

**Modulating rotary actuator for
2 and 3-way ball valves**

- Torque 10 Nm
- Nominal voltage AC/DC 24 V
- Control: Modulating


Technical data

Electrical data	Nominal voltage	AC 24 V, 50/60 Hz / DC 24 V
	Power supply range	AC 19.2 ... 28.8 V / DC 21.6 ... 28.8 V
	Power consumption	In operation 1.5 W at nominal torque
		For wire sizing 2.5 VA
	Connection	Cable 1 m, 4 x 0,75 mm ²
Functional data	Parallel connection	Yes (Note performance data for supply!)
	Torque (nominal torque)	Min. 10 Nm at nominal voltage
	Control	control signal Y
	operating range	DC 0 ... 10 V, Input resistance 100 kΩ DC 2 ... 10 V for 0 ... 90°↗ (can be switched to DC 0 ... 10 V)
	Position response (measuring voltage U)	DC 2 ... 10 V, max. 1 mA, for 0 ... 90°↗ (can be switched to DC 0 ... 10 V)
	Position accuracy	±5%
	Manual override	Temporary and permanent disengagement of the gearing latch by means of the rotary knob on the housing
	Running time	140 s / 90°↗
	Sound power level	Max. 35 dB (A)
	Position indication	Scale plate 0 ... 1
Safety	Protection class	III Extra low voltage
	Degree of protection	IP40
	EMC	CE according to 89/336/EEC
	Mode of operation	Type 1 (to EN 60730-1)
	Rated impulse voltage	0.8 kV (to EN 60730-1)
	Control pollution degree	3 (to EN 60730-1)
	Ambient temperature range	0 ... +50 °C
	Media temperature	+5 ... +120 °C (in ball valve)
	Non-operating temperature	-30 ... +80 °C
	Ambient humidity range	95% r.H., non-condensating (to EN 60730-1)
Dimensions / Weight	Maintenance	Maintenance-free
	Dimensions	See «Dimensions» on page 2
	Weight	Approx. 500 g (without ball valve)

Safety notes


- The actuator has been designed for use in stationary heating, ventilation and air conditioning systems and 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.
All applicable legal or institutional installation regulations must be complied with.
- The device does not contain any parts that can be replaced or repaired by the user.
- 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 switch for changing the direction of rotation may only be operated by trained personnel.
The direction of rotation may not be reversed in a frost protection circuit.

Product features

Mode of operation	The actuator is controlled with a standard signal of DC 0 ... 10 V and moves into the position defined by the control signal.
Simple direct mounting	Straightforward direct mounting on the ball valve with only one screw. The mounting position in relation to the mixing valve can be selected in 90° steps.
Manual operation	Manual operation possible by lever (temporary disengagement of the gearing latch by pressing, permanent disengagement by means of the rotary knob on the housing).
Functional reliability	The actuator switches off automatically when the end stops are reached. The actuator switches off for seven seconds in the case of blocking, then attempts to restart. If the blocked condition persists, the actuator attempts to restart once every two minutes a total of 15 times and subsequently once every two hours.
Combination valve actuators	Refer to the valve documentation for suitable valves, their permitted media temperatures and closing pressures.

Electrical installation

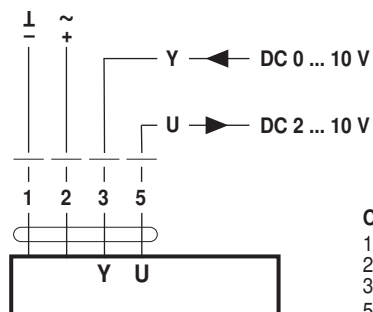
Wiring diagram

Notes

- Connect via safety isolation transformer.
- Parallel connection of several actuators possible. Power consumption must be observed!
- Factory setting: Operating range/Position feedback DC 2 ... 10 V (can be switched to DC 0 ... 10 V)



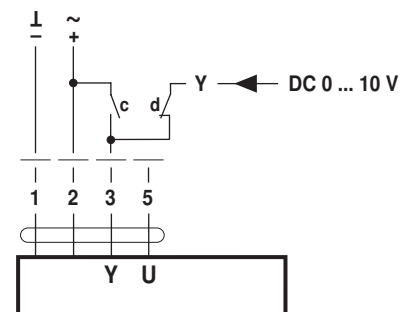
Standard









Cable colours:

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

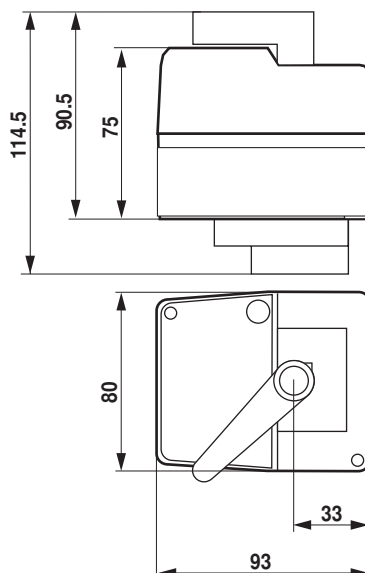
Override control (frost protection circuit)



c	d	Rotary actuator	Rotary valve
			A - AB = 100%
			A - AB = 0%

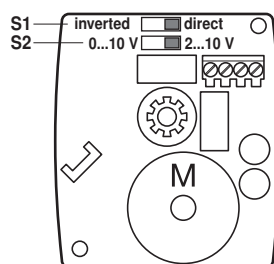
Dimensions [mm]



Dimensional diagrams

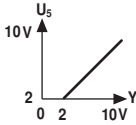
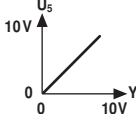


Adjusting switch S1 and S2

The S1 and S2 switches for setting the direction of rotation and the operating range/position feedback are located underneath the housing cover.



Switch S1	Direction of rotation	
Signal direct *		Y = 0%
Signal inverted		Y = 0%

Switch S2	Operating range/Position feedback
2 ... 10 V *	
0 ... 10 V	

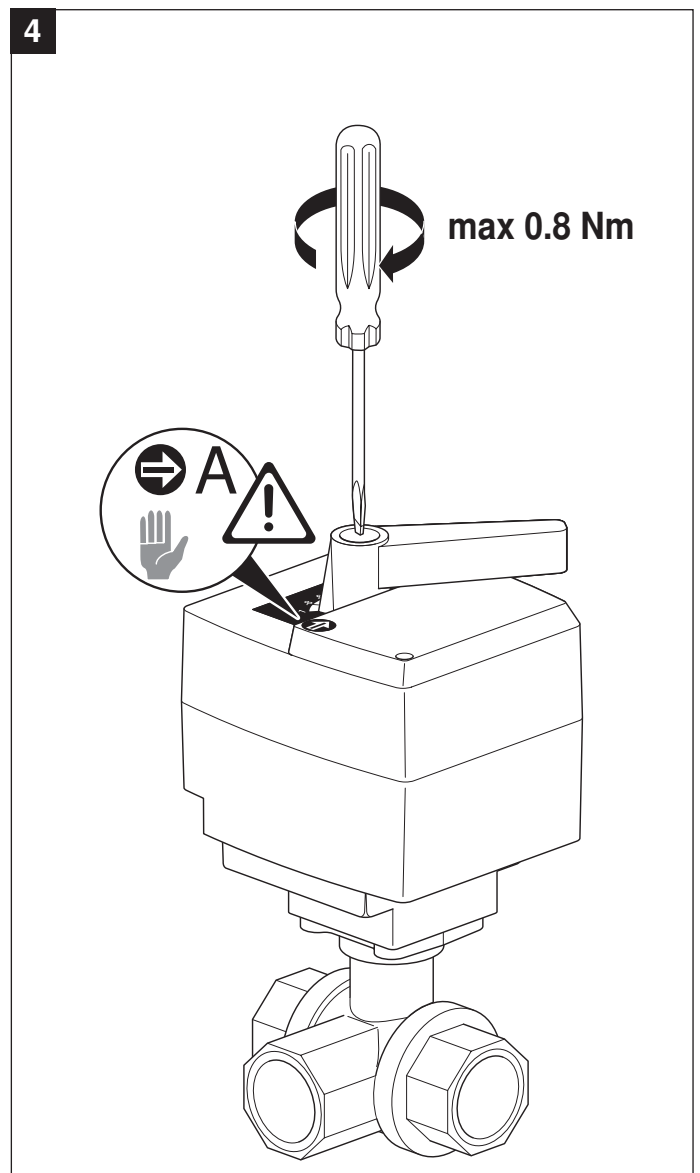
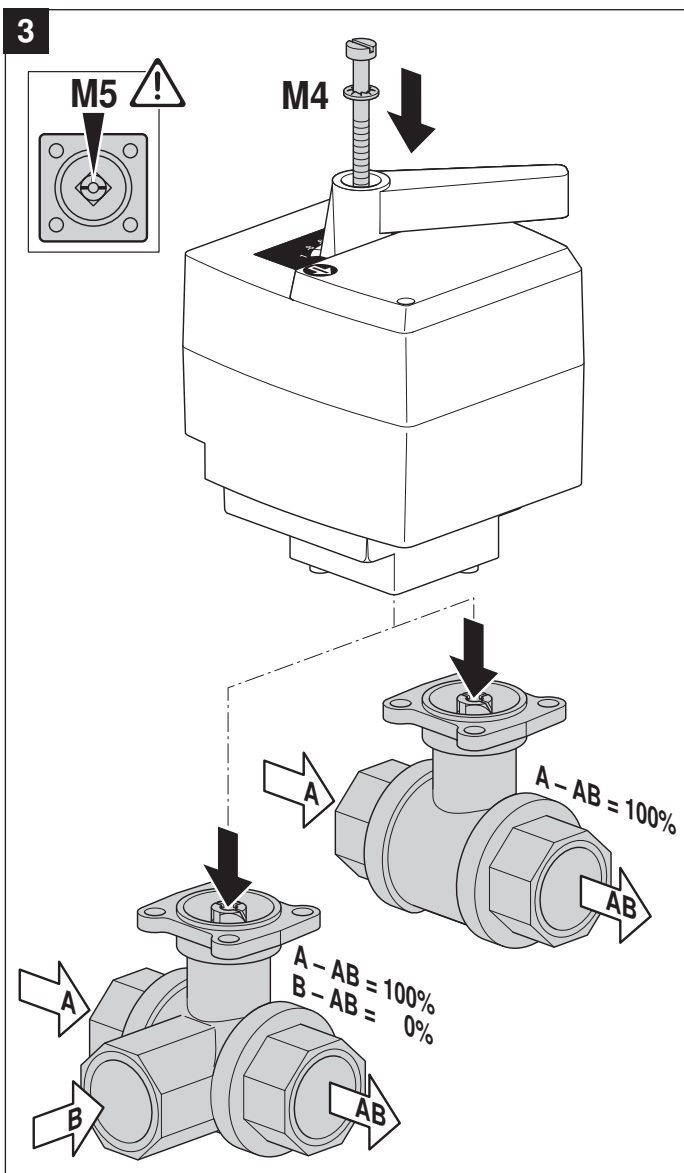
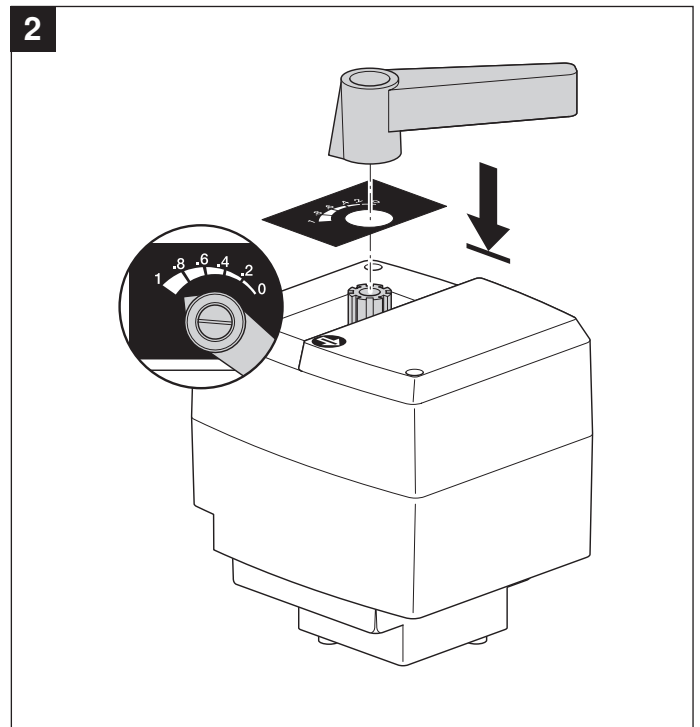
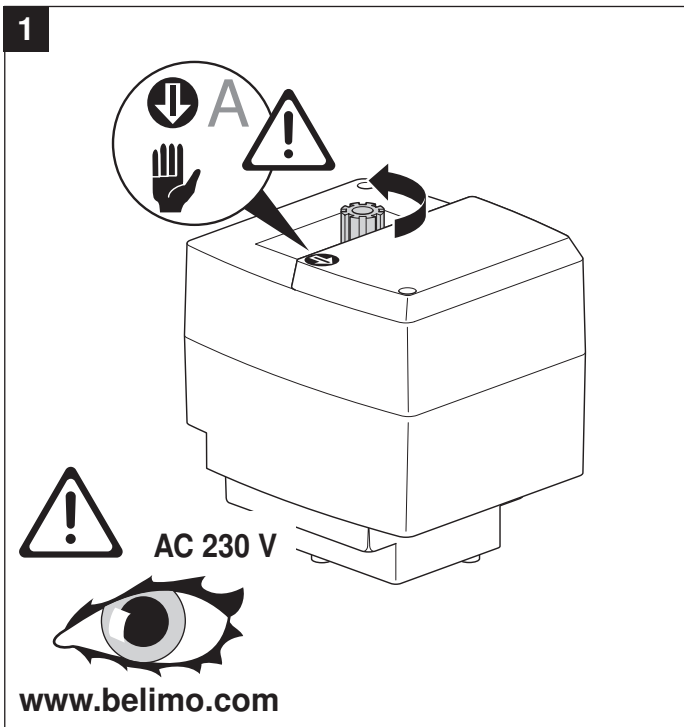
* Factory setting







Dismounting the housing cover

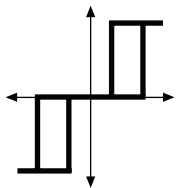
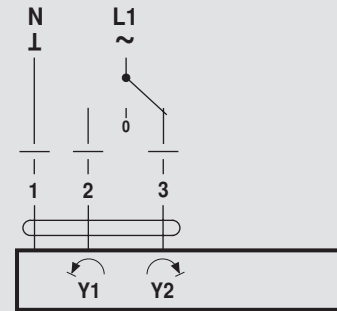
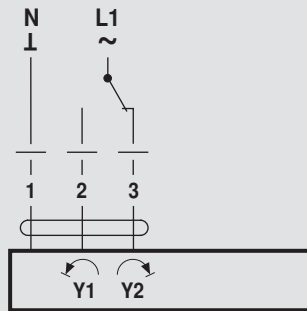
Loosen the central screw at the black lever and remove the two Phillips screws of the housing cover.

Further documentations

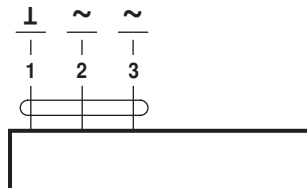
- Complete overview of actuators for water solutions
- Data sheets for ball valves
- Installation instructions for actuators and/or ball valves
- Notes for project planning (hydraulic characteristic curves and circuits, installation regulations, commissioning, maintenance etc.)



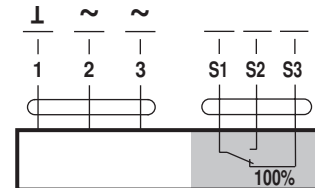
				
Y2		A - AB = 0%		



AC 24 V

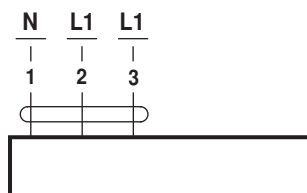


HR..24-3

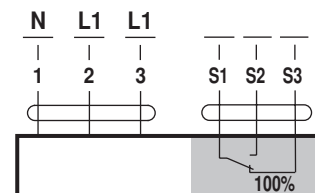


HR..24-3-S

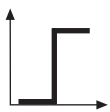
AC 230 V



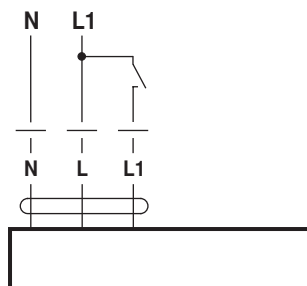
HR..230-3



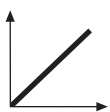
HR..230-3-S



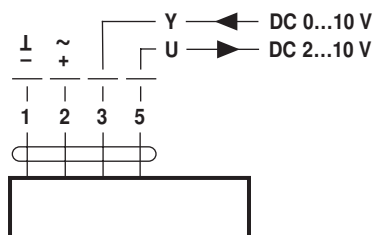
AC 230 V



HR..230-1-T



AC 24 V / DC 24 V



HR..24-SR



AC 230 V

