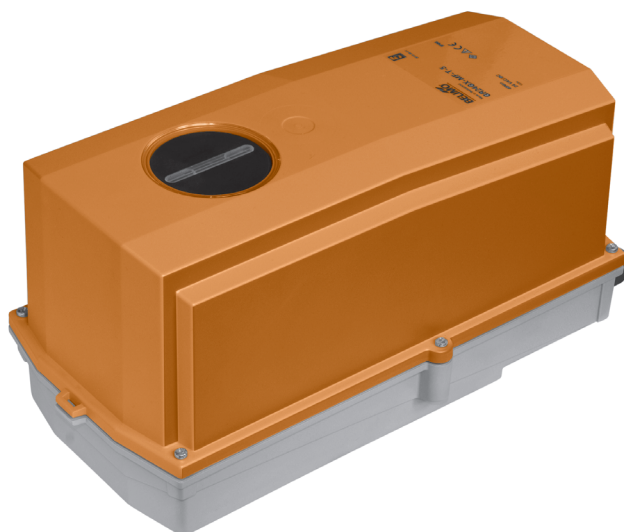


SuperCap rotary actuator with emergency setting function and extended functionalities in the IP66 protective housing for adjusting air dampers in ventilation and air-conditioning systems for building services installations and in laboratories

- For air dampers up to approx. 8 m²
- Torque 40 Nm
- Nominal voltage AC/DC 24 V
- Control: Open-close
- Design life SuperCaps 15 years

Optimum weather protection (for use in ambient temperatures up to -40 °C, there is a separate actuator available with built-in heater ex works)



Technical data

Electrical data	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	11 W @ nominal torque
		At rest	3 W
		For wire sizing	21 VA (I _{max} 20 A @ 5 ms)
	Connection	Cable 1 m, 3 x 0.75 mm ² (halogen-free)	
Parallel operation	Yes (note the performance data)		
Functional data	Torque	≥40 Nm	
	Inhibiting torque	≥40 Nm	
	Emergency setting position (POP)	0 ... 100%, adjustable (POP rotary button) of maximum angle of rotation	
	Bridging time with voltage interruption	2 s	
	Position accuracy	±5%	
	Direction of rotation	Motor	Reversible with switch ↻ / ↻
		Emergency setting position	Reversible with switch 0 ... 100%
	Direction of rotation	At switch position 1 ↻ and 0 ↻, respectively	
	Manual override	Gearing latch disengaged with push button	
	Angle of rotation	Max. 95°↔, can be limited at both ends with adjustable mechanical end stops	
	Running time	Motor	150 s / 90°↔
		Emergency setting position	35 s @ 0 ... 50 °C
	Sound power level	Motor	≤53 dB (A) @ 90 s running time ≤52 dB (A) @ 150 s running time
		Emergency setting position	≤61 dB (A)
Position indication	Mechanical, pluggable		
Safety	Protection class	III Safety extra-low voltage UL Class 2 Supply	
	Degree of protection	IP66 NEMA 4, UL Enclosure Type 4	
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	4		
Ambient temperature	-30 ... +50 °C (actuator with built-in heater -40 ... +50 °C)		
Non-operating temperature	-40 ... +80 °C		
Ambient humidity	100% r.h.		
Maintenance	Maintenance-free		

Terms and abbreviations POP = Power off position / emergency setting position
PF = Power fail delay time / bridging time

Technical data
(continued)
Dimensions / Weight

Dimensions

See «Dimensions» on page 5

Weight

Approx. 4.8 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 installation.
- The cover of the protective housing may be opened for adjustment and servicing. When it is closed afterwards, the housing must seal tight (see installation instructions).
- The device on the inside may only be opened up in the factory. It does not contain any parts that can be replaced or repaired by the user.
- The cable must not be removed from the device on the inside.
- 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.
- The actuator is not designed for applications where chemical influences (gases, fluids) are present or for utilisation in corrosive environments in general.
- The materials used may be subjected to external influences (temperature, pressure, constructional fixture, effect of chemical substances, etc.), which cannot be simulated in laboratory tests or field trials.
In case of doubt, we definitely recommend that you carry out a test. This information does not imply any legal entitlement. Belimo will not be held liable and will provide no warranty.
- For UL (NEMA) Type 4 applications flexible metallic cable conduits or threaded cable conduits of equal value are to be used.
- The actuator may not be used in plenum applications (e.g. suspended ceilings or raised floors).

Product features
Fields of application

The actuator is particularly suitable for utilisation in outdoor applications and is protected against the following weather conditions:

- UV radiation
- rain / snow
- dirt / dust
- humidity
- Changing atmosphere / frequent and severe temperature fluctuations (recommendation: use the actuator with integrated factory-installed heating which can be ordered separately to prevent internal condensation)

Mode of operation

The actuator moves the air damper to the desired operating position at the same time as the integrated capacitors are loaded (open-closed). Interrupting the supply voltage causes the air damper to be rotated to the selected emergency setting position (POP) by means of stored electrical energy.

Pre-charging time (start up)

The capacitor actuators require a pre-charging time. This time is used for charging the capacitors up to a usable voltage level. This ensures that, in the event of an electricity interruption, the actuator can be moved at any time from its current position into the preset emergency setting position (POP).

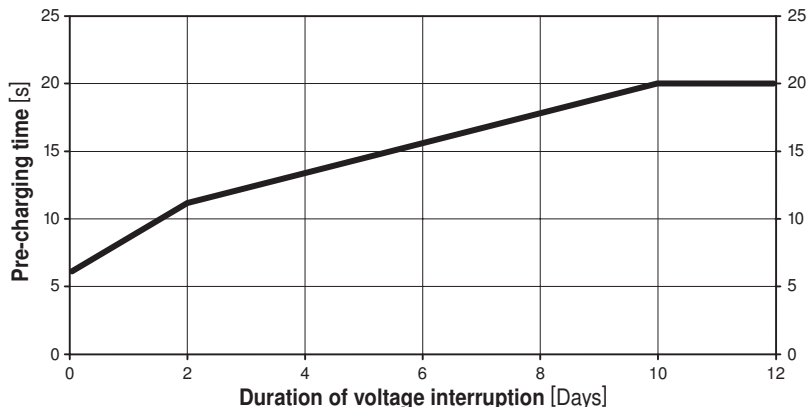
The duration of the pre-charging time depends mainly on how long the power was interrupted.

Product features

(continued)

Typical pre-charging times

Pre-charging time [s]	Duration of voltage interruption [Days]				
	0	1	2	7	≥10
	6	9	11	16	20



Delivery condition (capacitors)

The actuator is completely discharged after delivery from the factory, which is why the actuator requires approximately 20 s pre-charging time before initial commissioning in order to bring the capacitors up to the required voltage level.

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.

Manual override

Manual override with push button possible (the gear is disengaged for as long as the button remains pressed down).

High operational reliability

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

Home position / Start

The spindle clamp of the actuator is set ex-works to 0° ↺ eingestellt. After the supply voltage has been applied, the actuator moves into the selected position.

Direction of rotation switch

When actuated, the direction of rotation switch changes the running direction in normal operation. The direction of rotation switch has no influence on the emergency setting position (POP) which has been set.

Emergency setting position (POP) rotary button

The «Emergency setting position» rotary button can be used to adjust the desired emergency setting position (POP). The POP range is in reference to the maximum angle of rotation of the actuator.

The rotary button is always in reference to an angle of rotation of 95° ↺ and does not take into consideration any end stops which were set retroactively.

In the event of a voltage interruption, the actuator will move into the selected emergency setting position, taking into account the bridging time (PF) of 2 s which was set ex-works.

Accessories


	Description	Data sheet
Electrical accessories	Auxiliary switch S..A..	T2 - S..A..
	Feedback potentiometer P..A..	T2 - P..A..
	Heating with mechanical hygrostat HH24-MG *	T2/T5 - HH24-MG
	Heating with mechanical thermostat HT24-MG *	T2/T5 - HT24-MG

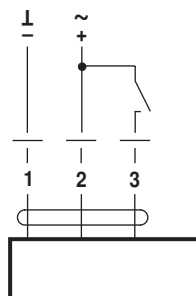
* only available fitted in separate actuator

Electrical installation

Wiring diagram

Notes

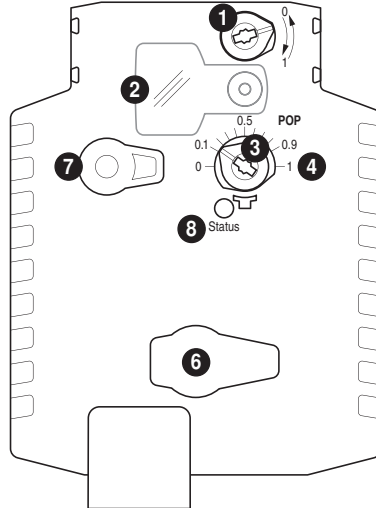
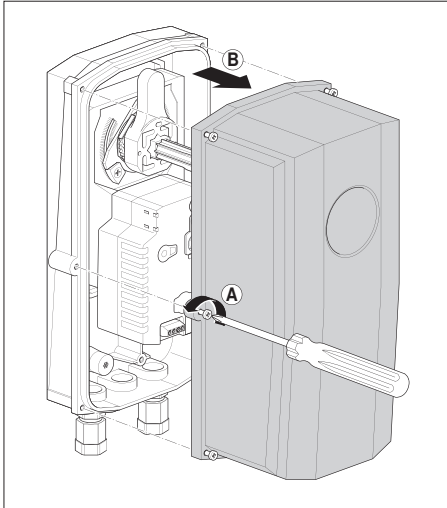
- Connection via safety isolation transformer. 
- Parallel connection of other actuators possible. Note the performance data.



Cable colours:

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

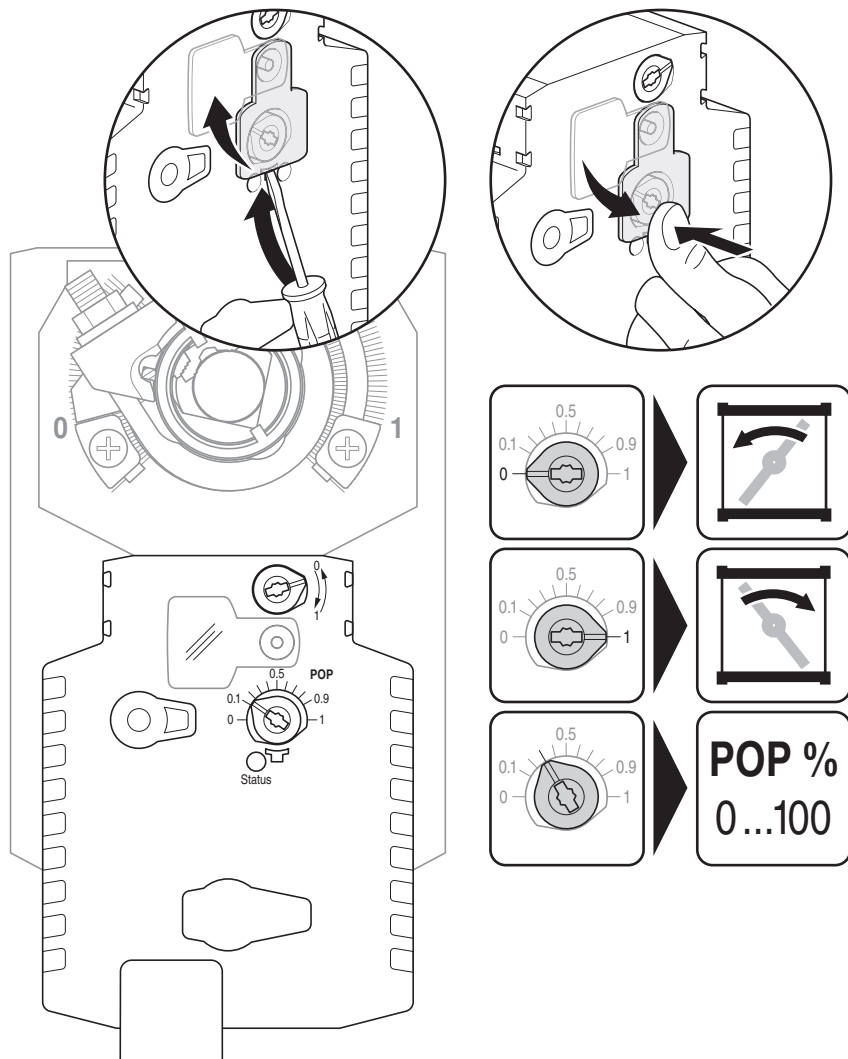
Operating controls and indicators



- 1 Direction of rotation switch
- 2 Cover, POP button
- 3 POP button
- 4 Scale for manual adjustment
- 6 (no function)
- 7 Disengagement button

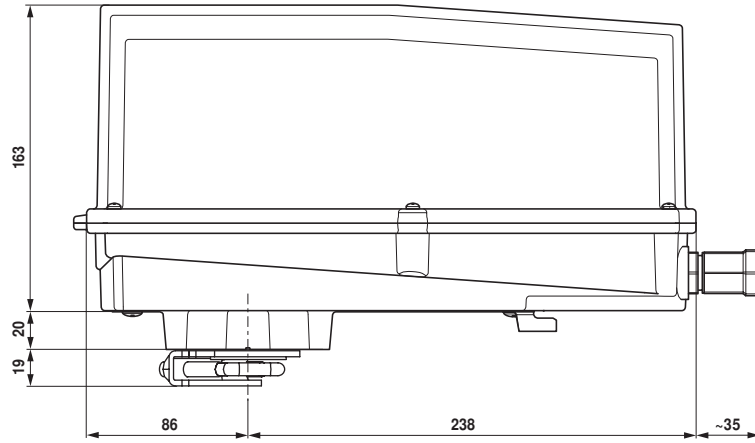
LED display	Meaning / function
8 green	
Illuminated	Operation OK / without fault
Blinking	POP function active
Off	- Not in operation - Pre-charging time SuperCap - Fault SuperCap

Setting the POP Power off position

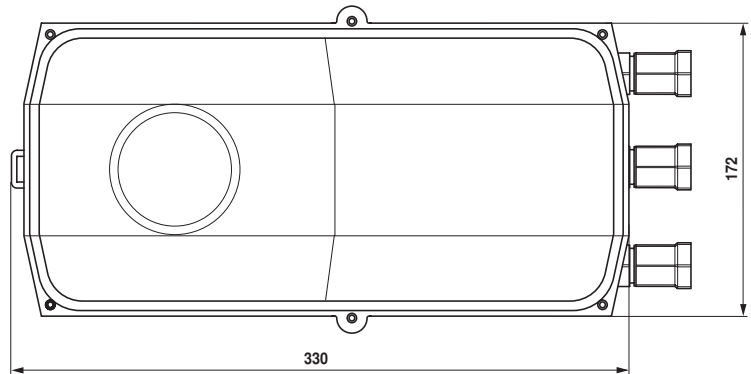
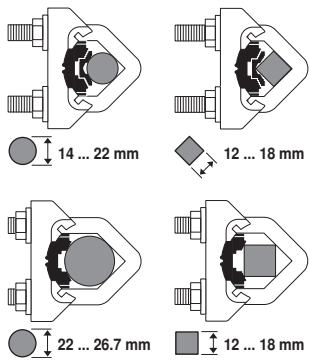


Dimensions [mm]

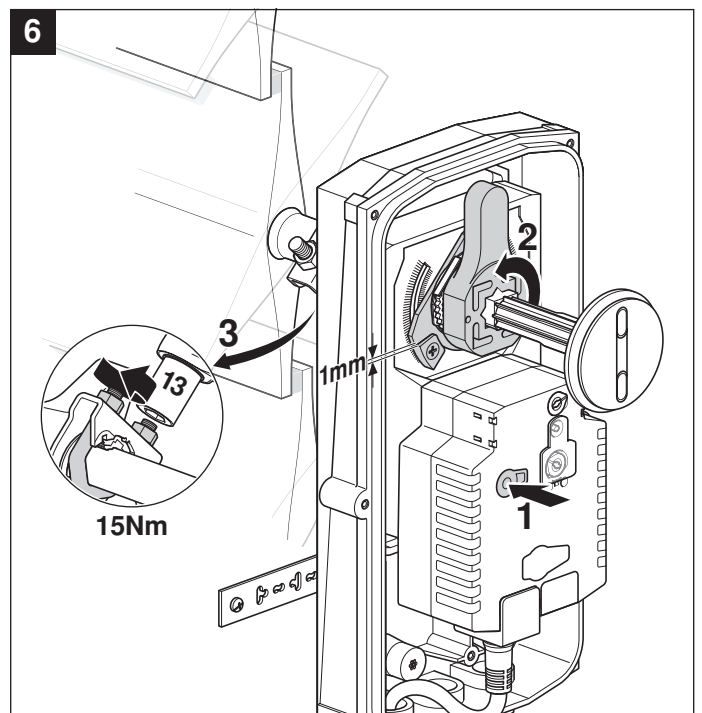
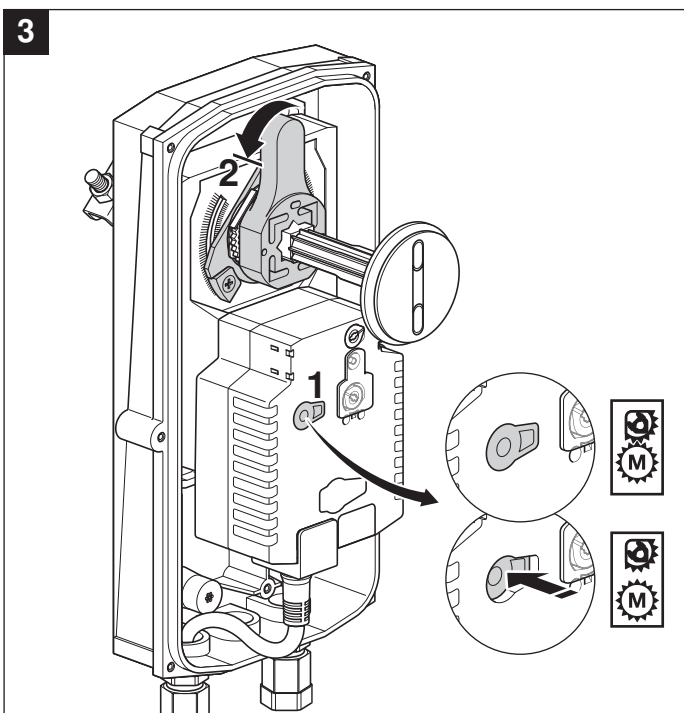
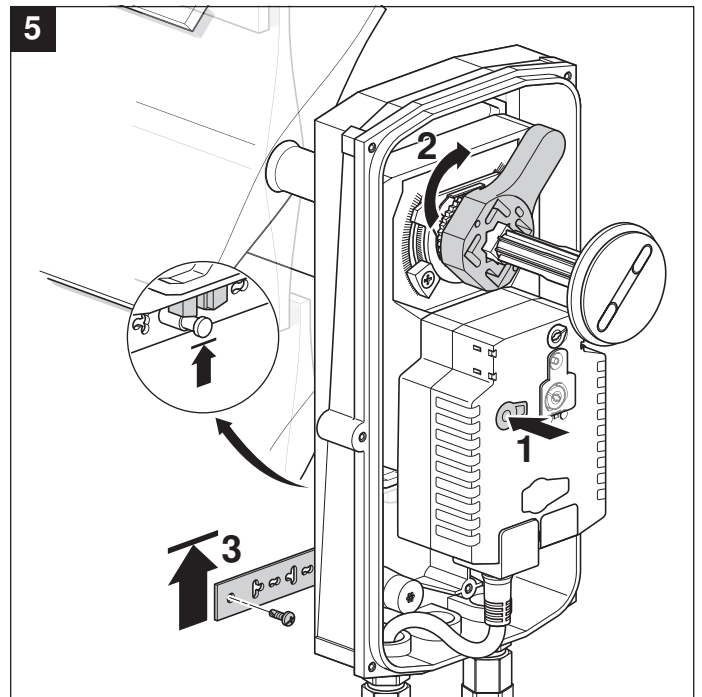
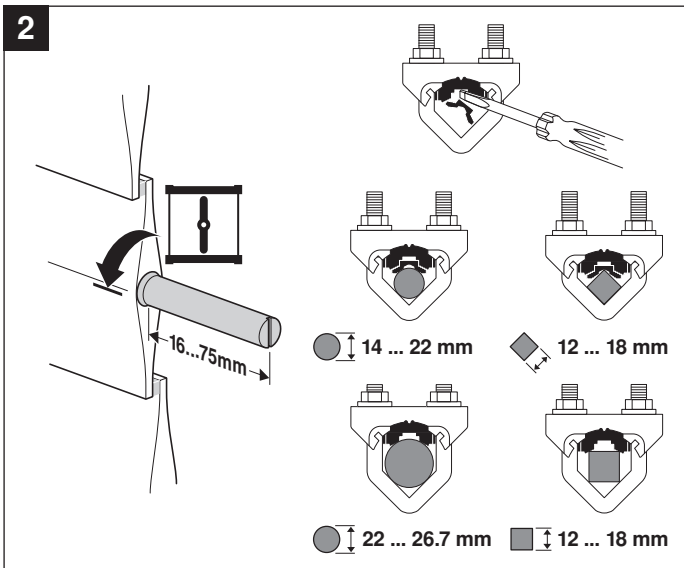
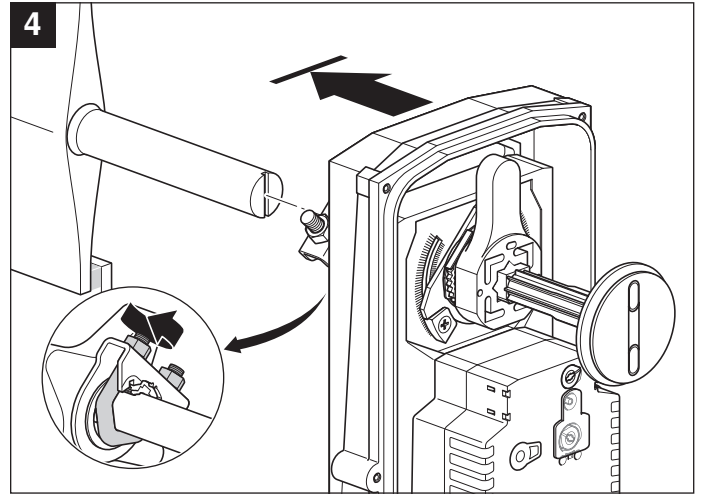
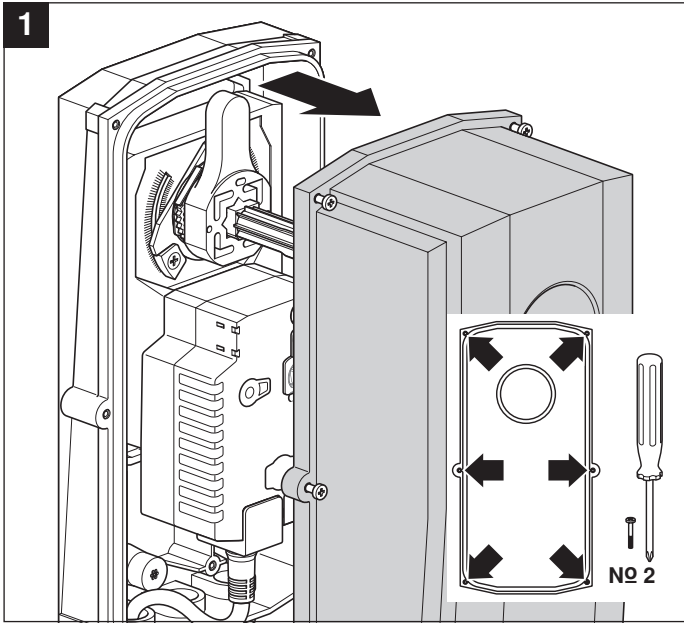
Dimensional drawings

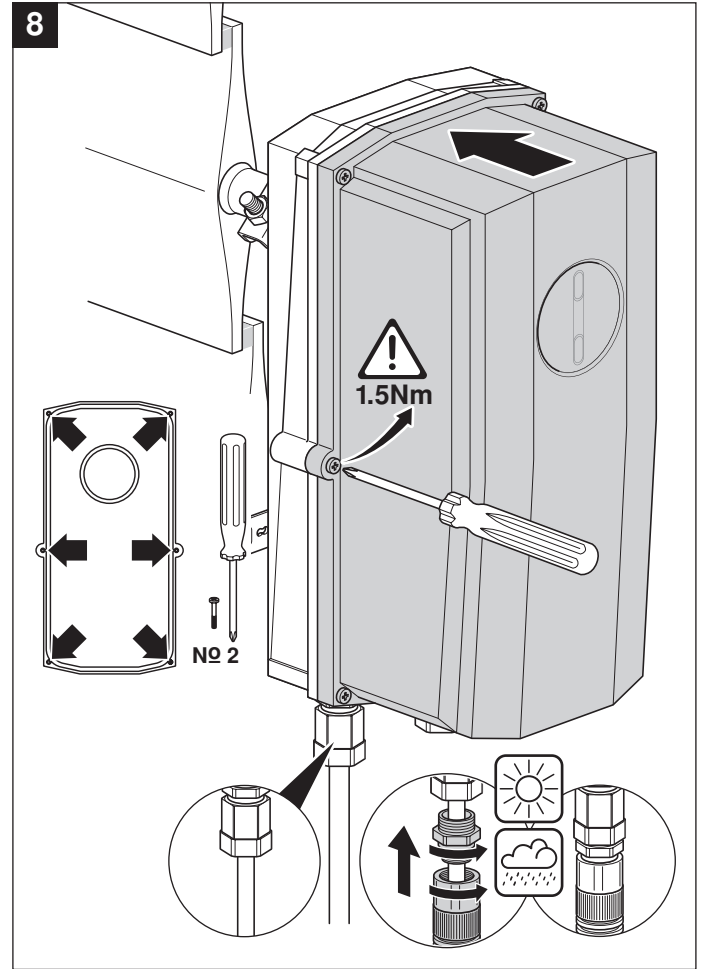
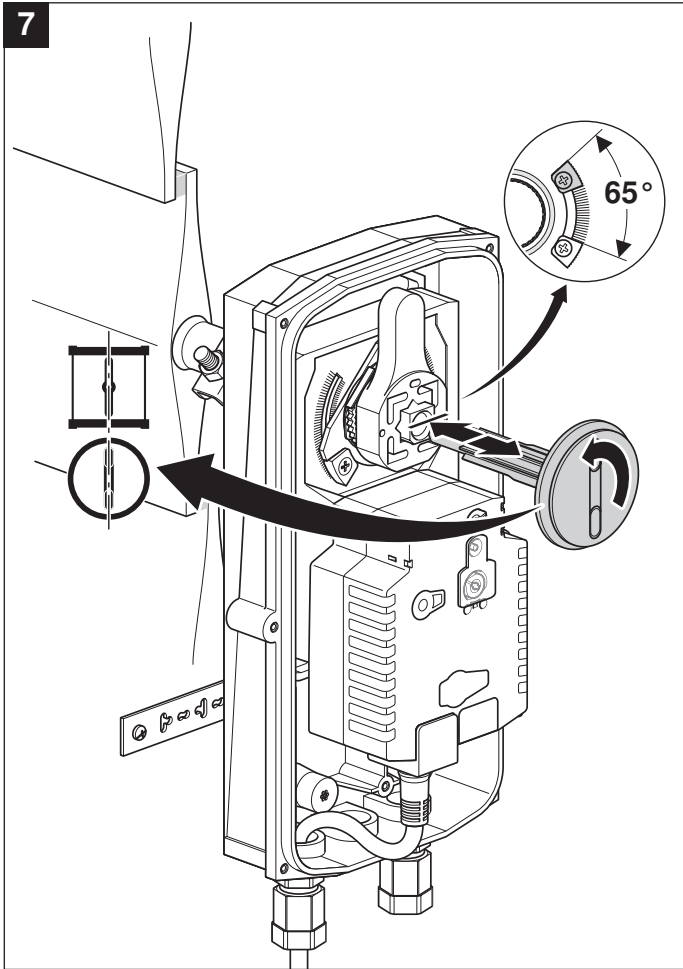


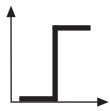
Damper spindle	Length			
	16 ... 75	14 ... 26.7	≥12	≤25.5



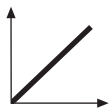
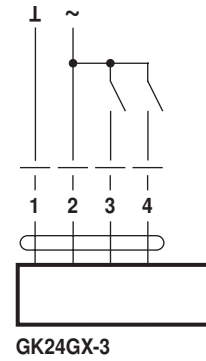
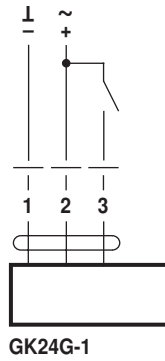
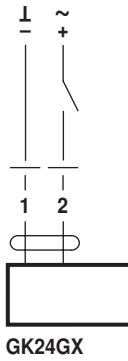
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AC 24 V / DC 24 V



AC 24 V / DC 24 V

