

Modulating globe valve actuator for 2-way and 3-way globe valves

- Actuating force 1000 N
- Nominal voltage AC/DC 24 V
- Control: modulating DC (0) 0.5 V...10 V
- Nominal stroke 20 mm
- Design life SuperCaps 15 years


Technical data

Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	2.5 W
	Power consumption in rest position	1.5 W
	Power consumption for wire sizing	6 VA
	Connection supply / control	Terminals 4 mm ² and cable 1 m, 4 x 0.75 mm ²
	Parallel operation	Yes
Functional data	Actuating force	1000 N
	Positioning signal Y	DC 0...10 V
	Positioning signal Y note	Input impedance 100 kΩ
	Operating range Y	DC 0.5...10 V
	Position feedback U	DC 0.5...10 V
	Position feedback U note	max. 0.5 mA
	Setting emergency setting position	Actuator spindle 0...100%, adjustable (POP rotary knob)
	Position accuracy	5% absolute
	Manual override	Gear disengagement with push-button
	Nominal stroke	20 mm
	Actuating time	150 s / 20 mm
	Actuating time emergency control function	35 s / 20 mm
	Sound power level motor max.	55 dB (A)
	Sound power level emergency setting position max.	60 dB (A)
	Position indication	Mechanical 5 ... 20 mm stroke
Safety	Protection class IEC/EN	III Safety extra-low voltage
	Degree of protection IEC/EN	IP54
	EMC	CE in accordance with 2004/108/EC
	Certification IEC/EN	Certified to: IEC/EN 60730-1 and IEC/EN 60730-2-14
	Mode of operation	Type 1.AA
	Rated impulse voltage supply / control	0.8 kV
	Control pollution degree	3
	Ambient temperature	0°C ... 50°C
Non-operating temperature	-40°C ... 80°C	
Ambient humidity	95% r.h., non-condensing	
Maintenance	Maintenance-free	
Weight	Weight approx.	1.610 kg

Safety notes


- This actuator has been designed for application 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.

Safety notes

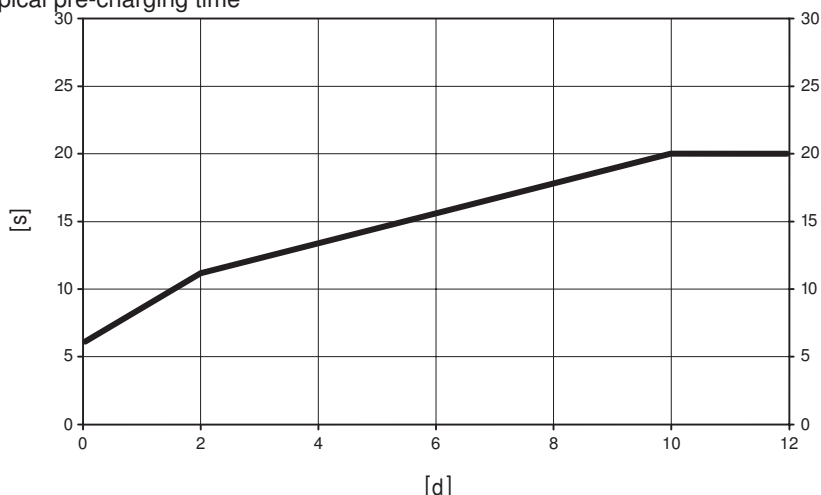
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The switch for changing the direction of motion/the closing point may be adjusted only by authorised personnel. The direction of stroke is critical, particularly in connection with frost protection circuits.
- 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 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

Principle of operation The actuator is connected with a standard modulating signal of DC 0 ... 10V and travels to the position defined by the positioning signal at the same time the integrated capacitors are being charged.. Interrupting the supply voltage causes the valve to be moved 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 move 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.

Typical pre-charging time



[d] = Electricity interruption in days
 [s] = Pre-charging time in seconds
 PF[s] = Bridging time

	[d]				
	0	1	2	7	≥10
[s]	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.

Direct mounting Simple direct mounting on the globe valve by means of form-fit hollow clamping jaws. The actuator can be rotated by 360° on the valve neck.

Manual override Manual override with push-button possible - temporary. The gear is disengaged and the actuator decoupled for as long as the button is pressed. The stroke can be adjusted by using a hexagon socket screw key (4 mm), which is inserted into the top of the actuator. The stroke spindle extends when the key is rotated clockwise.

High functional reliability The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.

Combination valve/actuator Refer to the valve documentation for suitable valves, their permitted medium temperatures and closing pressures.

Product features

Position indication	The stroke is indicated mechanically on the bracket with tabs. The stroke range adjusts itself automatically during operation.
Home position	Setting ex-works: Actuator spindle is retracted. When valve-actuator combinations are shipped, the direction of motion is set in accordance with the closing point of the valve.
Direction of stroke switch	When actuated, the direction of stroke switch changes the running direction in normal operation. The direction of stroke switch has no influence on the emergency setting position (POP) which has been set
Adaption of stroke range	The first time the supply voltage is switched on, i.e. at the time of commissioning, the actuator carries out a stroke adaption, which is when the operating range and position feedback adjust themselves to the mechanical stroke. Manual triggering of the adaption can be carried out by pressing the "Adaption" button. The actuator then moves into the position defined by the positioning signal.
Rotary knob emergency setting position	The "Emergency setting position" rotary knob can be used to adjust the desired emergency setting position (POP) from 0% to 100% in 10% increments. The rotary knob is in reference to the adapted or programmed height of stroke. In the event of an electricity 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	Type
Electrical accessories	Auxiliary switch add-on, 2 x SPDT	S2A-H

Electrical installation

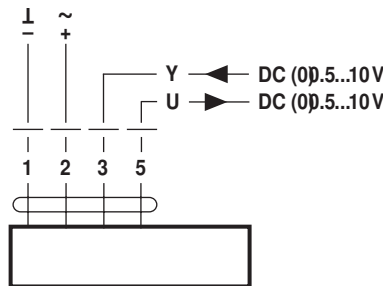


Notes

- Connection via safety isolating transformer.
- Parallel connection of other actuators possible.
- Direction of stroke switch factory setting: Actuator spindle retracted.

Wiring diagrams

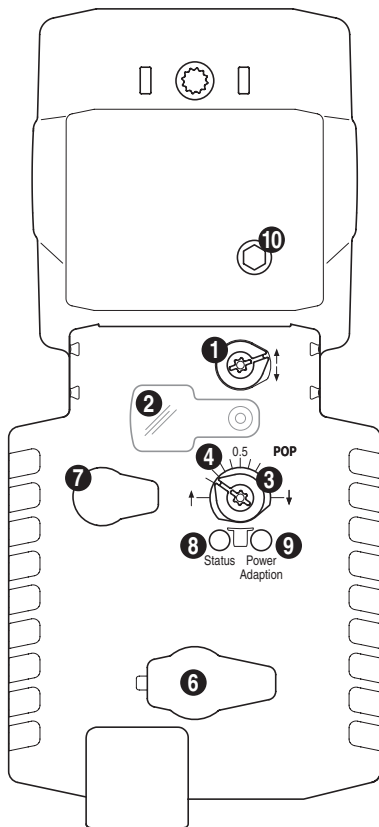
AC/DC 24V, modulating



Cable colours:

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

Indicators and operating controls



(1) Direction of stroke switch

Switching: Direction of stroke changes

(2) Cover, POP button

(3) POP button

(4) Scale for manual adjustment

(6) No function

(7) Gear disengagement button, temporary

Press button: Gear disengages, motor stops, manual override possible

Release button: Gear engages, standard mode

(8) LED display, yellow

(9) Push-button and LED display green

Press button: Triggers stroke adaption, followed by standard mode

(10) Manual override

Clockwise: Actuator spindle extends

Counterclockwise: Actuator spindle retracts

LED displays (8, yellow) and (9, green)

yellow: Off; green: Illuminated; In operation OK

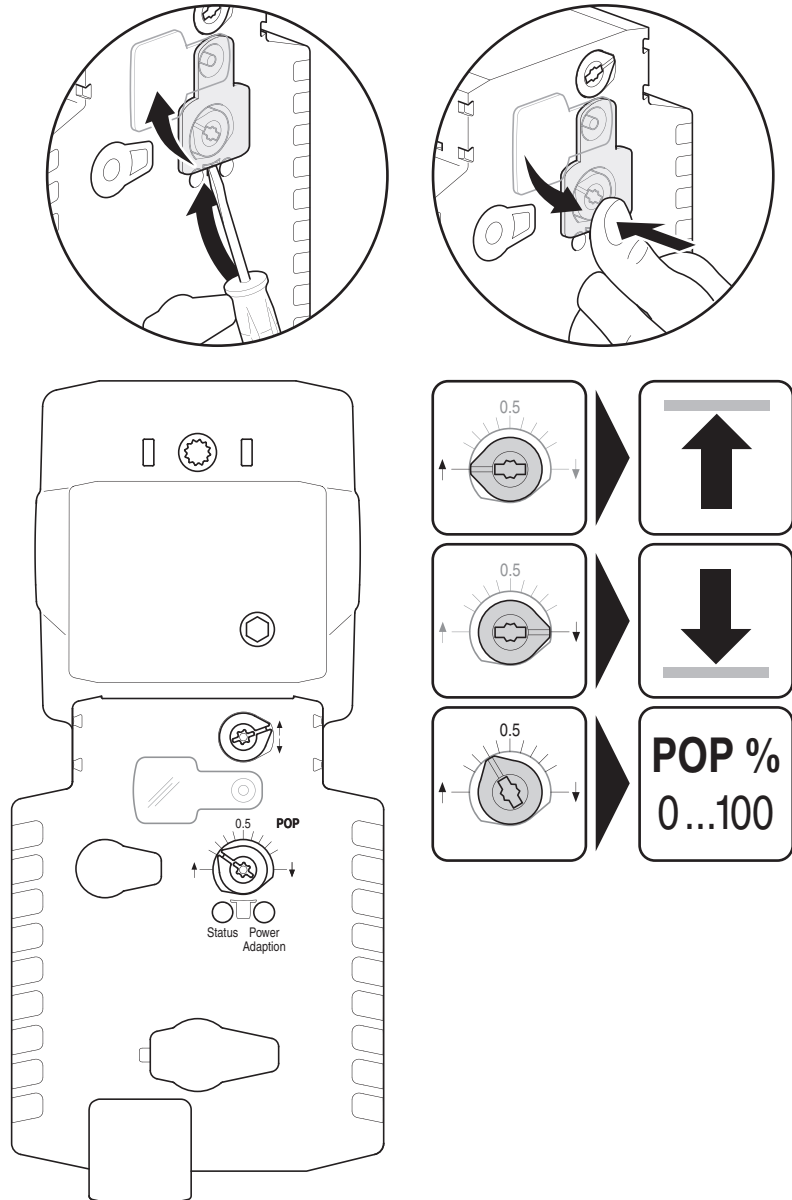
yellow: Off; green: Blinking; POP function active

yellow: Illuminated; green: Off; Pre-charging time SuperCap / Fault SuperCap

yellow: Off; green: Off; Not in operation

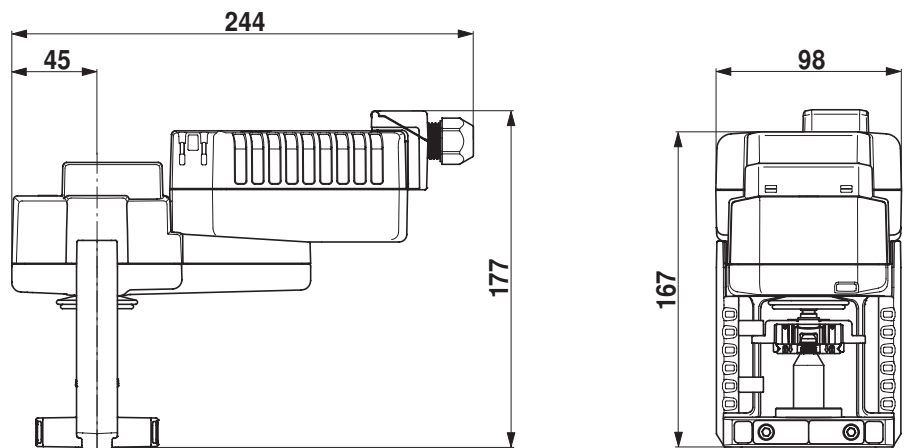
yellow: Illuminated; green: Illuminated; Adaption procedure active active

Indicators and operating controls



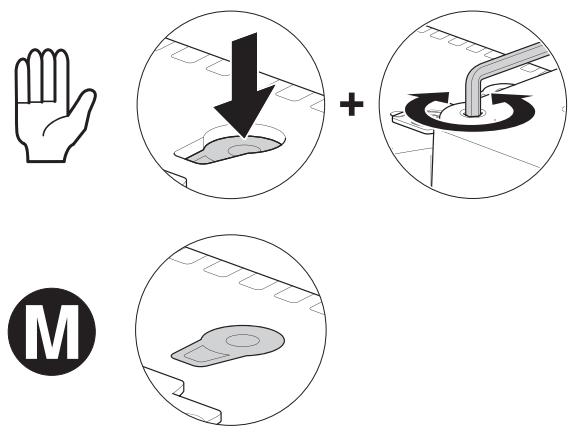
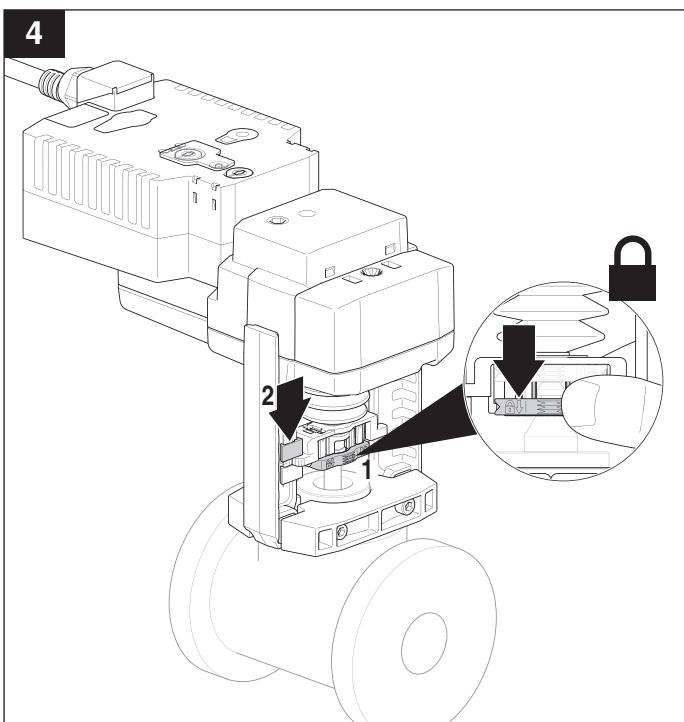
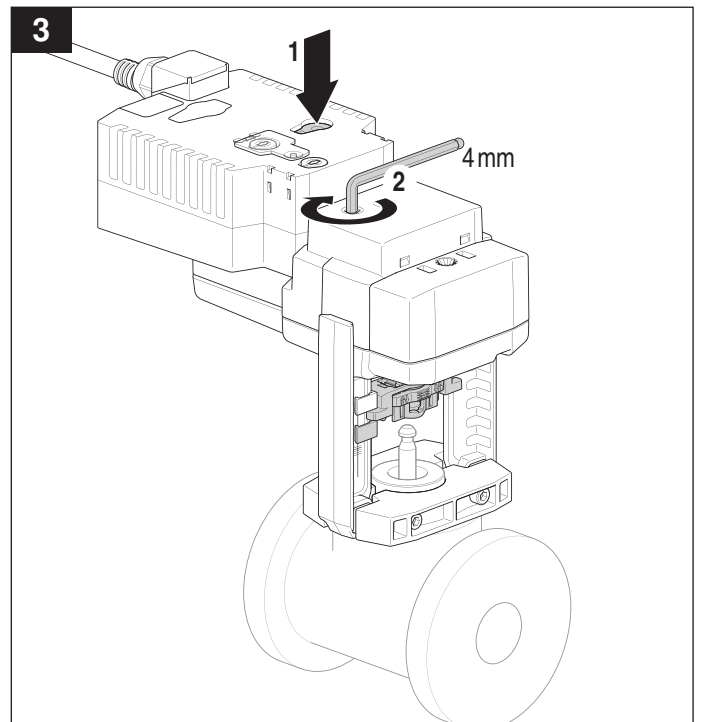
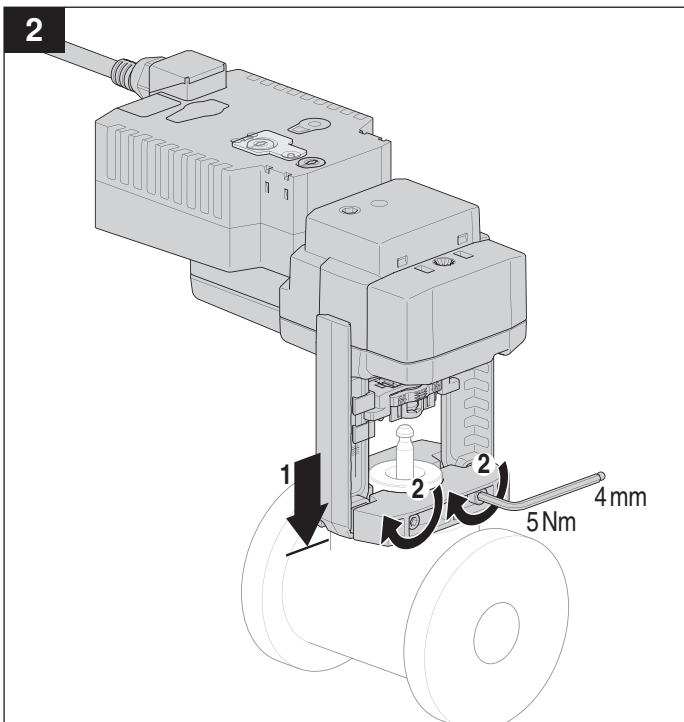
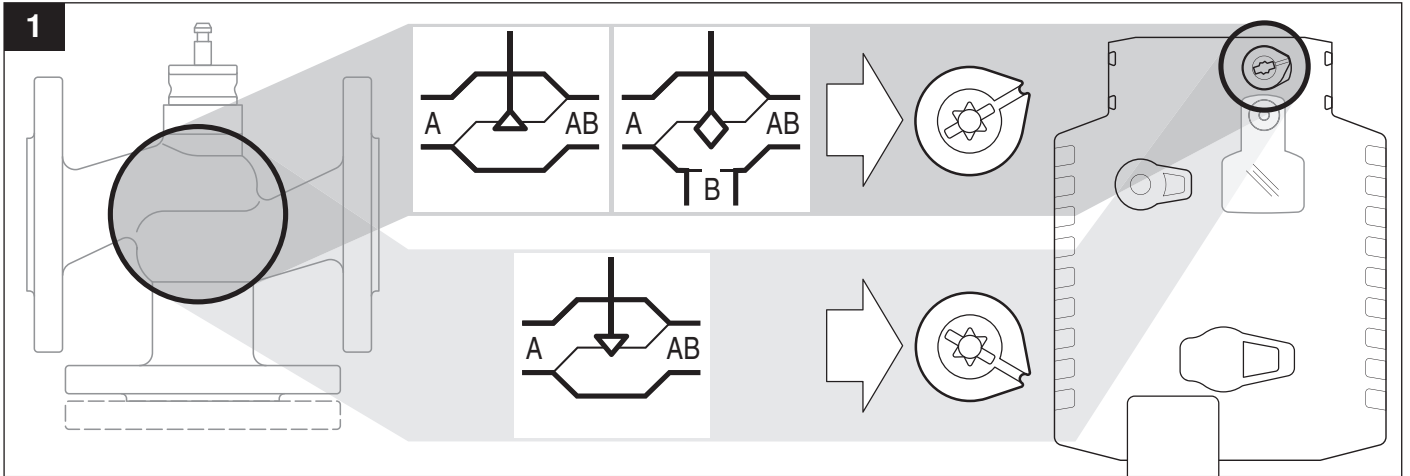
Dimensions [mm]

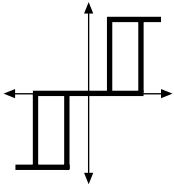
Dimensional drawings



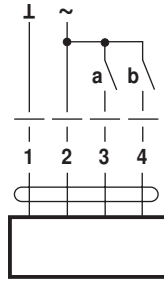
Further documentation

- Data sheets for globe valves
- Installation instructions for actuators and/or globe valves, respectively
- Notes for project planning, 2-way and 3-way globe valves
- Overview "Valve-actuator combinations"



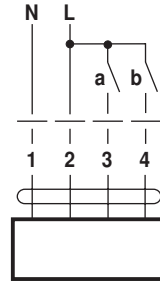


AC 24 V



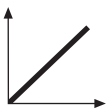
LVK(C)24A-3
NVK(C)24A-3
SVK(C)24A-3

AC 230 V

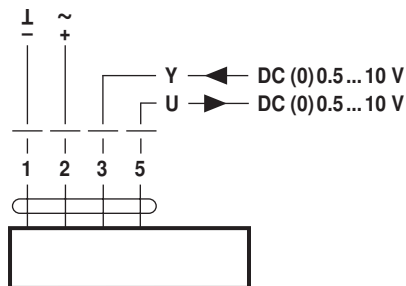


LVK230A-3
NVK230A-3
SVK230A-3

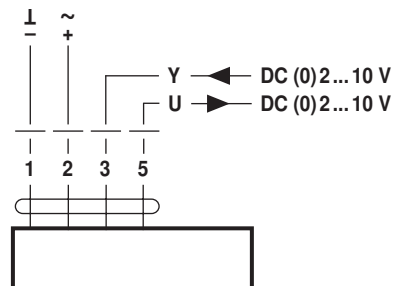
3 a	4 b		



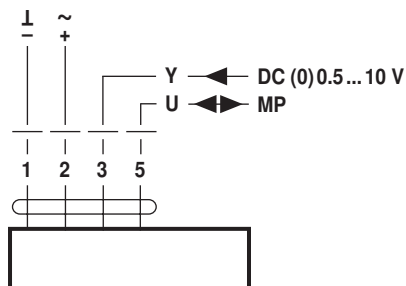
AC 24 V / DC 24 V



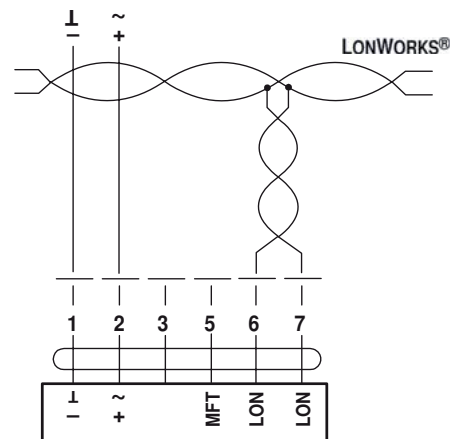
LVK(C)24A-SZ LVK(C)24A-MF
NVK(C)24A-SZ NVK(C)24A-MF
SVK(C)24A-SZ SVK(C)24A-MF



LVK(C)24A-SR
NVK(C)24A-SR
SVK(C)24A-SR



LVK(C)24A-MP
NVK(C)24A-MP
SVK(C)24A-MP



LVK24ALON
NVK24ALON
SVK24ALON