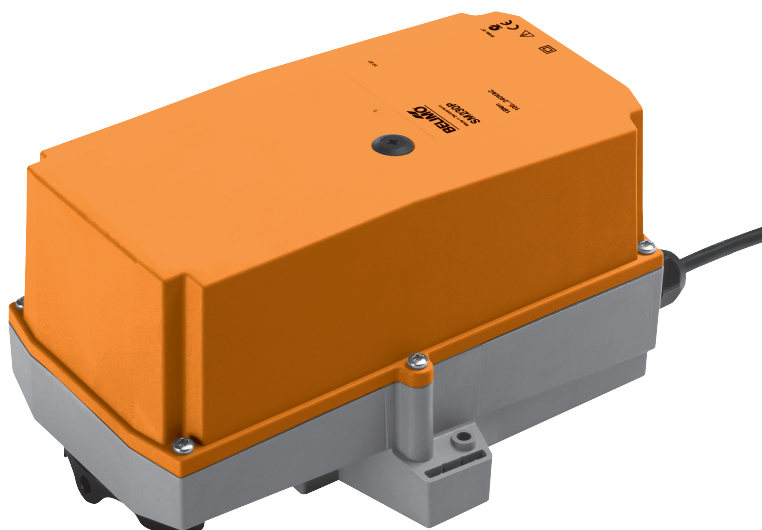


Modulating Robustline damper actuator for operating air dampers in industrial plants and in the technical building installations

- For air dampers up to approx. 1.6 m²
- Torque 8 Nm
- Nominal voltage AC 100 ... 240 V
- Control: modulating DC 0 ... 10 V
- Position feedback DC 2 ... 10 V

Optimum protection against

- Corrosion and chemical influences
- UV radiation
- Damp and condensation
- Low temperatures (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 100 ... 240 V, 50/60 Hz
	Nominal voltage range	AC 85 ... 265 V
	Power consumption	Operation 3.5 W @ nominal torque At rest 1 W
	Wire sizing	6.5 VA
	Connection	Power supply Halogen-free cable 1 m, 2 x 0.75 mm ² Signals Halogen-free cable 1 m, 4 x 0.75 mm ²
	Functional data	
	Torque (nominal torque)	Min. 8 Nm @ nominal voltage
	Control	Control signal Y DC 0 ... 10 V, typical input impedance 100 kΩ Operating range DC 2 ... 10 V
	Position feedback (measuring voltage U)	DC 2 ... 10 V, max. 1 mA
	Auxiliary supply	DC 24 V ±30%, max. 10 mA
	Position accuracy	±5%
	Direction of rotation	Reversible with switch 0 / 1
	Direction of motion at Y = 0 V	At switch position 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
	Running time	150 s / 90°↔
	Sound power level	Max. 35 dB (A)
	Position indication	Mechanical, pluggable
	Safety	
	Protection class	II totally insulated □
	Degree of protection	IP66 + IP67
	EMC	CE according to 2004/108/EC CE according to 2006/95/EC
	Low-voltage directive	
	Mode of operation	Type 1 (EN 60730-1)
	Rated impulse voltage	2.5 kV (EN 60730-1)
	Control pollution degree	4 (EN 60730-1)
	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
	Dimensions / Weight	
	Dimensions	See «Dimensions» on page 3
	Weight	Approx. 1.3 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.
- Caution: Power supply voltage !
- Assembly must be carried out by trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.

Safety notes

(continued)

- 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.
- 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 information on chemical resistance refers to laboratory tests with raw materials and finished products and to trials in the field in the areas of application indicated.
- The materials used may be subjected to external influences (temperature, pressure, constructional fixture, effect of chemical substances etc.), that cannot be simulated in laboratory test or field trials.
- The information regarding areas of application and resistance can therefore only serve as a guideline. In case of doubt, we recommend that you definitely carry out a test. This information does not imply any legal entitlement. Belimo will not be held liable and will provide no warranty. The chemical or mechanical resistance of the materials used is not alone sufficient for judging the suitability of a product. Regulations pertaining to combustible liquids such as solvents etc. must be taken into account with special reference to explosion protection.

Product features

- Fields of application** The actuator is particularly suited for use in difficult conditions, e.g. in the field of:
- Wood drying
 - Animal breeding
 - Food processing
 - Agricultural
 - Swimming baths / Bathrooms
 - Rooftop units
 - General outdoor applications
 - Low temperatures (the separately available actuator with built-in heater ex works is suitable for use up to -40°C)
 - Changing climate / frequent and strong fluctuations in temperature (Recommendation: to prevent internal condensation, use the separately available actuator with built-in heater ex works)

Resistances	Test	Test standard	Testing body
	Noxious gas tests	EN 60068-2-60	Fraunhofer Institute ICT / DE
	Salt fog spray test	EN 60068-2-52	Fraunhofer Institute ICT / DE
	Ammoniac test	DIN 50916-2	Fraunhofer Institute ICT / DE
	Climatic test	IEC 60068-2-30	Trikon Solutions AG / CH
	Disinfectants (animals)		Trikon Solutions AG / CH
	UV test	EN 60068-2-5	Quinel / Zug CH
	(Solar radiation at ground level)	EN 60068-2-63	

Used materials	Actuator parts	Material
	Actuator housing	Polypropylene (PP)
	Cable glands / hollow shaft	Polyamide (PA)
	Connection cable	FRNC
	Clamp / screws in general	Steel 1.4404
	Seals	EPDM
	Form-fit insert	Anodised aluminium

- Mode of operation** The actuator is controlled with a standard modulating signal of DC 0 ... 10 V and travels to the position defined by the control signal. Measuring voltage U serves for the electrical display of the damper position 0 ... 100% and as slave control signal for other actuators.
- 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.
- High functional reliability** The actuator is overload-proof, requires no limit switches and automatically stops when the end stop is reached.

Product features
(continued)

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. Standard setting 0 ... 90° Δ. 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.

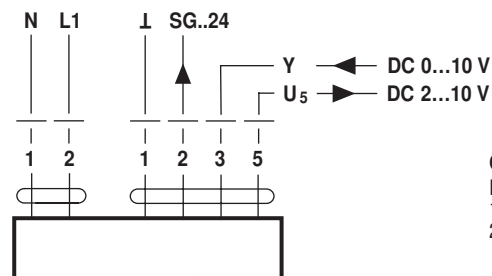
Accessories

	Description	Data sheet
Electrical accessories	Positioner SG..24	T2 - SG..24
	Heating 230 V with thermostat HT230 *	T2 - HT230
	Heating 230 V with humidistat HH230 *	T2 - HH230
Mechanical accessories	Various form-fit inserts	T2 - Z-NM..

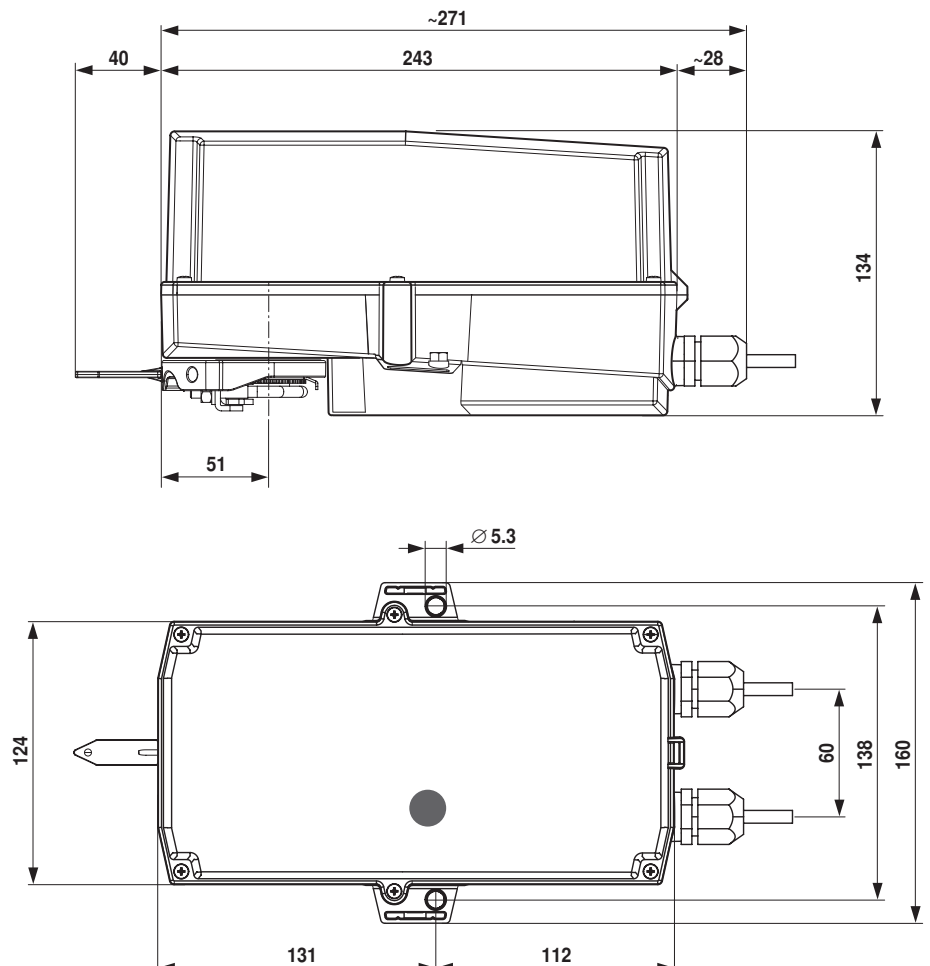
* only available fitted in separate actuator

Electrical installation
Wiring diagram
Note

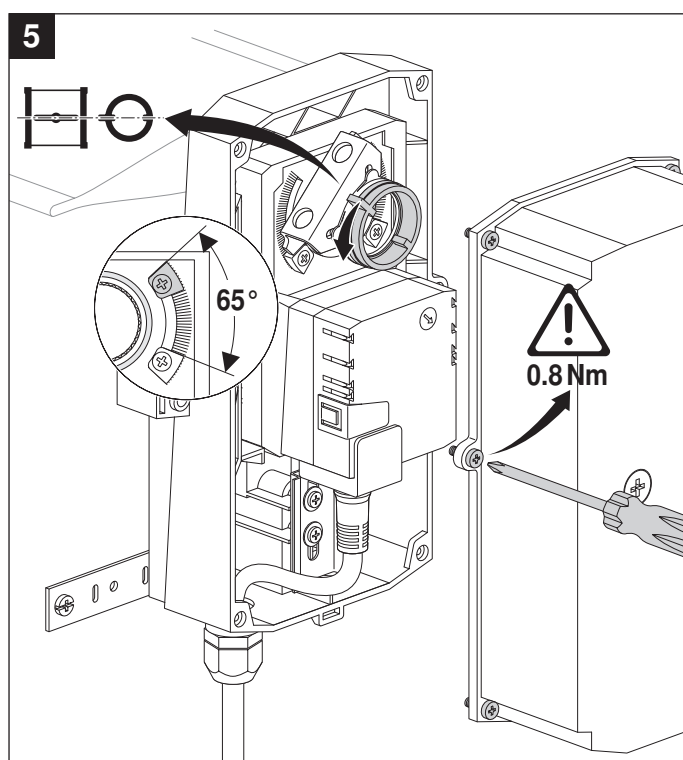
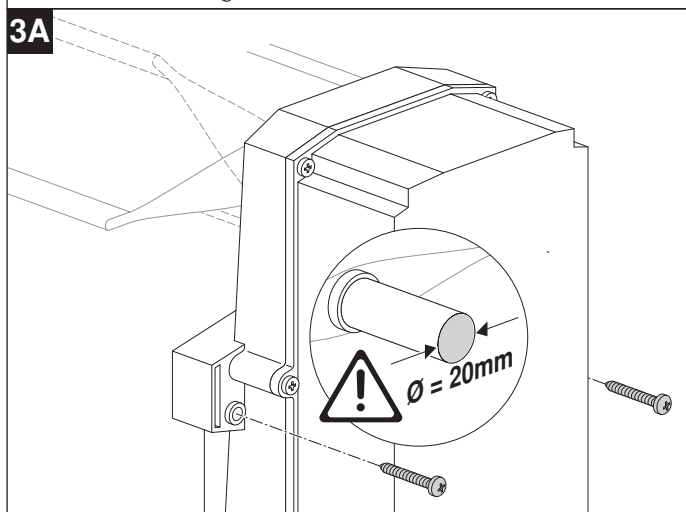
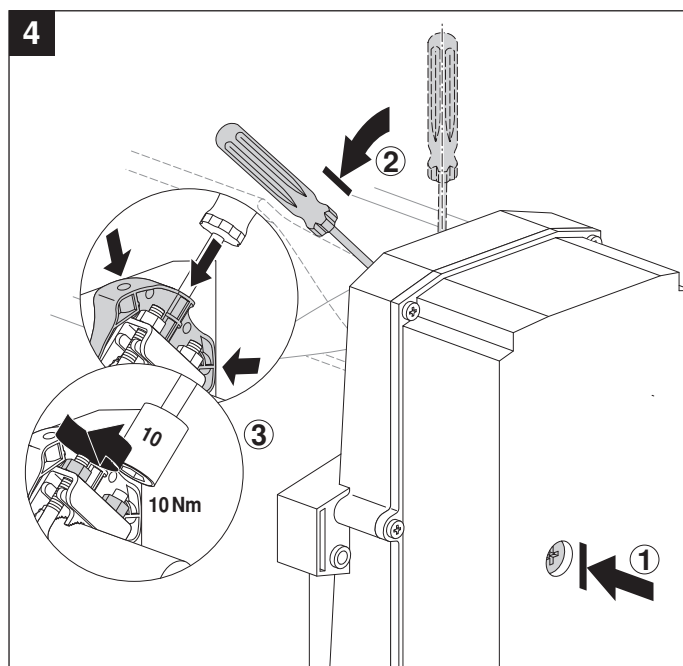
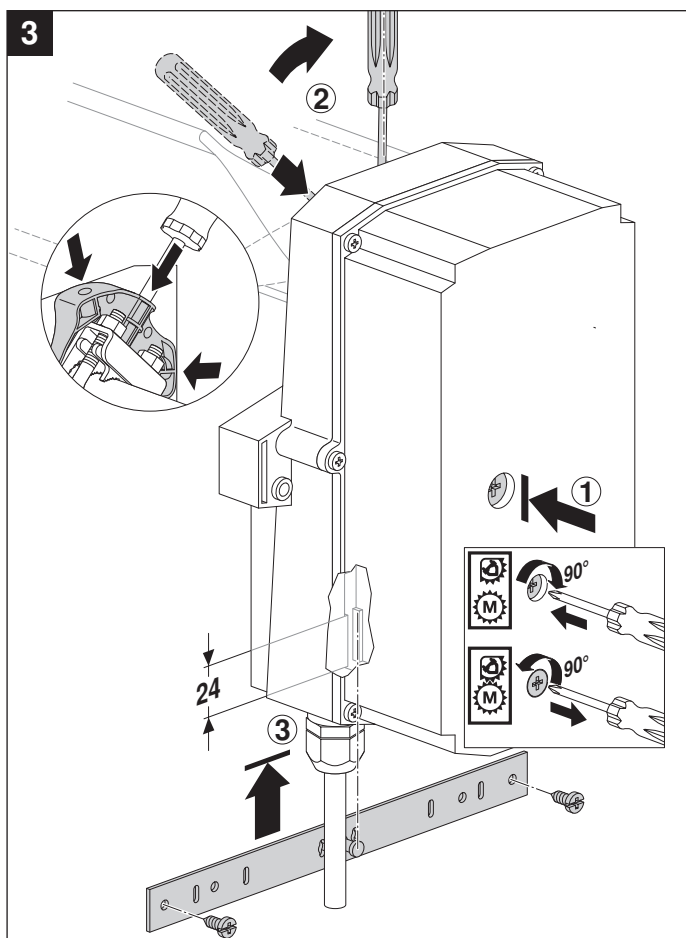
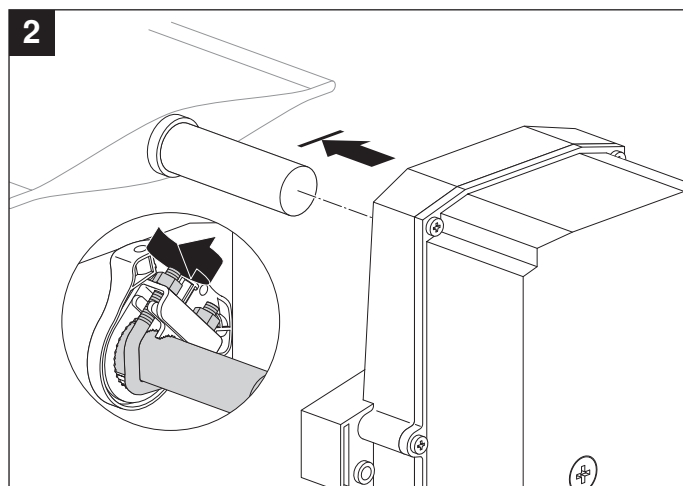
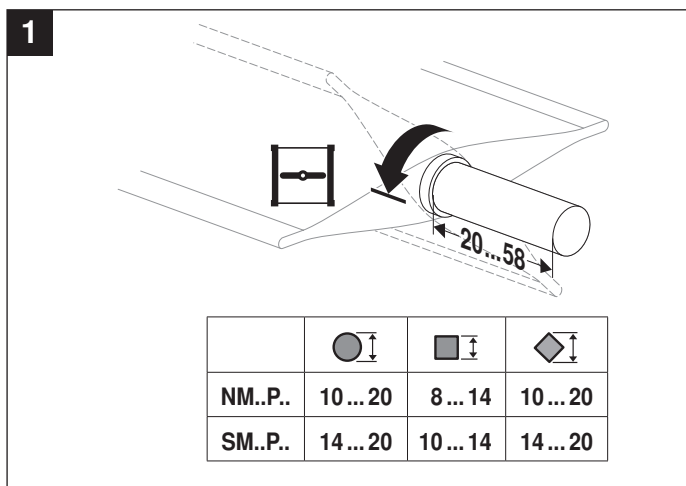
- Caution: Power supply voltage !
- Other actuators can be connected in parallel. Note the performance data.

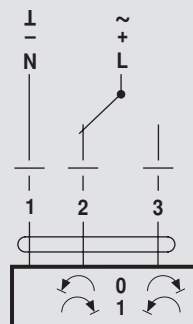
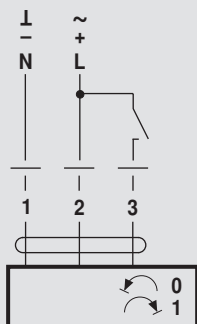

Cable colours:

Power supply: Signals:
 1 = blue 1 = black
 2 = brown 2 = red
 3 = white 3 = white
 5 = orange 5 = orange

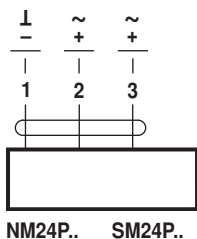
Dimensions [mm]
Dimensional drawings


Damper spindle	Length				
	20...58	8...20	8...14	10...20	

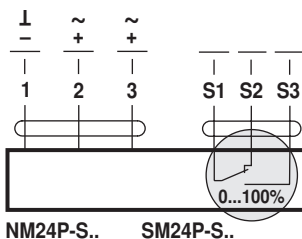




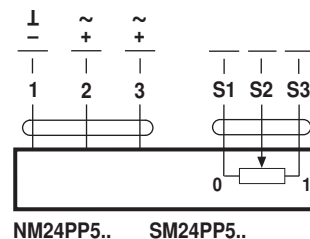
AC 24 V / DC 24 V



NM24P.. SM24P..

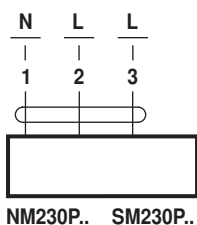


NM24P-S.. SM24P-S..

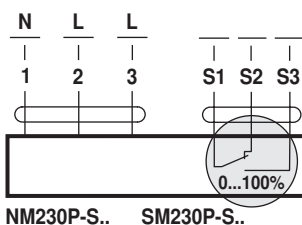


NM24PP5.. SM24PP5..

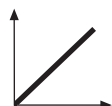
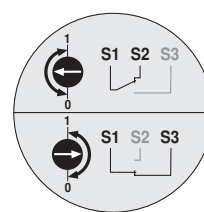
AC 100 ... 240 V ⚠



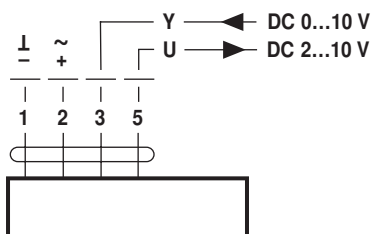
NM230P.. SM230P..



NM230P-S.. SM230P-S..

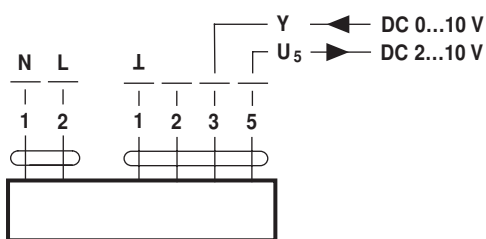


AC 24 V / DC 24 V



NM24P-SR.. SM24P-SR..
NM24P-MF.. SM24P-MF..

AC 100 ... 240 V ⚠



NM230PSR.. SM230PSR..