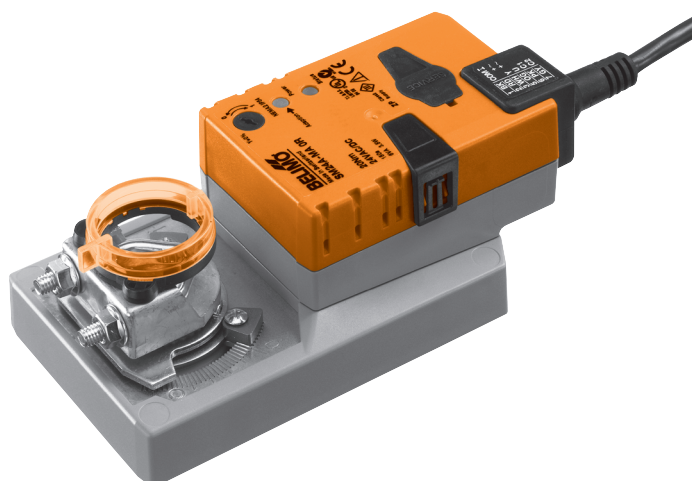


Parameterisable damper actuator for adjusting air dampers in ventilation and air-conditioning systems in buildings

- Air damper size up to approx. 4 m<sup>2</sup>
- Torque 20 Nm
- Nominal voltage AC/DC 24 V
- Control:
  - Modulating 0 ... 135 Ω
- Position feedback:
  - DC 2 ... 10 V or variable


**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	3.5 W @ nominal torque
In operation	1.25 W
At rest	6 VA
For wire sizing	
Connection	Cable 1 m, 5 x 0,75 mm <sup>2</sup>

Functional data	Factory settings	Variable	Settings
Torque (nominal torque)	Min. 20 Nm @ nominal voltage	25%, 50%, 75% reduced	.....
Control	0 ... 135 Ω (for controllers Honeywell, JCI, Sauter)		
Position feedback (measuring voltage U)	DC 2 ... 10 V, max. 0.5 mA	Start point DC 0.5 ... 8 V End point DC 2.5 ... 10 V	.....
Position accuracy	±5%		
Direction of rotation	Can be selected with 0 / 1		
Direction of motion at Y = 0 Ω	In switch position 0 ↻ and 1 ↻, respectively	Electronically reversible	.....
Manual override	Gearing latch disengaged with pushbutton, can be locked		
Angle of rotation	Max. 95° ↻, can be limited at both ends with mechanical adjustable end stops		
Running time	150 s / 90° ↻	85 ... 353 s	.....
Automatic adjustment running time, operating range and measuring signal U to match the mechanical angle of rotation	Manual triggering of the adaption by pressing the «Adaption» button or with the PC-Tool	Automatic adaption whenever the supply voltage is switched on, or manual triggering	.....
Override control	MAX (maximum position) = 100% MIN (minimum position) = 0%	MAX = (MIN + 30° ↻) ... 100% MIN = 0% ... (MAX - 30° ↻)	.....
Sound power level	Max. 45 dB (A)	with a 85 s = 45 dB (A) running time of 353 s < 35 dB (A)	
Position indication	Mechanical, pluggable		

**Safety**

Protection class	III Safety extra-low voltage UL Class 2 Supply
Degree of protection	IP54 NEMA 2, 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
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

**Technical data**

(continued)

**Dimensions / Weight**







Dimensions	See «Dimensions» on page 4
Weight	Approx. 910 g

**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 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.
- To calculate the actuating force required for air dampers and sliders, the specifications supplied by the damper manufacturers concerning the surface, 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**

<b>Mode of operation</b>	The actuator is controlled with a standard modulating signal of 0 ... 135 $\Omega$ 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.
<b>Parameterisable actuators</b>	The factory settings cover the most common applications. The output signal and other parameters can be altered with the ZTH-GEN parameterising device or the BELIMO Service-Tool, MFT-P.
<b>Simple direct mounting</b>	Simple direct mounting on the damper spindle with a universal spindle clamp, supplied with an anti-rotation strap to prevent the actuator from rotating.
<b>Manual override</b>	Manual operation is possible with the pushbutton (the gearing latch remains disengaged as long as the pushbutton is pressed or detented).
<b>Adjustable angle of rotation</b>	Adjustable angle of rotation with mechanical end stops.
<b>High functional reliability</b>	The actuator is overload-proof, requires no limit switches and automatically stops when the end stop is reached.
<b>Home position</b>	When the supply voltage is switched on for the first time, i.e. at commissioning or after pressing the «gear disengagement» switch, the actuator travels to the home position.

Pos. direction of rotation switch	Home position
 Y = 0 	 ccw Left stop
 Y = 0 	 cw Right stop

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

**Accessories**

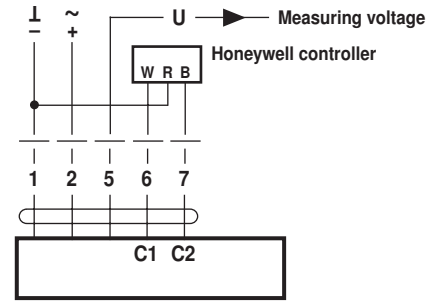
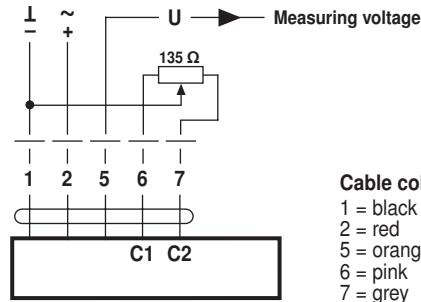
	Description	Data sheet
<b>Electrical accessories</b>	Auxiliary switch S..A..	T2 - S..A..
	Feedback potentiometer P..A..	T2 - P..A..
	PC-Tool MFT-P	
	Parameterising device ZTH-GEN	T9 - ZTH-GEN
	Position sensor SGA24, SGE24 and SGF24	T2 - SG..24
	Digital position indication ZAD24	T2 - ZAD24
<b>Mechanical accessories</b>	Various accessories (clamps, shaft extensions etc.)	T2 - Z-SM..A..

Electrical installation

Wiring diagram / Example

Note

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

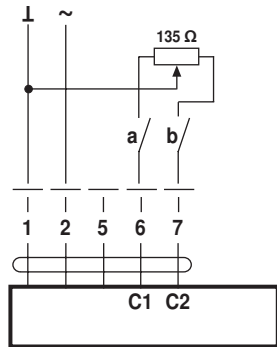


Cable colours:

- 1 = black
- 2 = red
- 5 = orange
- 6 = pink
- 7 = grey

Functions with basic values

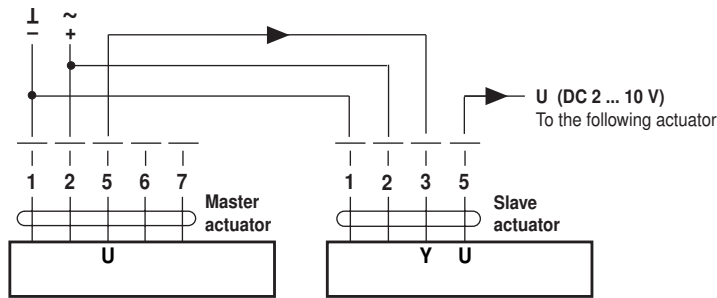
Override control with AC 24 V with relay contacts



Functions	a	b
0% <math>\leftarrow</math>		
100% <math>\leftarrow</math>		
Control mode in accordance with the position of the potentiometer		

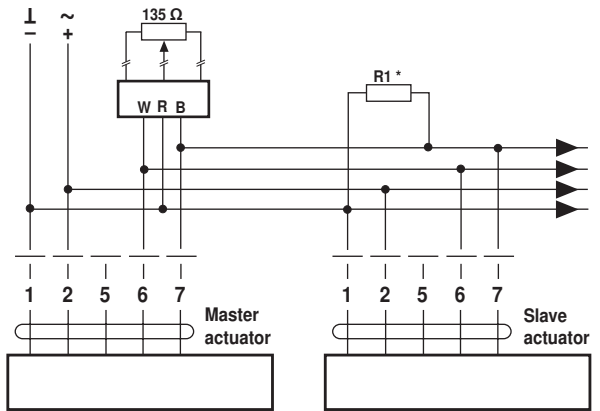
SM24A-R9

Master/Slave control



SM24A-R9

SM24A-SR  
SMA24A-MF



SM24A-R9

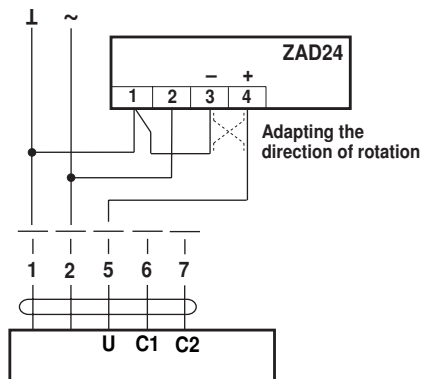
SM24A-R9

\* Note

An additional resistor R1 (between R-B) must be connected in parallel when actuators are operated in parallel. The corresponding value can be seen in the table below.

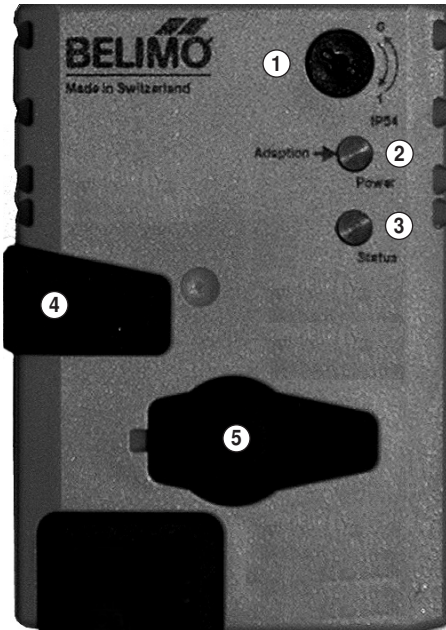
Number of actuators	2	3	4
Resistor R1 between R-B	1300 Ω	910 Ω	768 Ω

Position indication



SM24A-R9

Operating controls and indicators



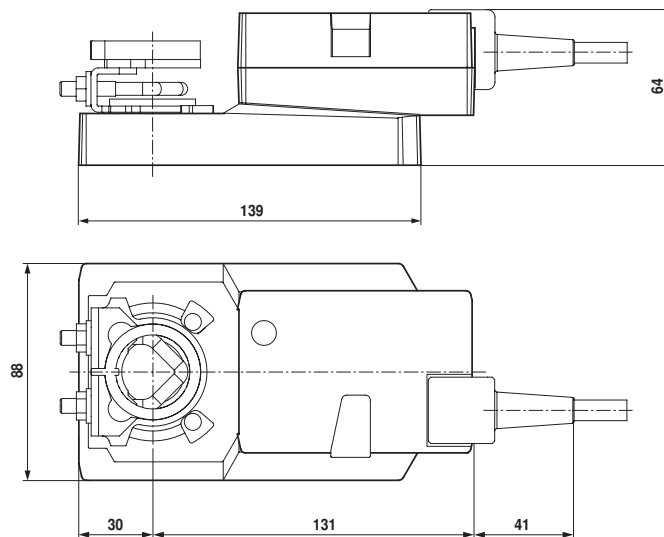
- ① **Direction of rotation switch**  
Switching over: Direction of rotation changes
- ② **Pushbutton and green LED display**  
Off: No voltage supply or malfunction  
On: Operation  
Press button: Switches on angle of rotation adaption followed by standard operation
- ③ **Pushbutton and yellow LED display**  
Off: Standard operation  
On: Adaption or synchronising process active  
Press button: No function
- ④ **Gear disengagement switch**  
Press button: Gear disengaged, motor stops, manual operation possible  
Release button: Gear engaged, synchronisation starts, followed by standard operation
- ⑤ **Service plug**  
For connecting parameterising and service tools

**Check voltage supply connection**

- ② Off and ③ On Check the supply connections.  
Possibly  $\perp$  and  $\nabla$  are swapped over.

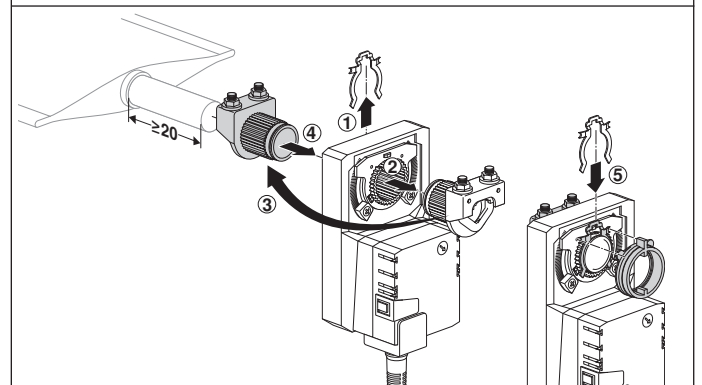
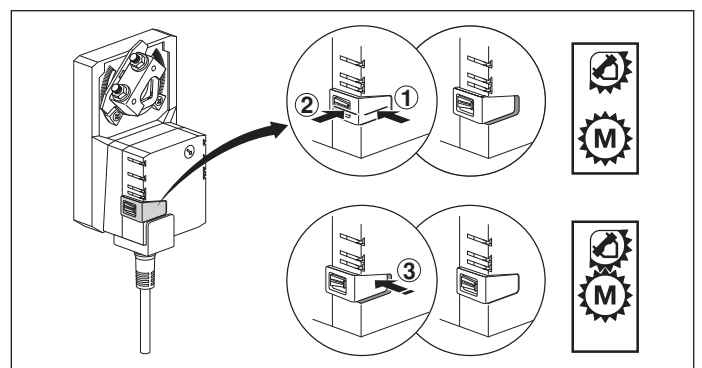
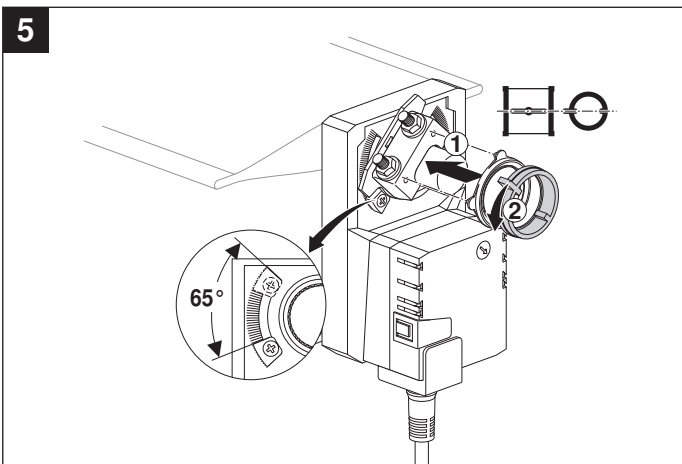
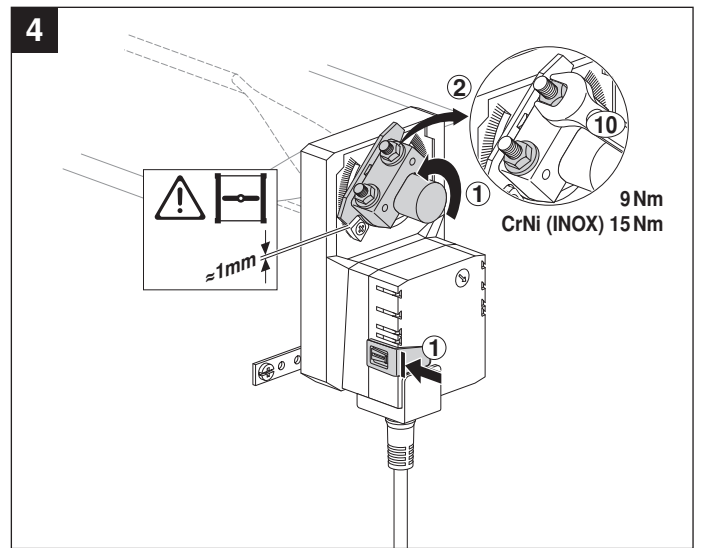
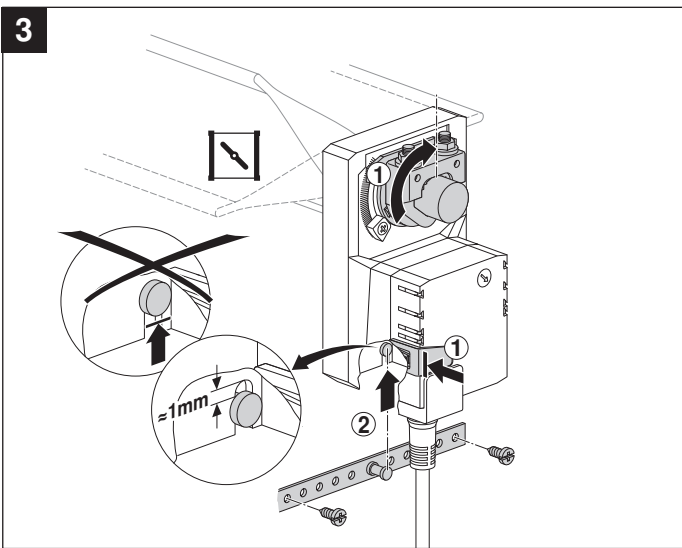
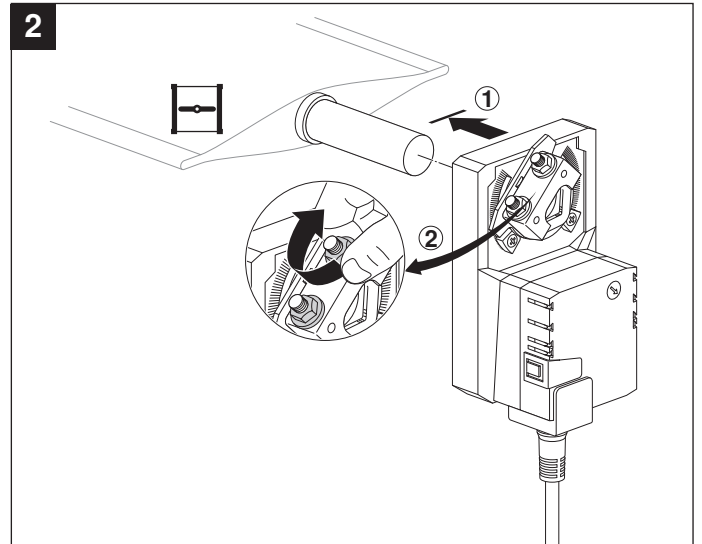
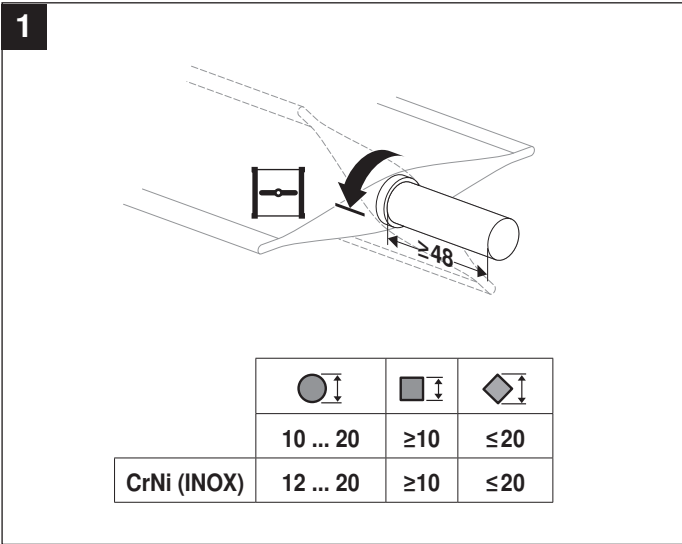
Dimensions [mm]

Dimensional drawings

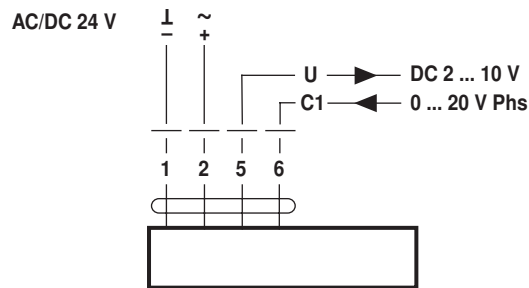


Damper spindle	Length	● I	■ I	◆ I
	≥48	10 ... 20 <sup>1)</sup>	≥10	≤20
	≥20	10 ... 20 <sup>1)</sup>	≥10	≤20

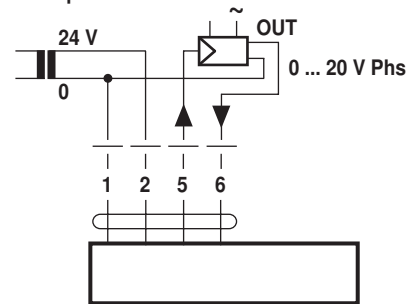
<sup>1)</sup> CrNi (INOX) 12 ... 20



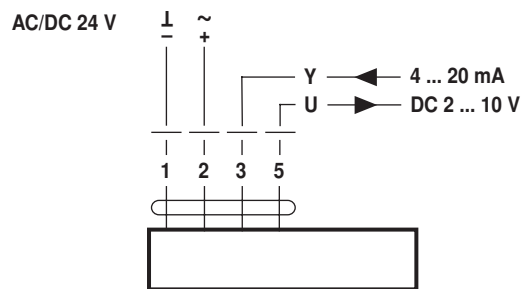
**SM24A-PC..**



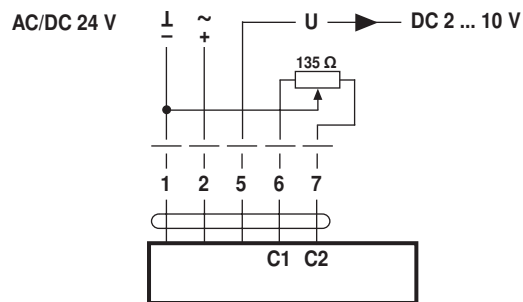
**Example:**



**SM24A-MA..**



**SM24A-R9..**



**Honeywell, Serie 90:**

