal duty	-30...+50°C
	- Safety duty	Safe position will be attained up to max. 75°C
	Non-operation temperature	-40...+80°C
Dimensions / weight	Humidity test	95%RH, non condensing
	Maintenance	Maintenance-free
	Dimensions (L x W x H)	185x98x57.6mm
	Shaft diameter	Form-fit 12x12mm (10mm with adapter supplied)
	Weight	Approximately 1630g

Dimensions [mm]



- For control of Fire and Smoke Dampers in HVAC systems
- Torque: 6/4Nm
- Nominal voltage: AC 230V
- Manual override function
- Control: Open/Close

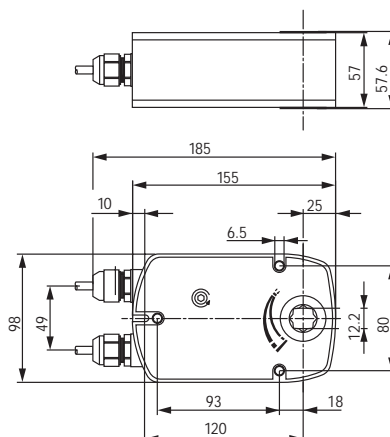


Technical data

Electrical data	Nominal voltage	AC 230V 50/60Hz
	Nominal voltage range	AC 198 ... 264V
	Power consumption	6W @ running/3W @ holding
	Wire sizing	7VA (Imax. 150mA @ 10ms)
	Auxiliary switch	2 SPDT, 1mA...3(0.5)A, DC 5V...AC 250V <input type="checkbox"/>
	-Switching points	fixed at 5°↙, 80°↘
	Connection cable -Motor	1m, 2x0.75mm ² (halogen-free)
-Auxiliary switch	1m, 6x0.75mm ² (halogen-free)	
Functional data	Torque - Motor	Min. 6Nm
	- Spring return	Min. 4Nm
	Thermal trip (-T: BAE72B-S)	Tf1: duct outside temperature 72°C Tf2/Tf3: duct inside temperature 72°C *(Art. Nr. ZBAE72)
	Direction of rotation	Selectable by L/R installation
	Angle of rotation	Max. 95°↘ (incl. 5°↘ spring pretensioning)
	Running time - Motor	40...75s (0...6Nm)
	- Spring return	~20s @ -20...+50°C/max. 60s @ -30°C
	Sound power level	Motor max. 45dB(A), Spring return approximately 62dB(A)
	Position indication	Mechanical with pointer
	Service life	>60,000 cycles
Working conditions	Protection class	II (all insulated) <input type="checkbox"/>
	Degree of protection	IP54
	EMC	CE according to 2004/108/EC
	Mode of operation	Type 1.AA.B
	Ambient temperature - Normal duty	-30...+50°C
	- Safety duty	Safe position will be attained up to max. 75°C when initiated by a thermal trip
Non-operation temperature	-40...+50°C (-40...+80°C without thermal trip)	
Humidity test	95%RH, non condensing	
Maintenance	Maintenance-free	
Dimensions / weight	Dimensions (L x W x H)	185x98x57.6mm
	Shaft diameter	Form-fit 12x12mm (10mm with adapter supplied)
	Weight	Approximately 1730g

Dimensions [mm]

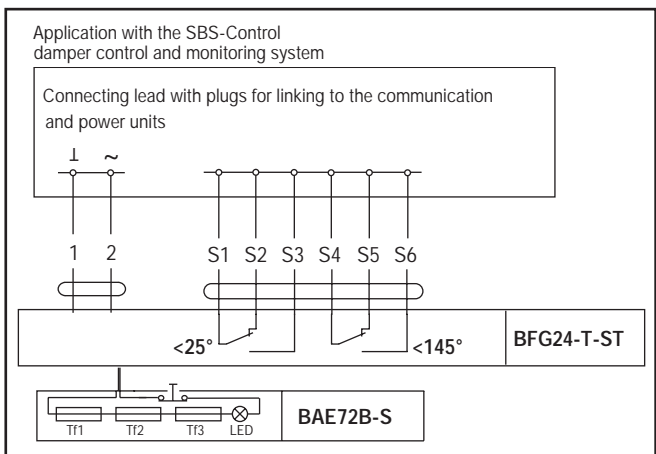
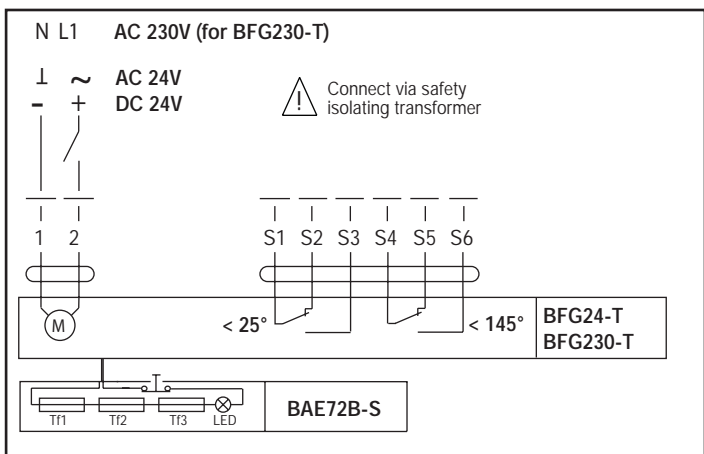
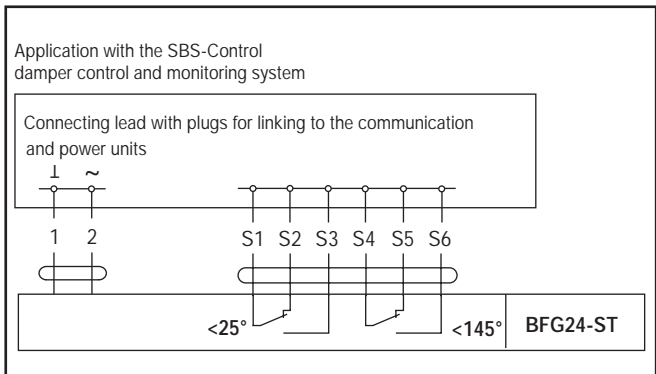
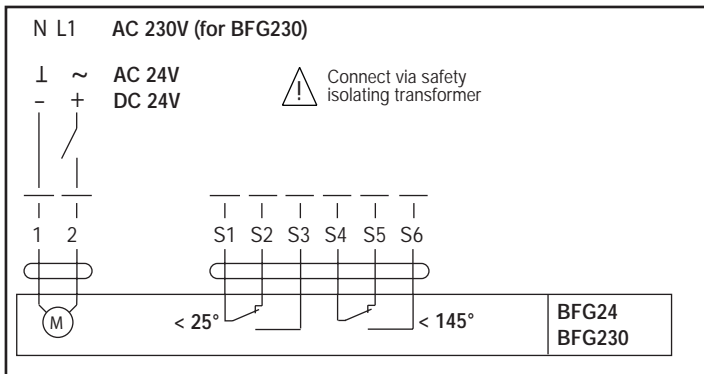
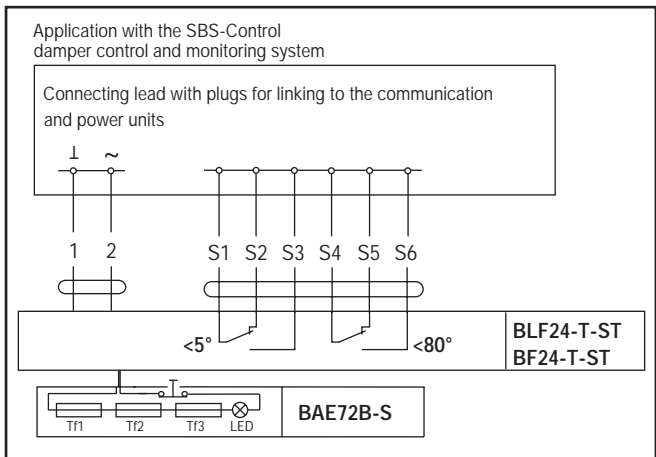
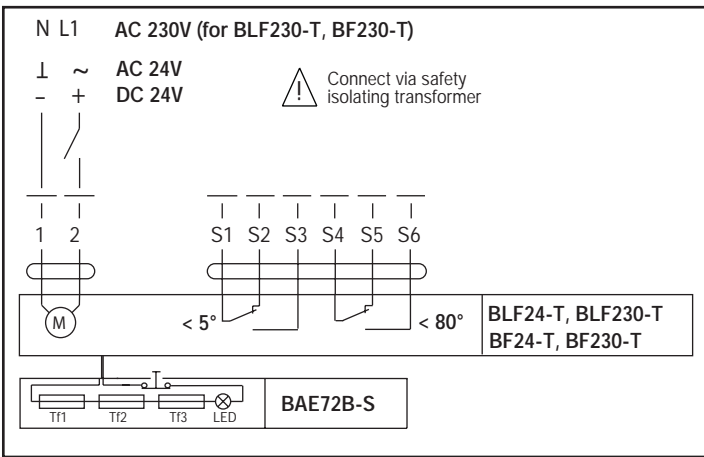
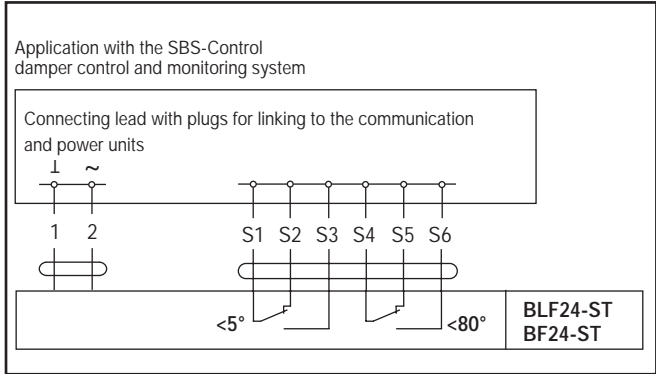
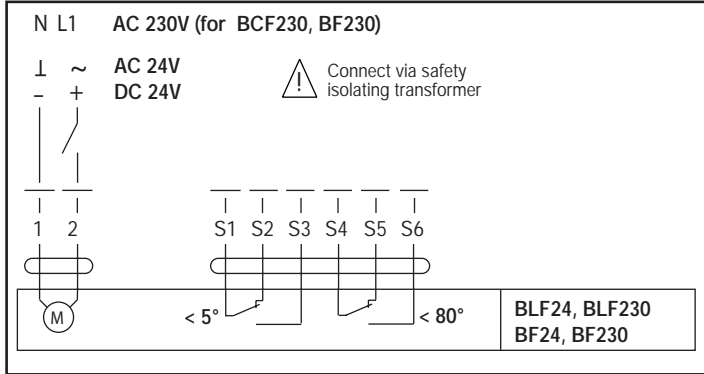
BAE72B-S: see page 32



Wiring diagram: B..F.. series Spring-Return Open/Close Actuators

Notes:

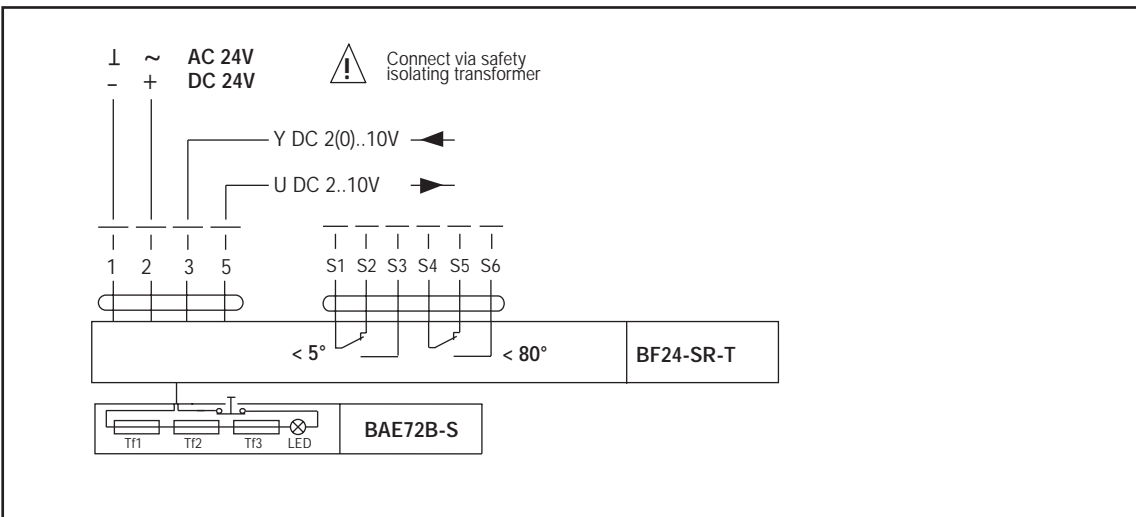
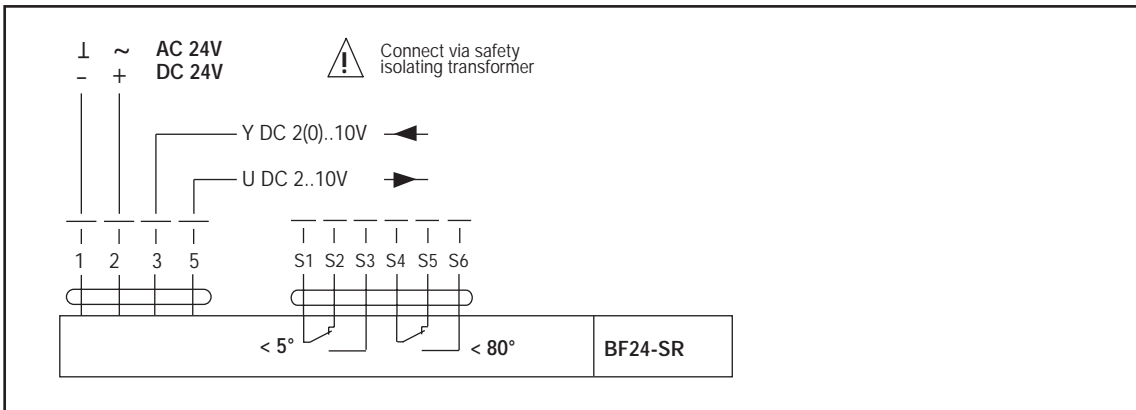
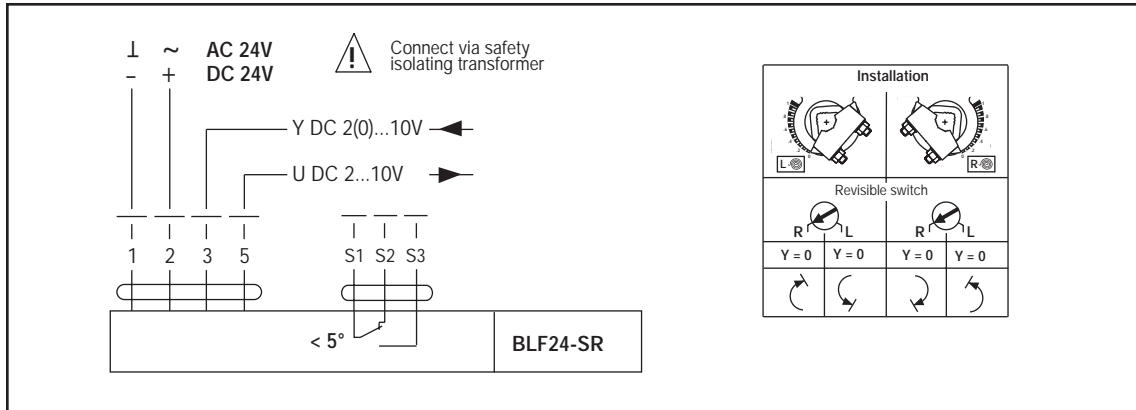
- Parallel connection of several actuators is possible.
- Power consumption must be observed.



Wiring diagram: B..F. series Spring-Return Modulating(-SR) Actuators

Notes:

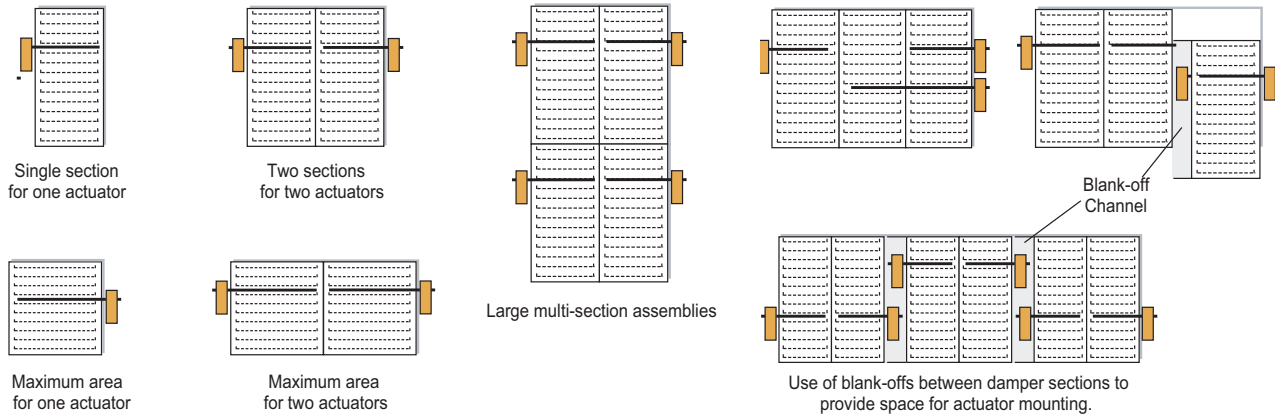
- Parallel connection of several actuator is possible.
- Power consumption must be observed.



Multi-section damper assemblies - typical applications

The typical US Fire and Smoke Damper requires 5-15 in-lb torque per square ft. [6-17 Nm per square meter] at 171°C under dynamic load (2400 fpm [12 m/s] velocity).

Some of multiple actuators application are shown below.



Product features

Mode of operation The actuator moves the damper to its normal working position while tensions 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.

High function reliability mounting FS.. series: Direct mounting on the damper spindle by a cold-weld clamp. Teeth in the clamp and V-bolt dig into the metal of both solid and hollow shafts maintaining a perfect connection. The special designed clamp will not crush hollow shafts. An anti-rotation device is supplied.

B..F.. series: Square shaft mounting - mounting the actuator on the damper spindle through a square shaft adaptor. The square shaft adaptor maintains a perfect connection. An anti-rotation device has to be installed by the fire damper manufacturer, or order an anti-rotation strip device separately.

Manual override function B..F.. & FSAF.. series: 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.

Internal Aux. switch B..F.. & FS..-S US series: Actuator has two (one for BLF24-SR) internal auxiliary switches.

Thermal tripping device BAE72B-S B..F..-T series: 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. Both trips cause the power supply to be interrupted permanently, so that it cannot be uncancelled.

Connection to SBS-Control B..F..-ST series: Available with plug connectors fitted to their connecting leads. This allows the actuator to be incorporated into the SBS-Control damper monitoring system via the type BKN230-24 communication and power supply unit.

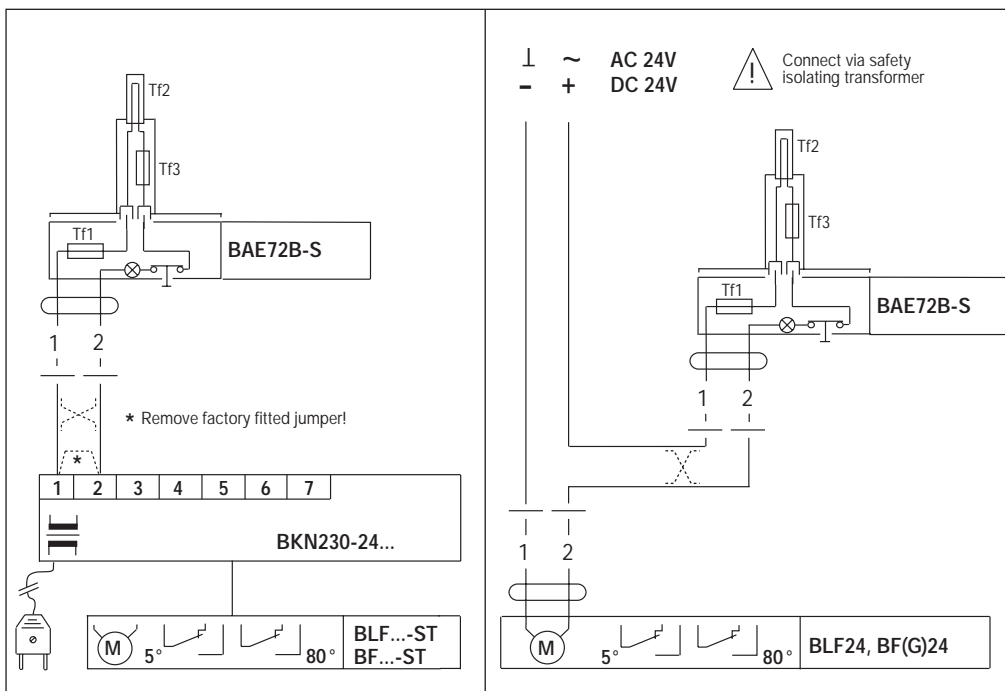
- Thermoelectric tripping device
- BAE72-S, without LED (order separately)
- BAE72B-S, with LED (not available for order separately, only integrated with actuator)



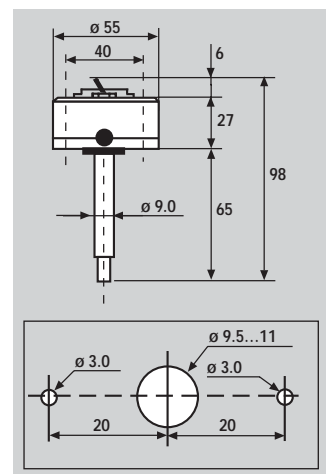
Technical data

Electrical data	Rated voltage	AC/DC 24V
	Rated current	Max. 3A
	Through resistance	<1 Ω
	Connection	Cable 1.2m long, 2x0.5 mm ² , BETA flam 145 (interchangeable wires)
Functional data	Operating temperature thermal trips	Tf1: duct outside temperature 72°C Tf2, Tf3: duct inside temperature 72°C (replaceable)
	(..-S) with test button	For function check
	LED	Light when - there is a supply voltage - the temperature fuses are ok - the test switch is not pressed
	Testing	- VdS Verband der Sachversicherer, D-Köln, to DIN 4102, Part 06 - CNPP Centre National de Prévention et Protection, F-Vernon, to NF S61-937
Working conditions	Protection class	III (safety extra-low voltage)
	Degree of protection	IP54
	Ambient temperature range	-30...+50°C
	Non operation temperature	-40...+50°C
	Humidity test	To EN 60730-1
	EMC	CE according to 89/336/EEC
	Maintenance	Maintenance-free
Dimensions / weight	Dimensions (L x W x H)	See "Dimensions"
	Weight	Approx. 85g

Wiring diagram



Dimensions [mm]



Spare parts:

Thermal trip Tf2/Tf3
 Thermal trip Tf2/95°C

ZBAE72
ZBAE95

Subject to technical changes.