

Modulating spring return actuator with emergency function for adjusting air dampers in ventilation and air conditioning systems in buildings

- For air dampers up to approx. 6 m<sup>2</sup>
- Torque 30 Nm
- Nominal voltage AC/DC 24 V
- Control: modulating DC 0 ... 10 V
- Position feedback DC 2 ... 10 V


**Technical data**

<b>Electrical data</b>	Nominal voltage	AC 24 V, 50/60 Hz / DC 24 V	
	Nominal voltage range	AC 19.2 ... 28.8 V / DC 21.6 ... 28.8 V	
	Power consumption	In operation	7 W @ nominal torque
		At rest	4.5 W
	For wire sizing	12 VA	
	Connection	Cable 1 m, 4 x 0.75 mm <sup>2</sup>	
<b>Functional data</b>	Torque	Motor	Min. 30 Nm @ nominal voltage
		Spring return	Min. 30 Nm
	Control	Control signal Y	DC 0 ... 10 V, input impedance 100 kΩ
		Operating range	DC 2 ... 10 V
	Position feedback (measuring voltage U)		DC 2 ... 10 V, max. 0.5 mA
	Position accuracy		±5%
	Direction of rotation	Motor	Reversible with switch ↻ / ↻
		Spring return	Can be selected by mounting L / R
	Manual override		With hand crank and interlocking switch
	Angle of rotation		Max. 95°↔, can be limited with adjustable mechanical end stop
	Running time	Motor	150 s (0 ... 30 Nm)
		Spring return	≤20 s @ -20 ... 50°C / max. 60 s @ -30°C
	Sound power level	Motor	≤45 dB (A) @ 150 s running time
Spring return		≤71 dB (A)	
Service life		Min. 60,000 emergency positions	
Position indication		Mechanical	
<b>Safety</b>	Protection class		III Extra low voltage UL Class 2 Supply
	Degree of protection		IP54
			NEMA2, UL Enclosure Type 2
	EMC		CE according to 2004/108/EC
	Certification		Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14 cULus according to UL 60730-1A and UL 60730-2-14 and CAN/CSA E60730-1:02
	Mode of operation		Type 1.AA
	Rated impulse voltage		0.8 kV
	Control pollution degree		3
	Ambient temperature		-30 ... +50°C
	Non-operating temperature		-40 ... +80°C
Ambient humidity		95% r.h., non-condensating	
Maintenance		Maintenance-free	
<b>Dimensions / Weight</b>	Dimensions		See «Dimensions» on page 3
	Weight		Approx. 4.3 kg

Safety notes



- The actuator is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- It may only be installed by suitably trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.
- 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 cable must not be removed from the device.
- When calculating the required torque, the specifications supplied by the damper manufacturers (cross-section, design, installation site), and the air flow conditions must be observed.
- 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 is controlled with a standard signal of DC 0 ... 10 V and 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.

**Simple direct mounting** Simple direct mounting on the damper spindle with a universal spindle clamp, supplied with an anti-rotation strap to prevent the actuator from rotating.

**Spindle stabiliser** The spindle clamp of the spring-return actuator is equipped ex-works with a spindle stabiliser for stabilising the combination of damper, damper spindle and actuator. This is comprised of two plastic support rings and, depending on the installation situation and the spindle diameter, must be left in place or partially or completely removed.

**Long spindle installation:**

- The use of the spindle stabiliser is necessary with long spindle installation with a spindle diameter of 12 to 20 mm.
- The use of the spindle stabiliser is not necessary with long spindle installation with a spindle diameter of 21 to 26.7 mm, and it can be removed.

**Short axis installation:**

- The necessity of the spindle stabiliser does not apply with short spindle installation; it can be removed or – if the length of the spindle permits it – left in the spindle clamp.

For additional information, see the Installation instructions.

**Manual override** Manual operation of the damper with the hand crank, locking in any position with the interlocking switch.

**Adjustable angle of rotation** Adjustable angle of rotation with mechanical end stop.

**High operational reliability** The actuator is overload-proof, requires no limit switches and automatically stops when the end stop is reached.

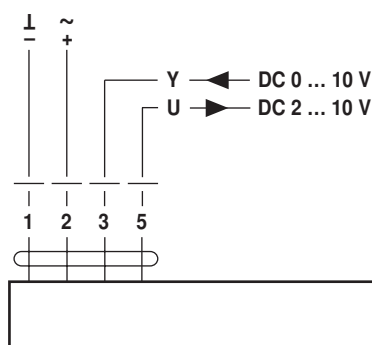
**Important**

The spindle stabiliser must nonetheless be used when the universal mounting bracket is installed on the opposite side of the spindle clamp and with a spindle diameter <20 mm.



Electrical installation

Wiring diagram



**Cable colours:**

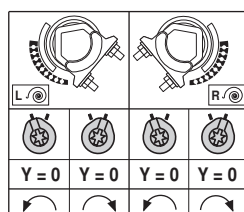
- 1 = black
- 2 = red
- 3 = white
- 5 = orange

**Notes**

- Connect via safety isolation transformer.
- Parallel connection of other actuators possible. Note the performance data.



Direction of rotation

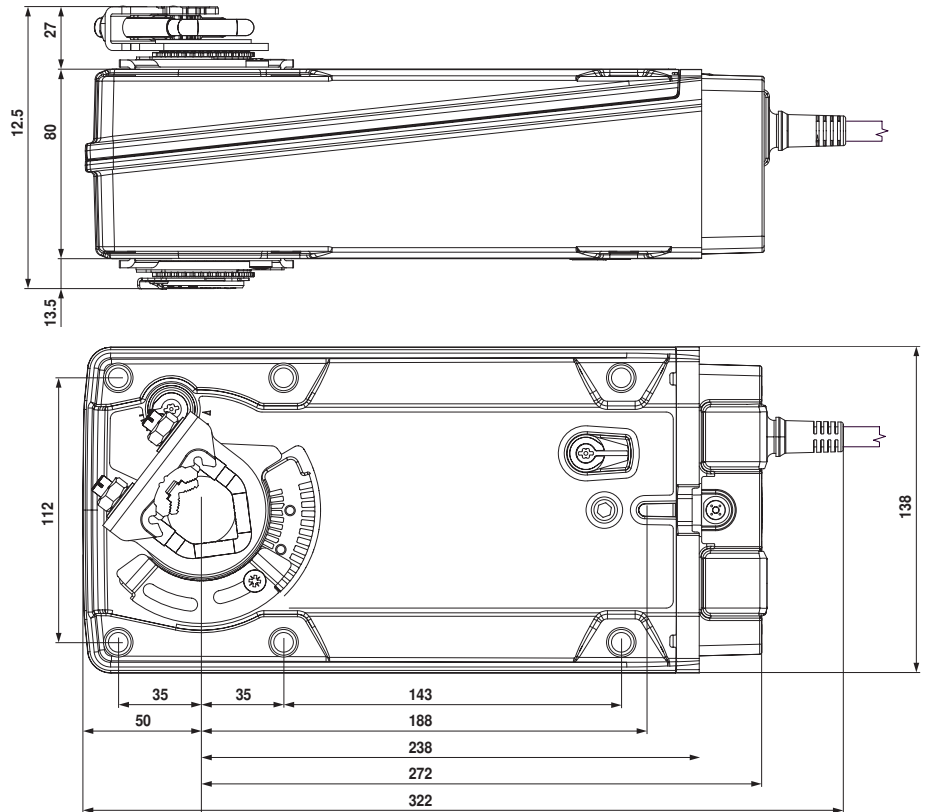


Accessories

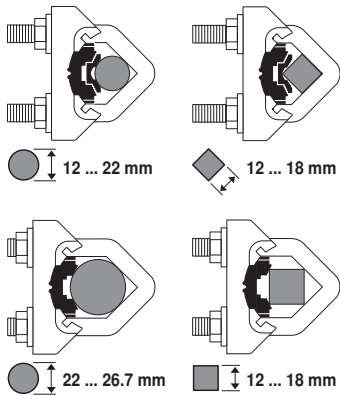
	Description	Data sheet
Electrical accessories	Range controller SBG24	T2 - SBG24
	Position sensor SGA24, SGE24 and SGF24	T2 - SG..24
	Digital position indication ZAD24	T2 - ZAD24
Mechanical accessories	Position indicator IND-EFB	
	Clamp K9-2	
	Crank arm KH-EFB	
	Crank arm adaptor kit ZG-EFB	

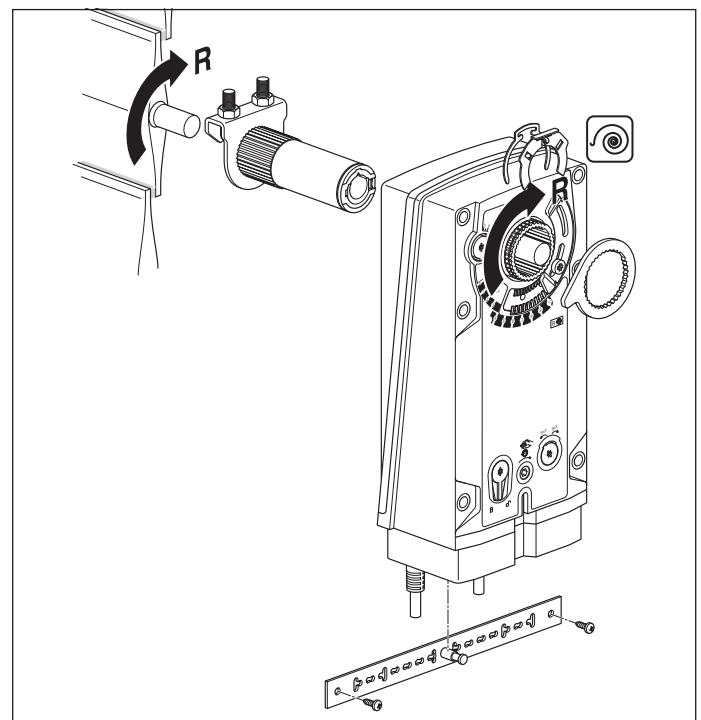
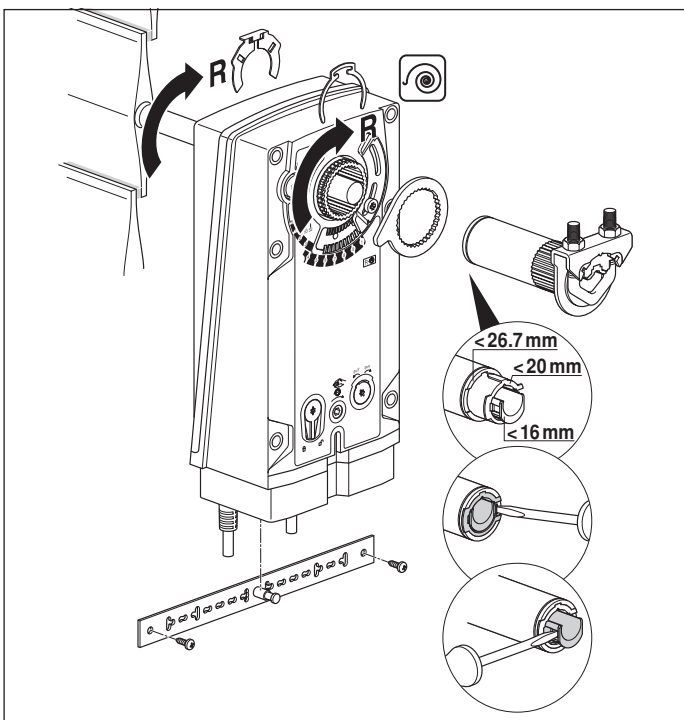
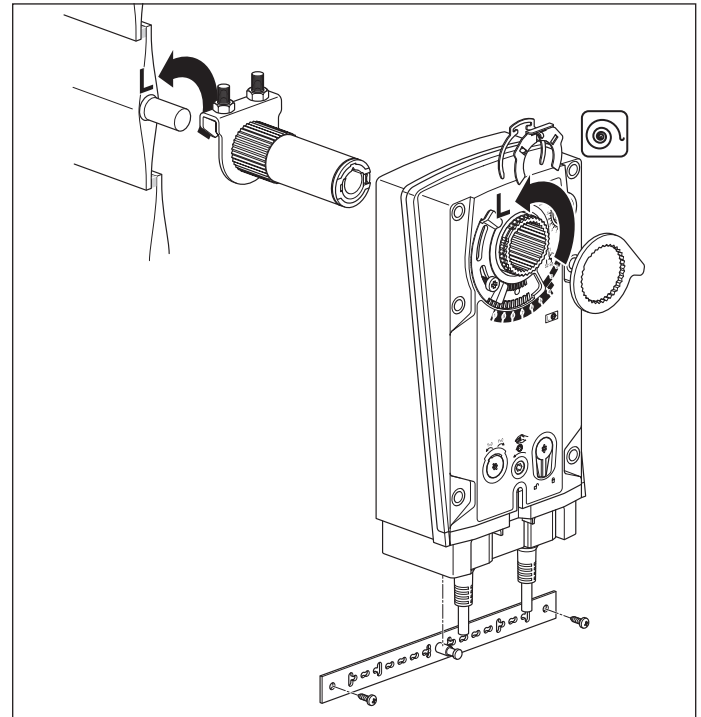
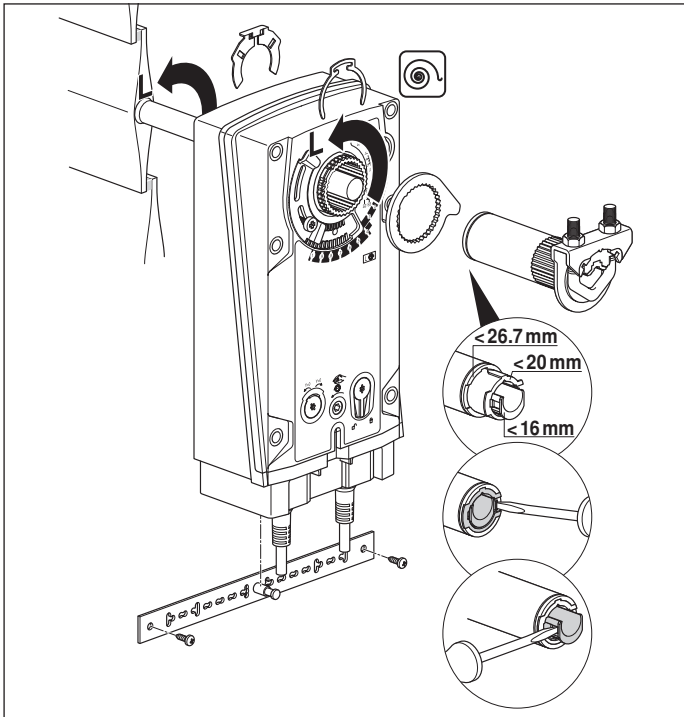
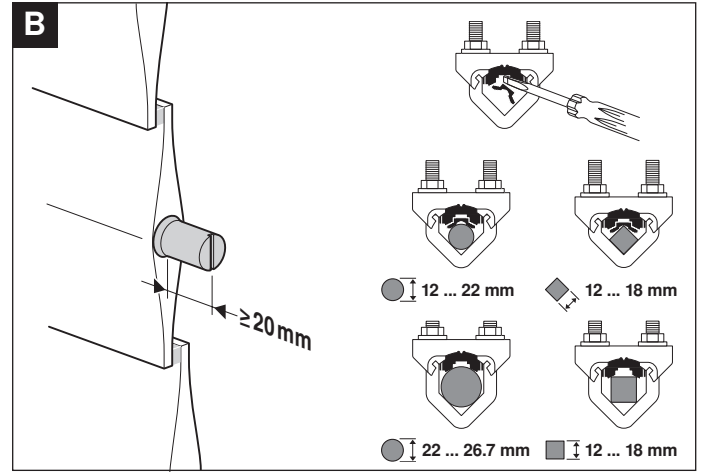
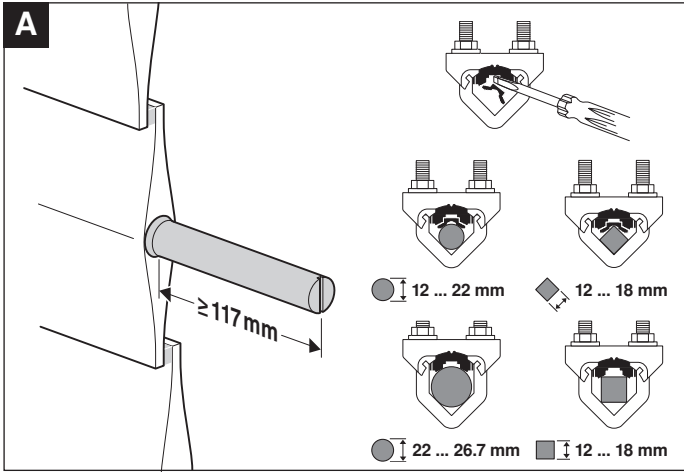
Dimensions [mm]

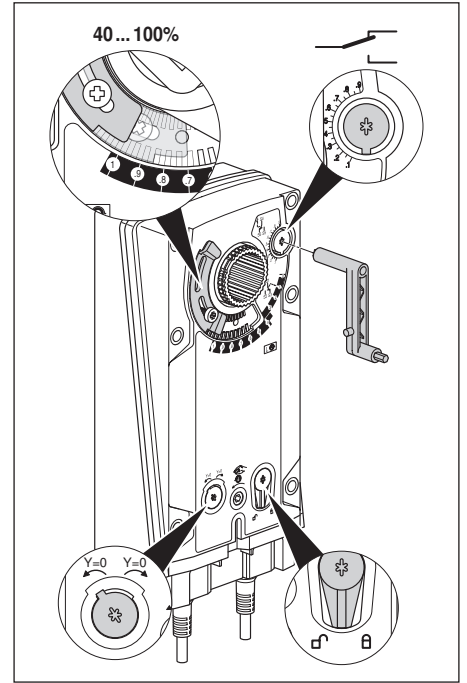
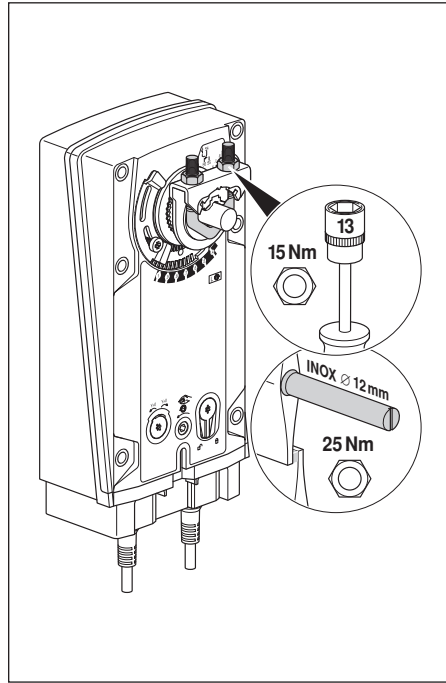
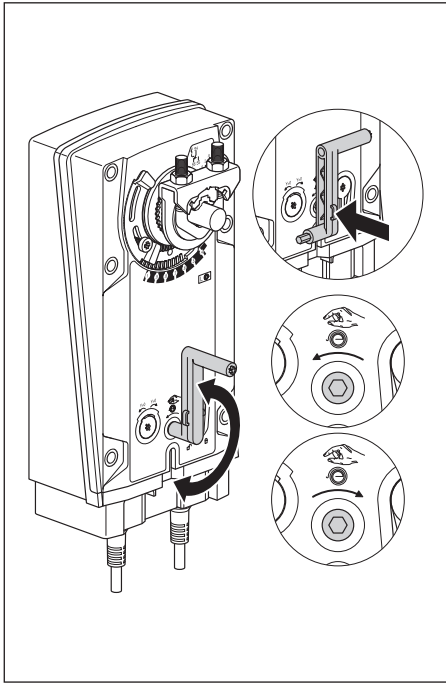
Dimensional drawings

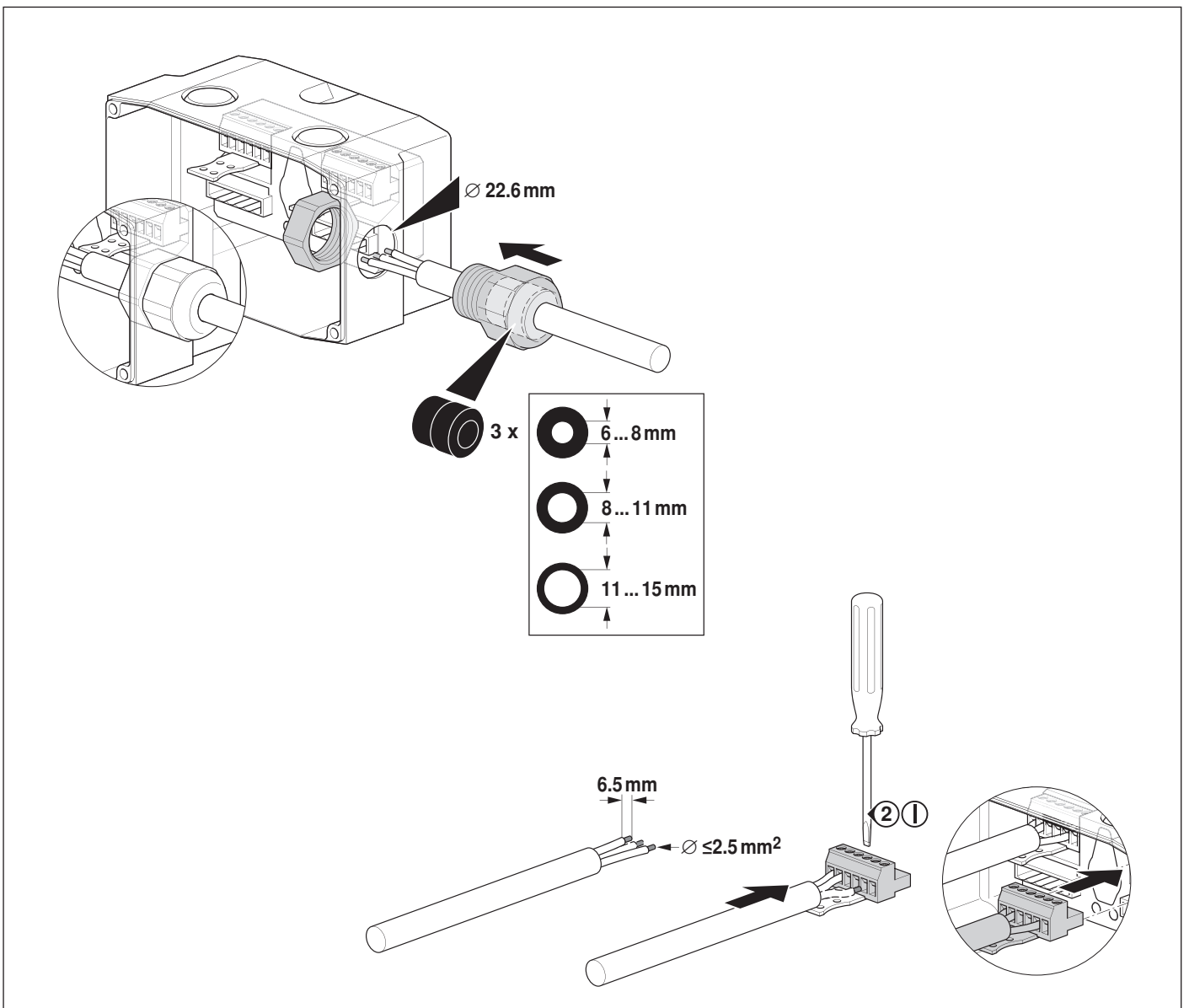
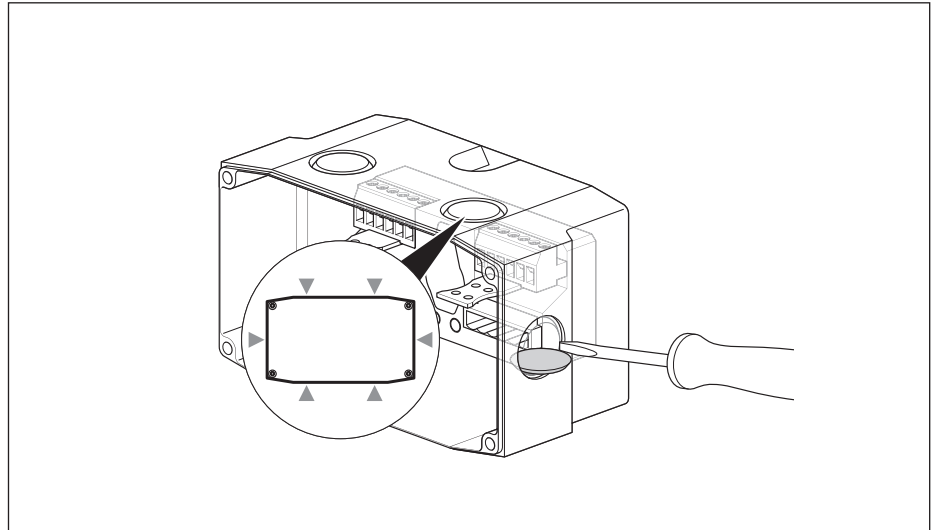
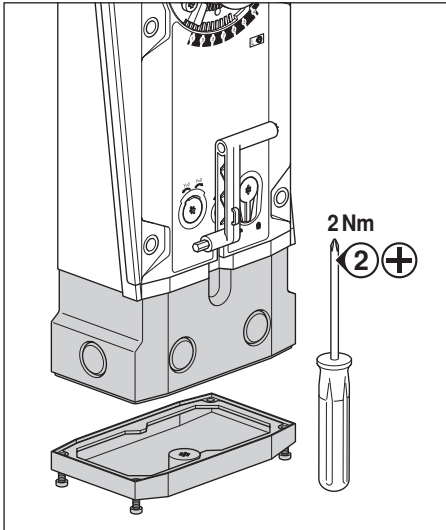


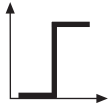
Damper spindle	Length	●	■	◆
	≥117	12 ... 26,7	>12	<25,2
	≥20	12 ... 26,7	>12	<25,2



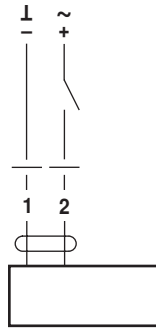




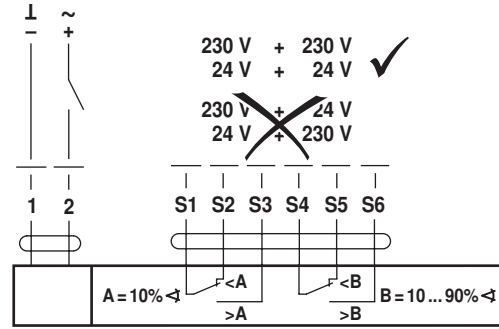




AC 24 V / DC 24 V



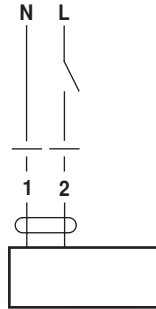
EF24A



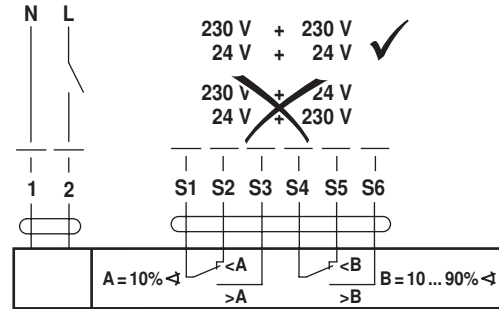
EF24A-S2

230 V + 230 V  
24 V + 24 V ✓  
~~230 V + 24 V~~  
~~24 V + 230 V~~

AC 100 ... 240 V ⚠

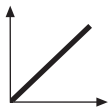


EF230A

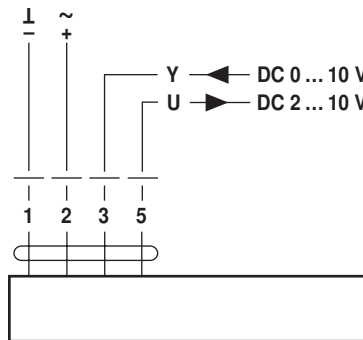


EF230A-S2

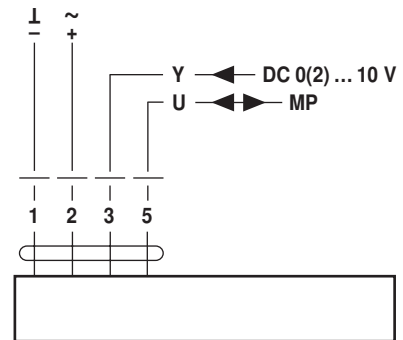
230 V + 230 V  
24 V + 24 V ✓  
~~230 V + 24 V~~  
~~24 V + 230 V~~



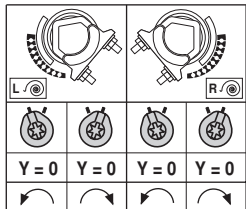
AC 24 V / DC 24 V



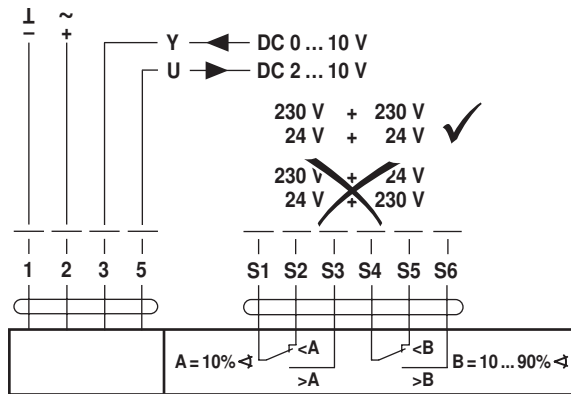
EF24A-SR  
EF24A-MF



EF24A-MP



EF24A-SR  
EF24A-SR-S2



EF24A-SR-S2

230 V + 230 V  
24 V + 24 V ✓  
~~230 V + 24 V~~  
~~24 V + 230 V~~