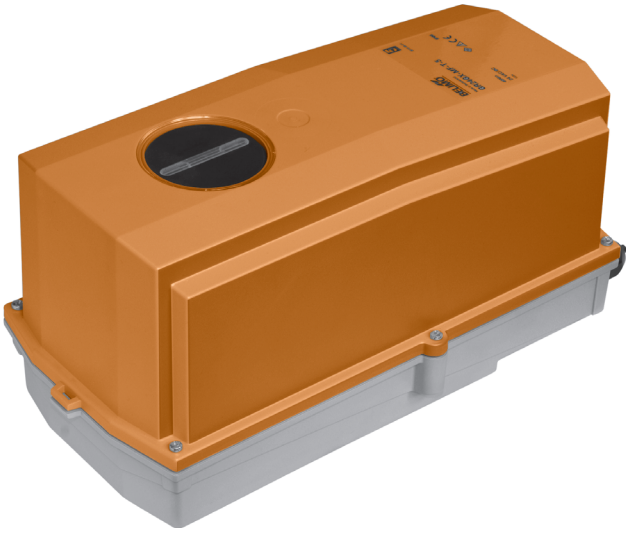
Damper actuator in the IP66 protective housing for adjusting air dampers in industrial plants and in technical building installations

- **For air dampers up to approx. 3.2 m²**
- **Torque 16 Nm**
- **Nominal voltage AC/DC 24 V**
- **Control: Open-close (not made for 3-point applications)**
- **Running time 7 s**

Optimum weather protection for outdoor applications



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	15 W @ nominal torque
		At rest	2 W
		For wire sizing	26 VA (I_{max} 20 A @ 5 ms)
	Connection		Cable 1 m, 3 x 0.75 mm²
Functional data	Torque (nominal torque)		Min. 16 Nm @ nominal voltage
	Direction of rotation		Reversible with switch 0 ↶ resp. 1 ↷
	Manual override		Gearing latch disengaged with pushbutton, can be locked
	Angle of rotation		Max. 95°∢, can be limited at both ends with adjustable mechanical end stops
	Angle of rotation limiting		min. 30°∢
	Running time		7 s / 90°∢
	Automatic adjustment of operating range to match the mechanical angle of rotation		Manual triggering of the adaption by pressing the «Adaption» button
	Sound power level		52 dB (A)
	Position indication		Mechanical, pluggable
	Negative torque	⚠	≤50% from nominal torque (Caution: can only be used with restrictions. Please contact your Belimo representative.)
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
	Rated impulse voltage		0.8 kV
	Control pollution degree		4
	Ambient temperature		–30 ... +40°C (no restrictions)
		⚠	+40 ... +50°C (Caution: can only be used with restrictions. Please contact your Belimo representative.)
	Non-operating temperature		–40 ... +80°C
	Ambient humidity		100% r.h.
	Maintenance		Maintenance-free
Dimensions / Weight	Dimensions		See «Dimensions» on page 4
	Weight		Approx. 4.7 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.**
- **Adaptation is necessary when the system is commissioned and after each adjustment of the angle (press the adaptation push-button)**
- **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 *)

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 pushbutton possible (the gear is disengaged for as long as the button is pressed or remains locked).

Adjustable angle of rotation

Adjustable angle of rotation with mechanical end stops.
A minimum permissible angle of rotation of 30° must be allowed for.
The housing cover must be removed to set the angle of rotation.

High functional reliability

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

Home position

The first time the supply voltage is switched on, i.e. during initial startup, the actuator carries out an adaptation. After pressing the «gear disengagement» pushbutton, the actuator moves to the home position at the end stop.

Pos. Direction of rotation		Home position	
0 / 1	0	ccw	Left stop
	1	cw	Right stop

The actuator then moves into the position defined by the control signal.

* in development

Product features

(Continued)

Adaption and synchronisation

During adaptation, the upper and lower spindle end stop is recorded and deposited in the actuator. Detection of the mechanical end stops enables a gentle approach to the end positions and thus protects the actuator mechanism.
During synchronisation, the actuator moves to the home position for angle referencing. This ensures correct position regulation.

Accessories

Electrical accessories

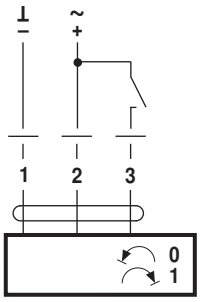
Description	Data sheet
Auxiliary switch S..A..	T2 - S..A..
Feedback potentiometer P..A..	T2 - P..A..
Heating with mechanical hygrostat *	
Heating with adjustable thermostat *	

* in development

Electrical installation

Wiring diagram

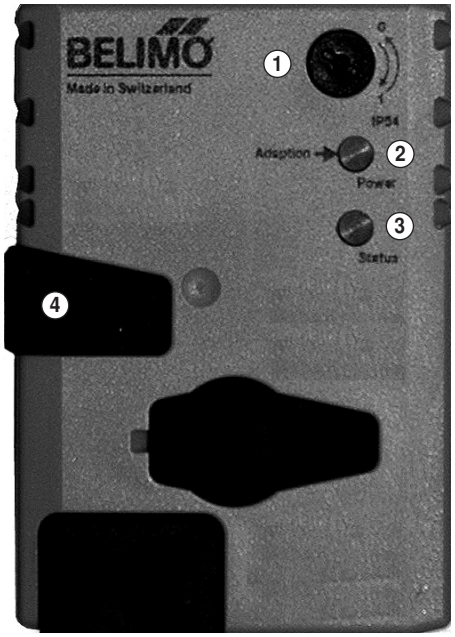
Note
- Connect via safety isolation transformer.
- Parallel connection of other actuators possible. Note performance data for supply.



Direction of rotation

Cable colours:
1 = black
2 = red
3 = white

Operating controls and indicators



① Direction of rotation switch
Switching over: Direction of rotation changes

② Push-button and green LED display
Off: No voltage supply or fault
On: In operation
Press button: Switches on angle of rotation adaptation followed by standard operation

③ Push-button and yellow LED display
Off: Standard operation
On: Adaptation or synchronising process active
Press button: No function

④ Gear disengagement switch
Press button: Gear disengaged, motor stops, manual override possible
Release button: Gear engaged, synchronisation starts, followed by standard operation

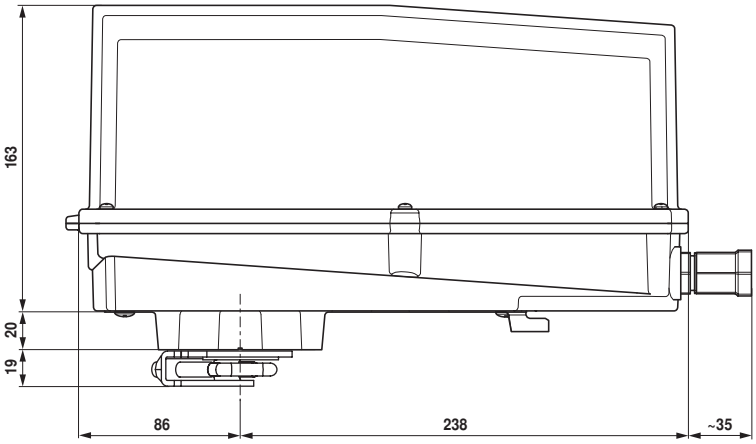
Check voltage supply connection

a) ② Off and ③ On
b) ② Blinking and ③ Blinking

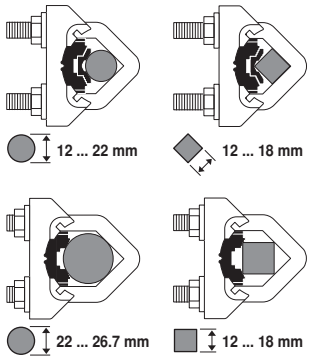
} Check the supply connections. Possibly ⊥ and ~ are swapped over.

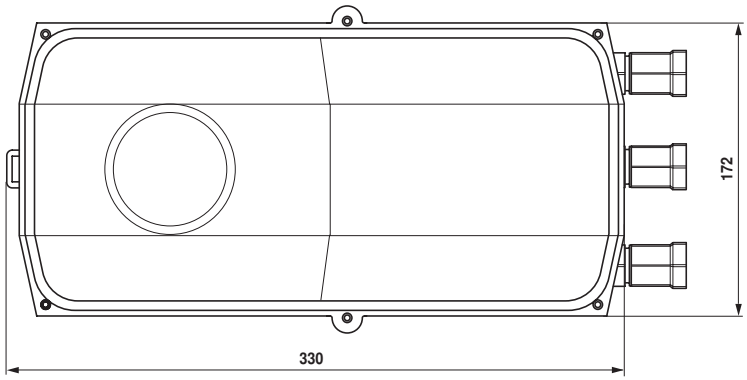
Dimensions [mm]

Dimensional drawings



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





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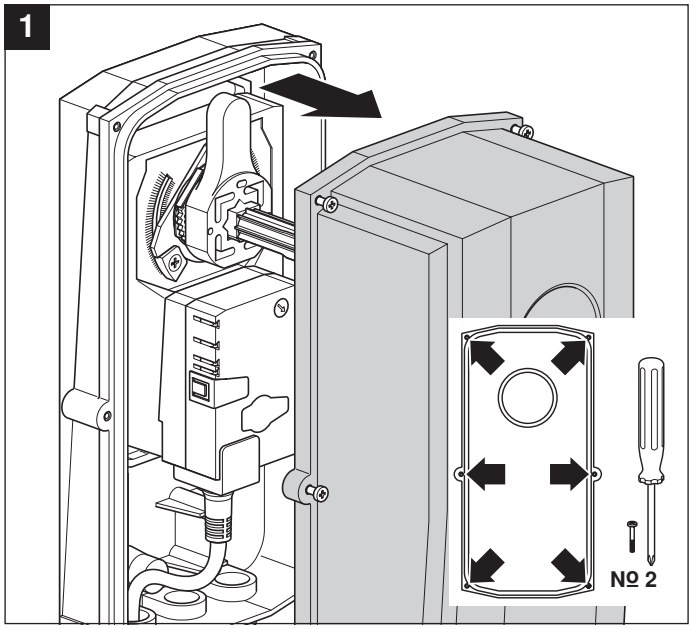

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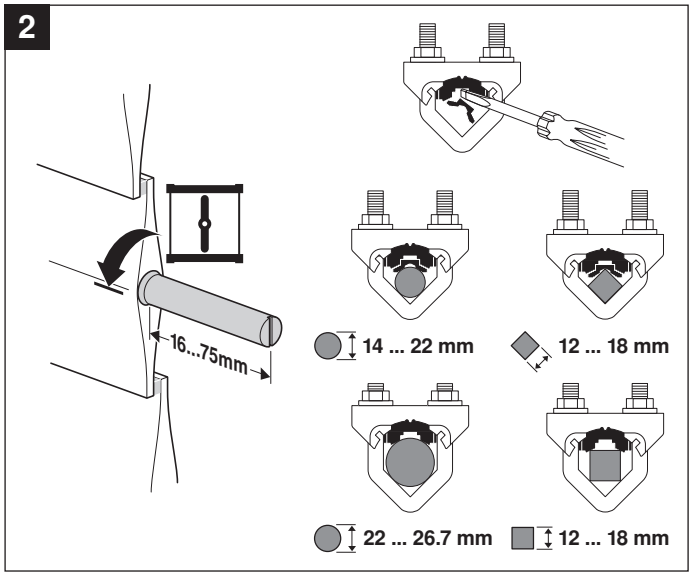

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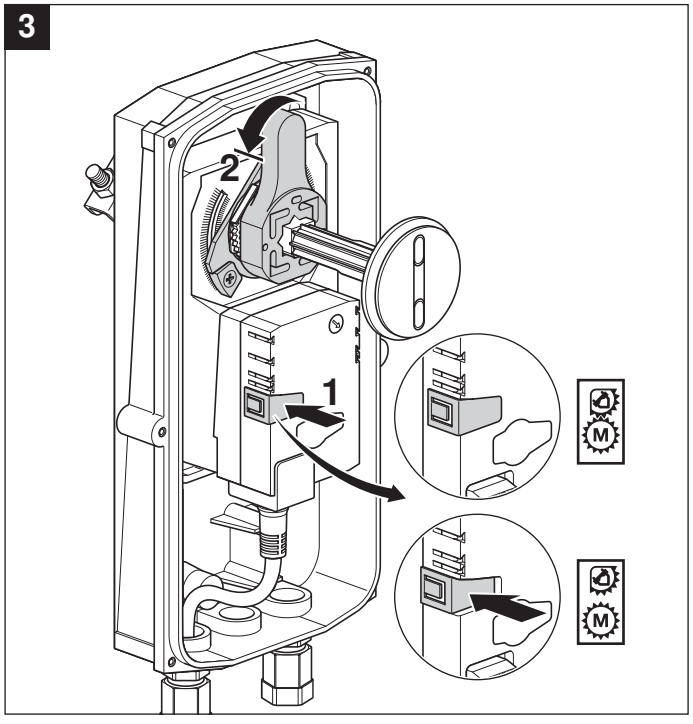

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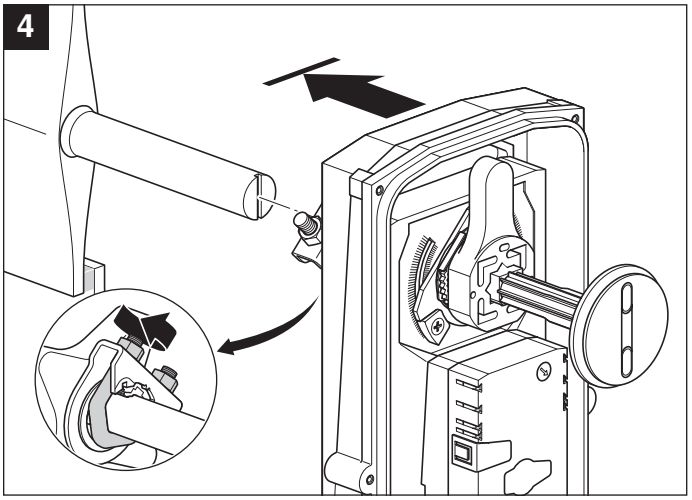

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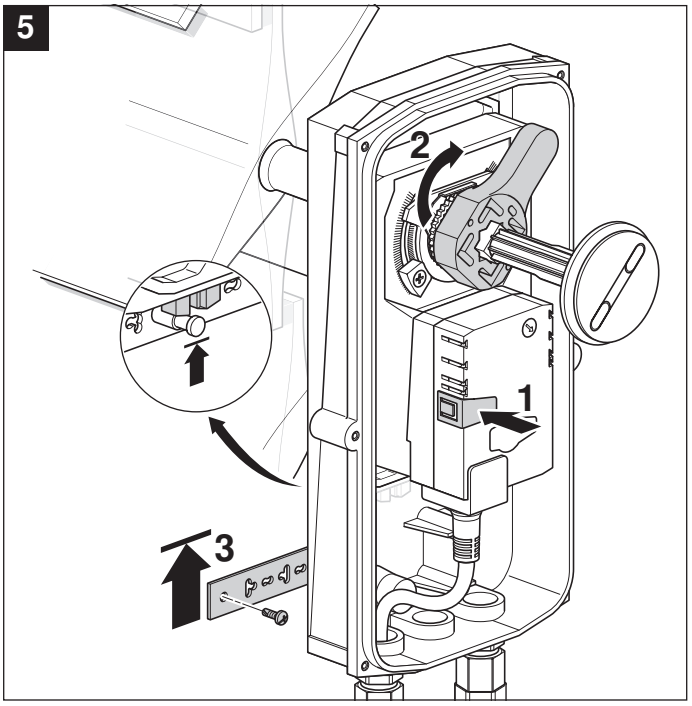

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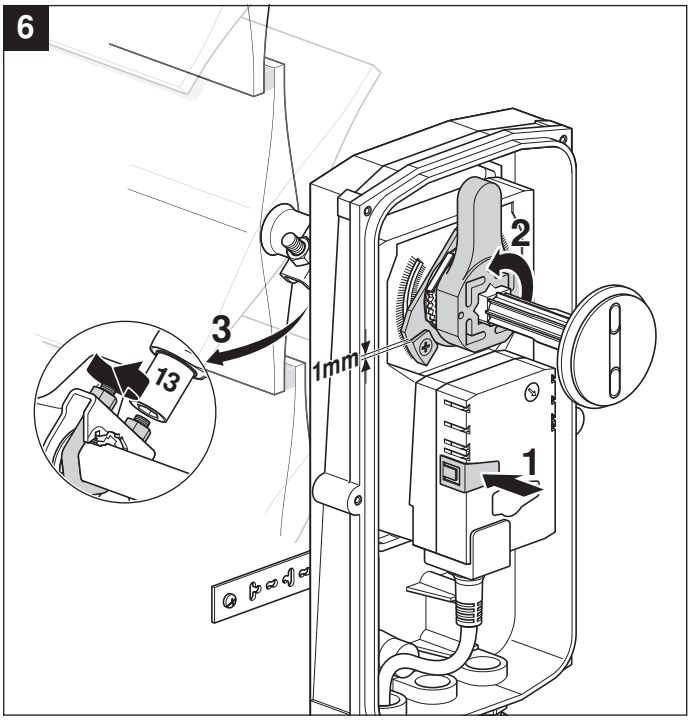

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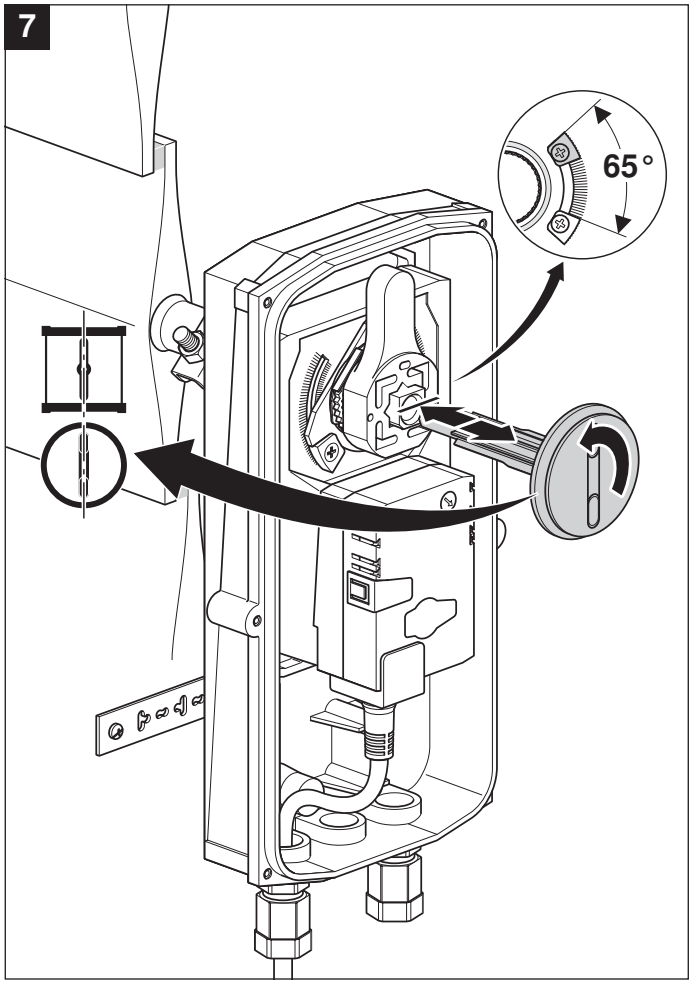

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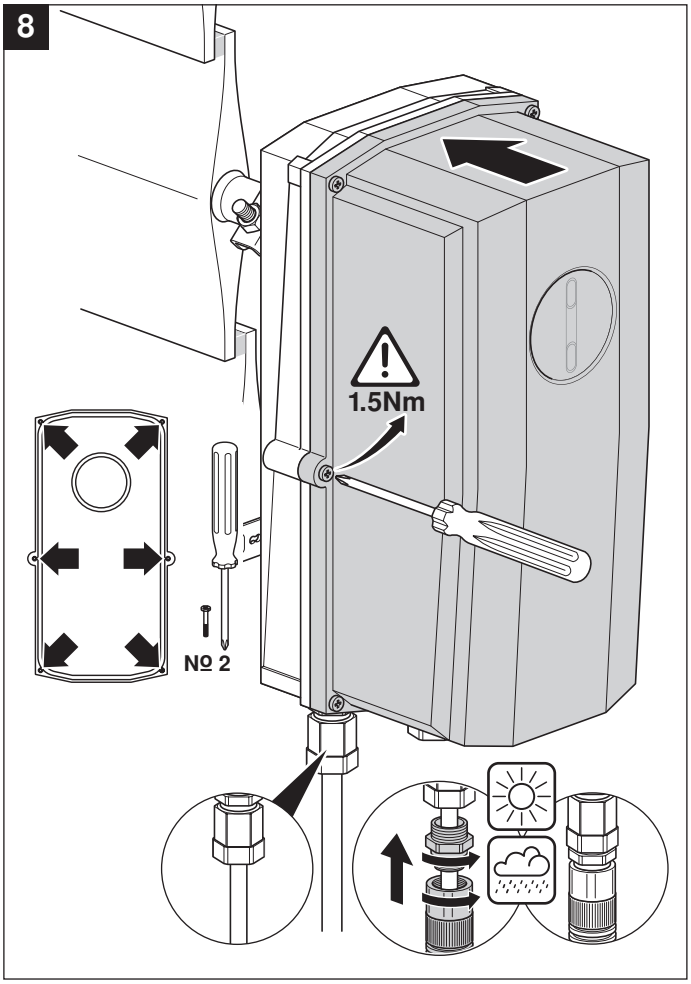
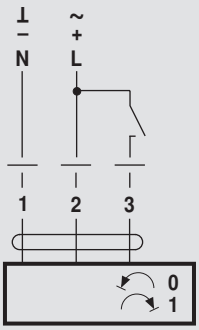
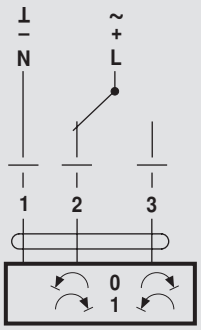
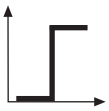
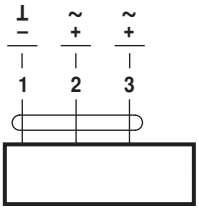






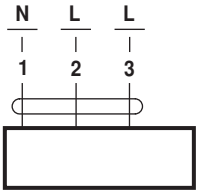


AC 24 V / DC 24 V

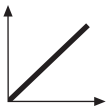


GM24GX SMQ24G

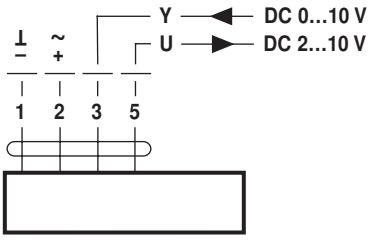
AC 100 ... 240 V ⚠



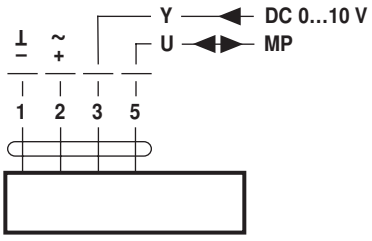
GM230GX



AC 24 V / DC 24 V



GM24GX-SR SMQ24G-SR
GM24GX-MF SMQ24G-MF



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