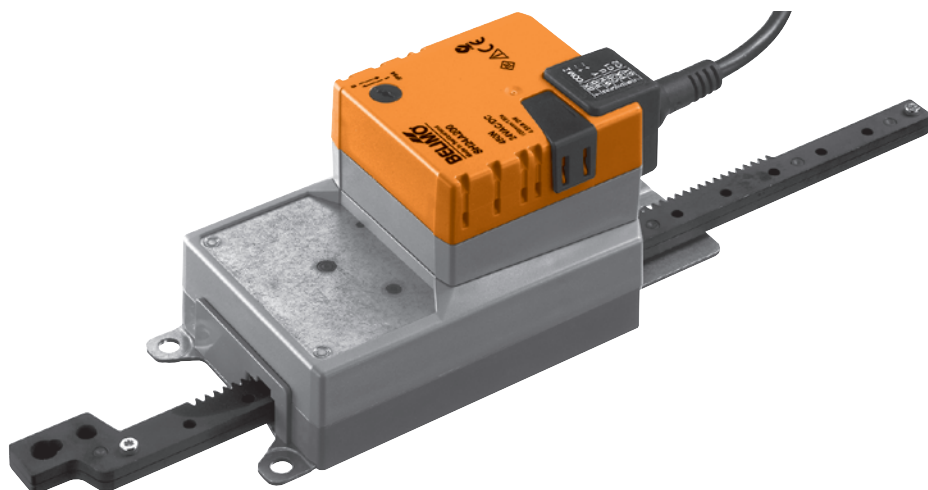


Linear actuators for adjusting air dampers and slide valves in ventilation and air conditioning systems in buildings

- For air dampers up to approx. 3 m²
- Actuating force 450 N
- Nominal voltage AC/DC 24 V
- Control: Open-close or 3-point
- Length of stroke up to max. 100, 200 or 300 mm, adjustable in steps of 20 mm



Overview of types

Type	Stroke	Weight
SH24A100	Up to max. 100 mm, adjustable in steps of 20 mm	1.06 kg
SH24A200	Up to max. 200 mm, adjustable in steps of 20 mm	1.13 kg
SH24A300	Up to max. 300 mm, adjustable in steps of 20 mm	1.2 kg

Technical data

Electrical data	Nominal voltage	AC 24 V, 50/60 Hz / DC 24 V
	Power supply range	AC/DC 19.2 ... 28.8 V
	Power consumption	In operation 2 W @ nominal force At rest 0.2 W For wire sizing 4 VA
	Connection	Cable 1 m, 3 x 0.75 mm ²
Functional data	Actuating force	450 N @ nominal voltage
	Stroke	See «Overview of types»
	Direction of stroke	Reversible with switch 1† resp. 0‡
	Running time	150 s / 100 mm
	Sound power level	<50 dB (A)
Safety	Protection class	III Safety extra-low voltage / UL Class 2 Supply
	Degree of protection	IP54 in any mounting position NEMA 2, UL Enclosure Type 2
	EMC	CE according to 2004/108/EC
	Certification	cULus according to UL 60730-1A and UL 60730-2-14 and CAN/CSA E60730-1:02 Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14
	Mode of operation	Type 1
	Rated impulse voltage	0.8 kV
	Control pollution degree	3
	Ambient temperature range	-30 ... +50 °C
	Non-operating temperature	-40 ... +80 °C
	Ambient humidity range	95% r.H., non-condensating
	Maintenance	Maintenance-free
Dimensions / Weight	Dimensions	See «Dimensions» on page 3
	Weight	See «Overview of types»

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 rotary supports and coupling pieces available as accessories must always be used if lateral forces are likely. In addition, the actuator must not be tightly bolted to the application. It must remain movable via the rotary support (refer to «Assembly notes»).
- If the linear actuator is exposed to severely contaminated atmosphere, appropriate precautions must be taken on the system side. Excessive deposits of dust, soot etc. can prevent the gear rack from being extended and retracted correctly.
- If not installed horizontally, the gear disengagement pushbutton may only be actuated when there is no pressure on the gear rod.
- To calculate the actuating force required for air dampers and slide valves, the specifications supplied by the damper manufacturers concerning the surface, cross section, design, installation site and the air flow conditions must be observed.
- If a rotary support and/or coupling piece is used, losses in the actuation force losses are to be expected.
- 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

Manual override	Manual override with push-button possible (the gear is disengaged for as long as the button is pressed or remains locked).
Adjustable stroke	The stroke of the gear rack can be adjusted on both sides in increments of 20 mm by means of mechanical end stops.
High functional reliability	The actuator is overload-proof, requires no limit switches and automatically stops when the end stop is reached.

Accessories

	Description	Data sheet
Mechanical accessories	Rotary support to compensate lateral forces Z-DS1	T2 - Z-SH..A..
	Coupling piece Z-KS1	T2 - Z-SH..A..
	Mechanical limiter set Z-AS1	T2 - Z-SH..A..

Electrical installation

Wiring diagrams

Notes

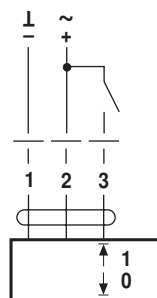
- Connect via safety isolating transformer.
- Other actuators can be connected in parallel. Please note the performance data!



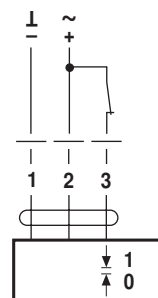
Direction of stroke



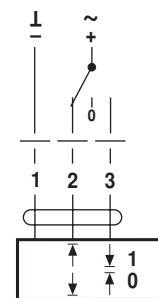
Open-close control



Connection 3 takes priority



3-point control

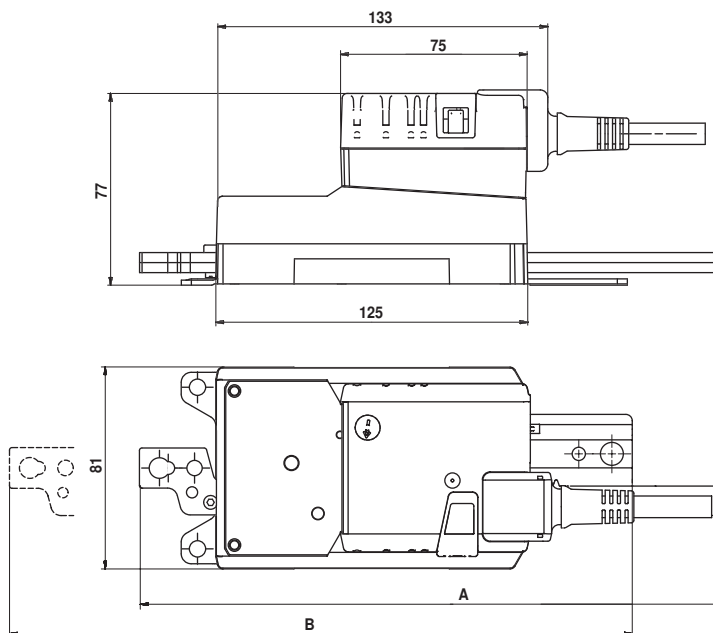


Cable colours:

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

Dimensions [mm]

Dimensional drawings



Type	Max. Stroke	A	B
SH24A100	100	233.5	294.7
SH24A200	200	333.5	394.7
SH24A300	300	433.5	494.7

Assembly notes

Application without transverse forces

The linear actuator is screwed directly to the housing at three points. Afterwards, the head of the gear rod is fastened to the moving part of the ventilation application (e.g. damper or slide valve).

Application with transverse forces

The coupling piece with the internal thread (Z-KS1) is connected to the head of the gear rod.

The rotary support (Z-DS1) is screwed to the ventilation application.

Afterwards, the linear actuator is screwed to the previously mounted rotary support with the enclosed screw.

Afterwards, the coupling piece, which is mounted to the head of the gear rod, is attached to the moving part of the ventilation application (e.g. damper or slide valve).

The transverse forces can be compensated for to a certain limit with the rotary support and/or coupling piece. The maximum permissible swivel angle of the rotary support and coupling piece is 10° , laterally and upwards.

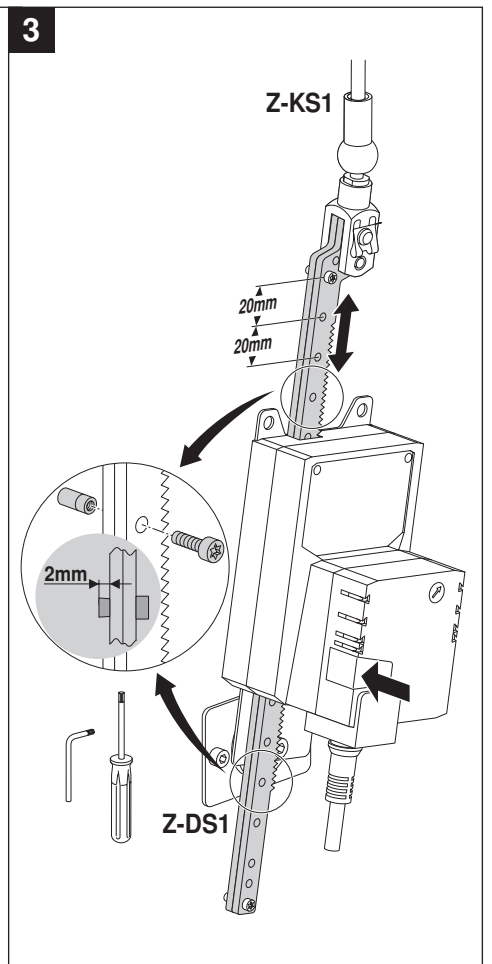
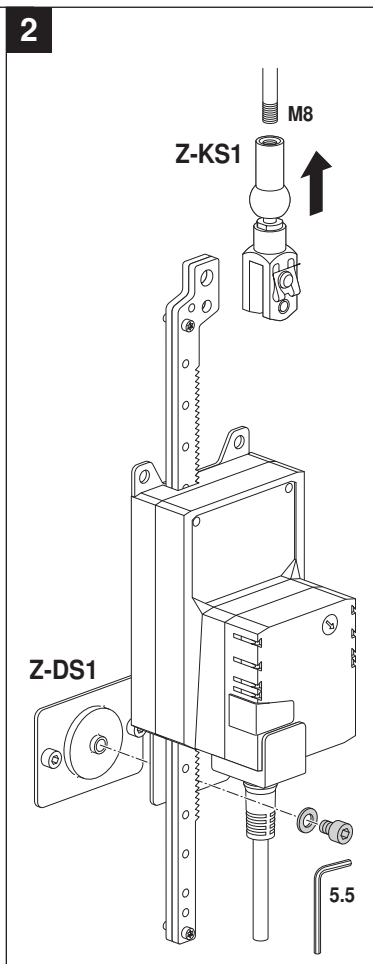
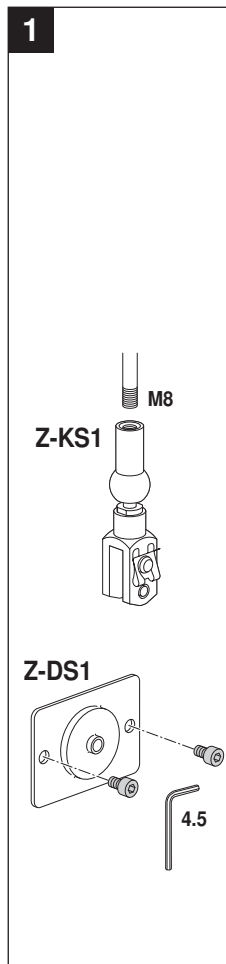
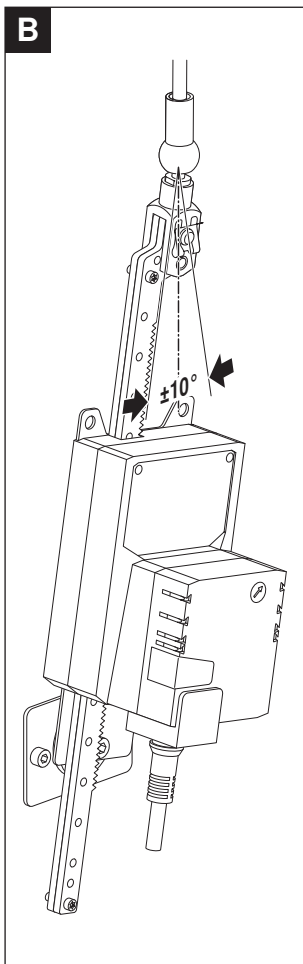
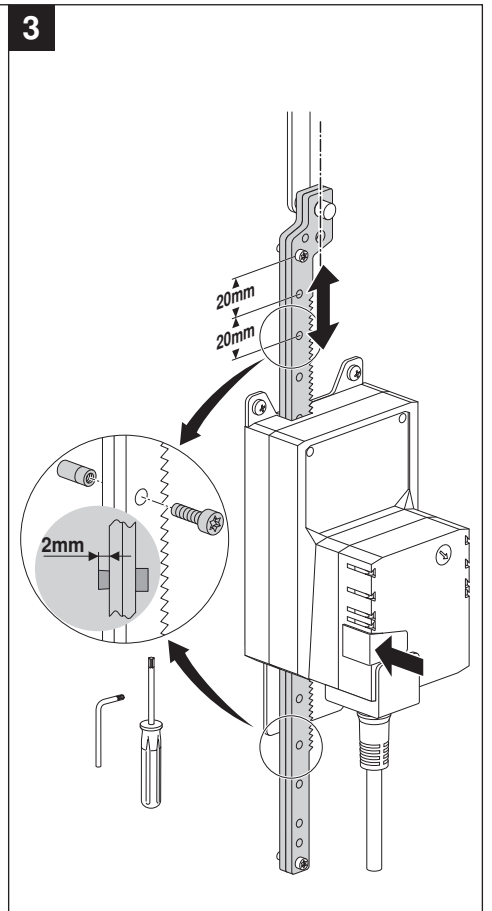
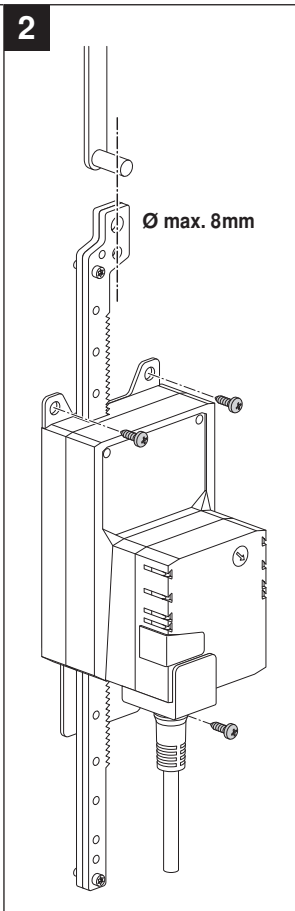
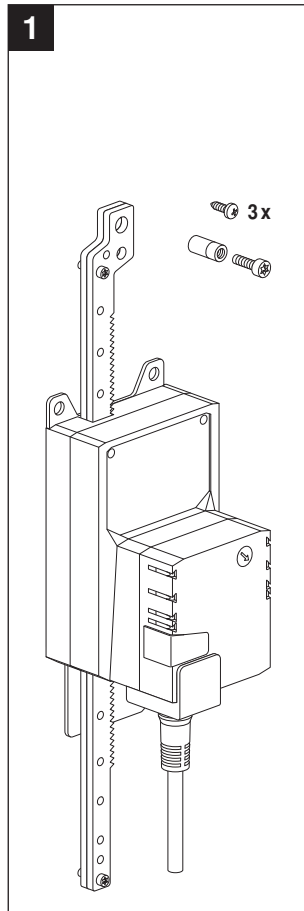
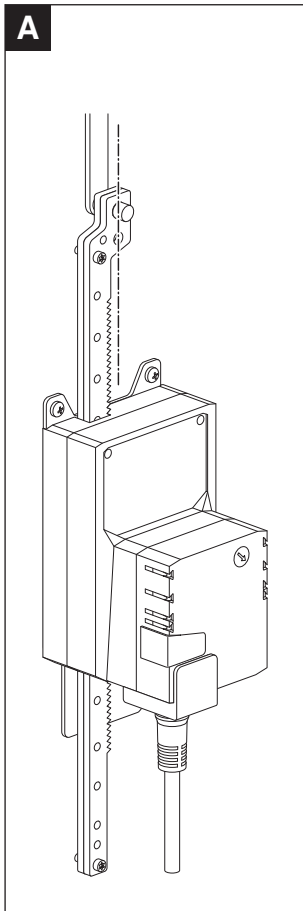
Caution

If a rotary support and/or coupling piece is used, losses in the actuation force are to be expected.

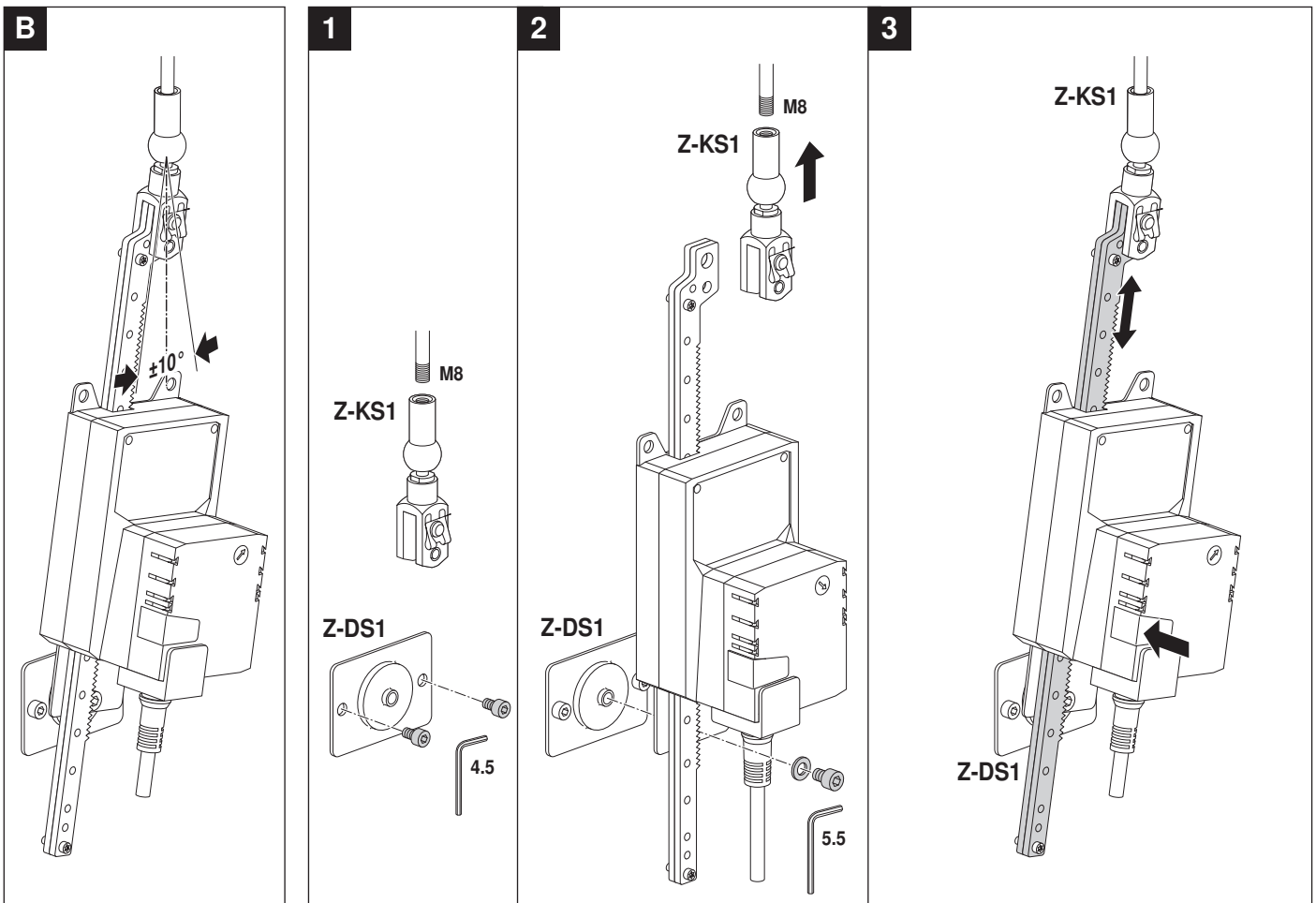
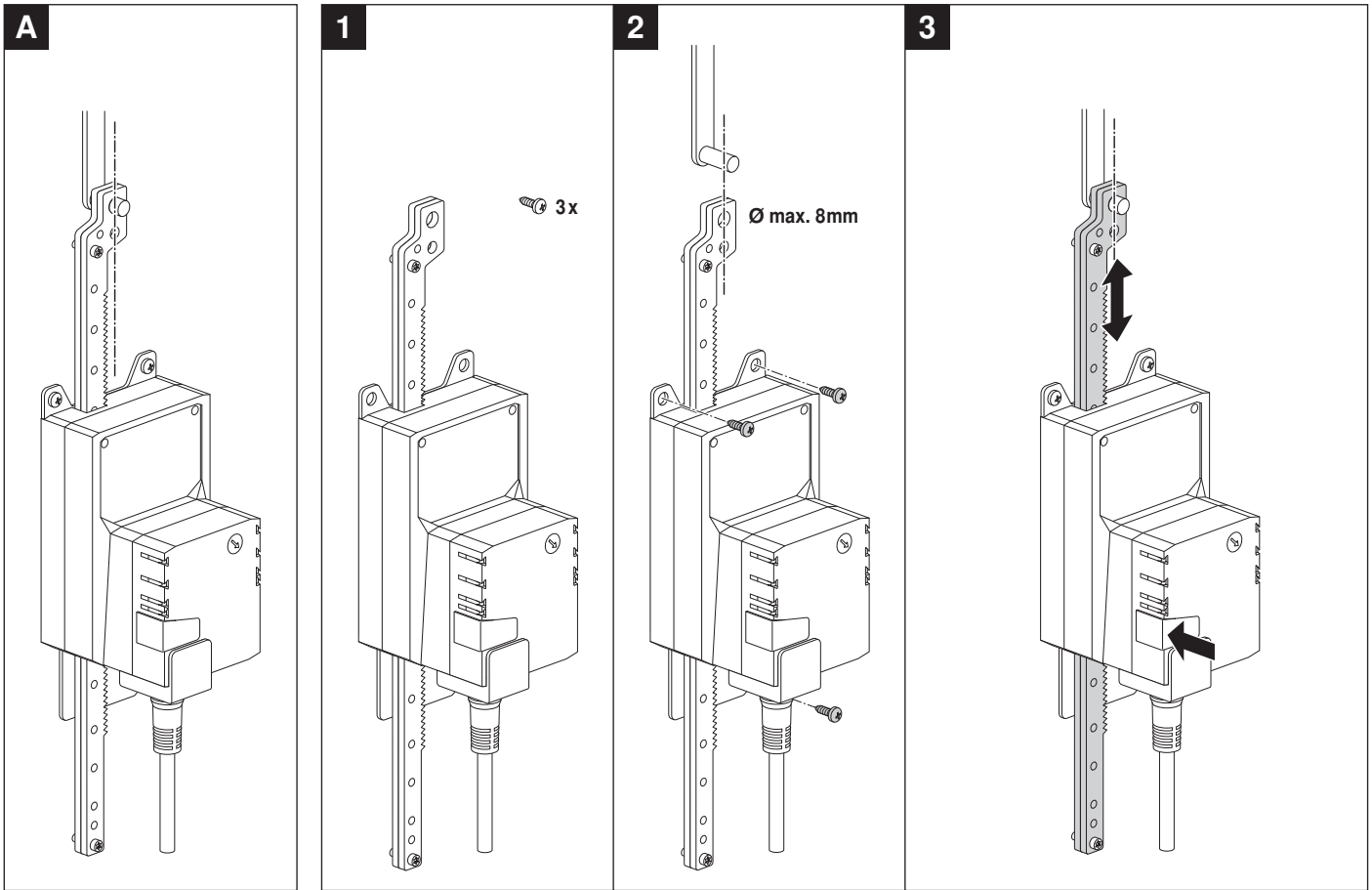
**Stroke limitation**

If the stroke limitations are used on the gear rod, the mechanical working range can be exploited from an extension length of 20 mm.

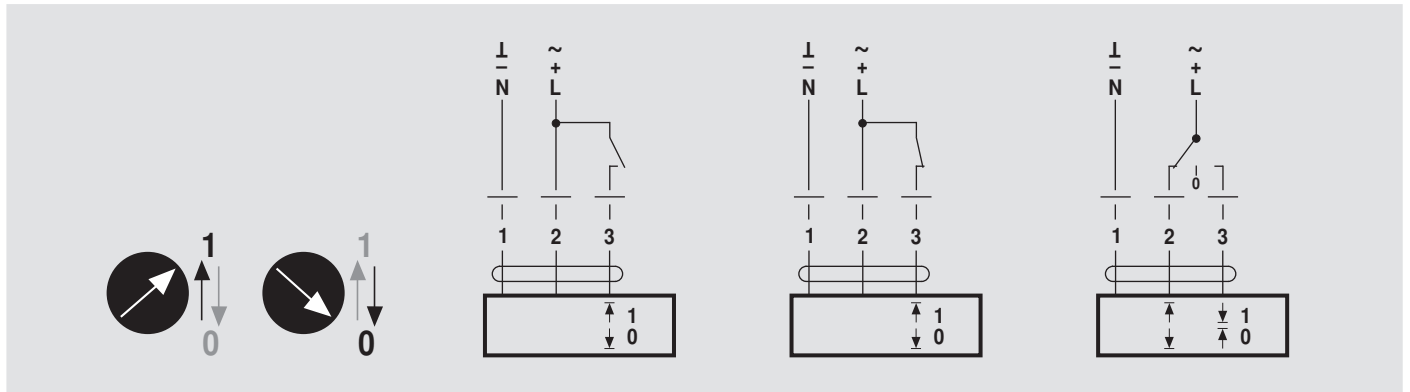
SH..A. / SH24A-MF.. / SH24A-MP..



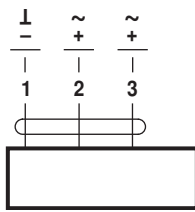
SH24A-SR. / SH230ASR..



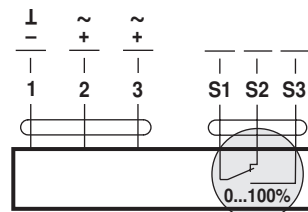
SH..A.. / SH24A-SR.. / SH24A-MF.. / SH24A-MP.. / SH230ASR..



AC 24 V / DC 24 V

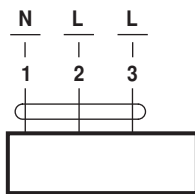


SH24A..

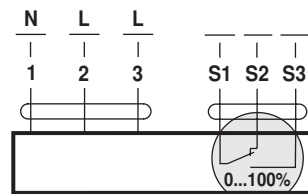


SH24A-S..

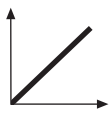
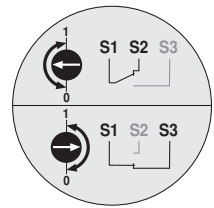
AC 100 ... 240 V



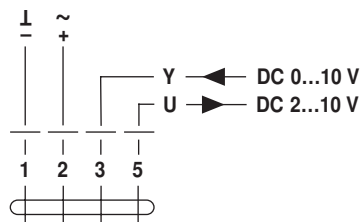
SH230A..



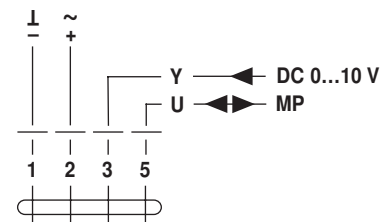
SH230A-S..



AC 24 V / DC 24 V



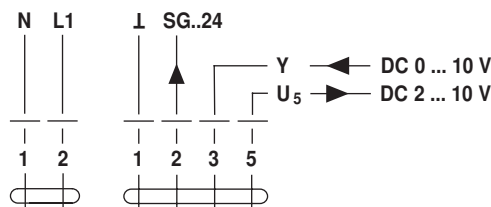
SH24A-SR..
SH24A-MF..



SH24A-MP..

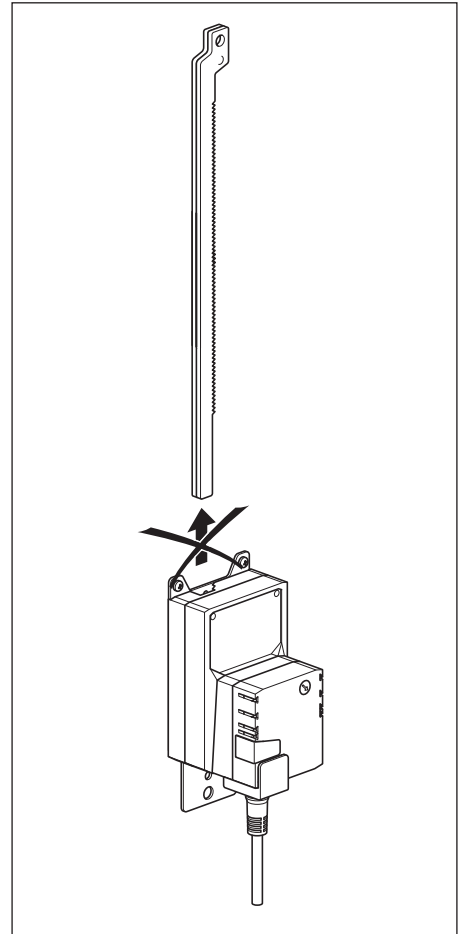
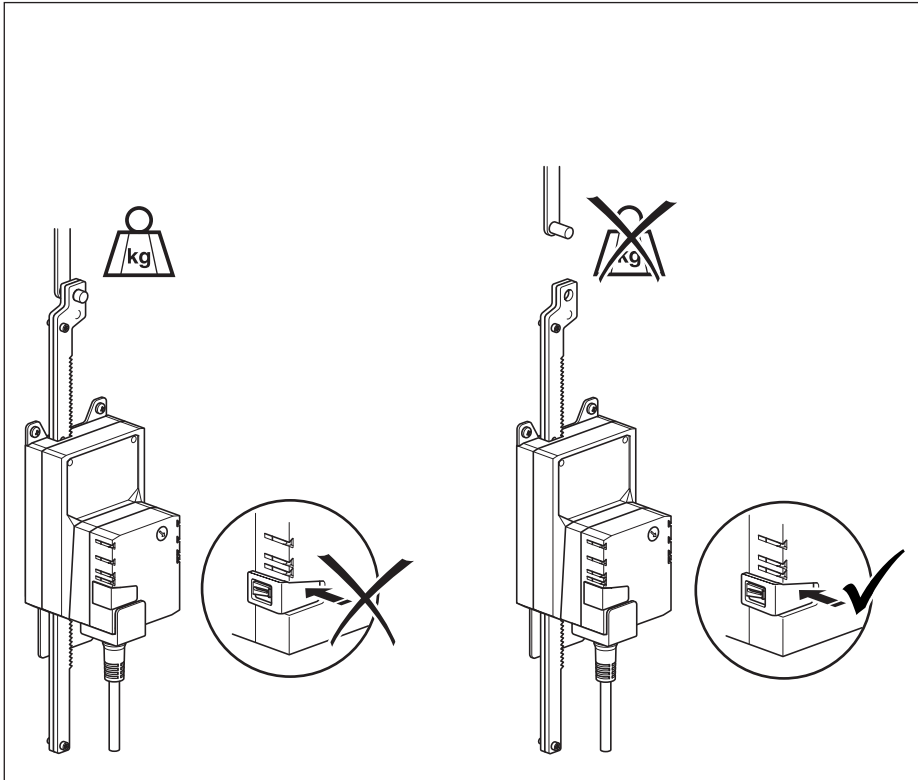


AC 230 V



SH230ASR..





SH..A..TP

