

Modulating spring-return actuator with emergency control function for adjusting dampers in technical building installations

- Air damper size up to approx. 4 m²
- Nominal torque 20 Nm
- Nominal voltage AC/DC 24 V
- Control modulating DC (0)2...10 V
- Position feedback DC 2...10 V
- with 2 integrated auxiliary switches


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	5 W
	Power consumption in rest position	3 W
	Power consumption for wire sizing	7 VA
	Auxiliary switch	2 x SPDT, 1 x 10% / 1 x 11...90%
	Switching capacity auxiliary switch	1 mA...3 (0.5 inductive) A, AC 250 V
	Connection supply / control	Cable 1 m, 4 x 0.75 mm ²
	Connection auxiliary switch	Cable 1 m, 6 x 0.75 mm ²
	Parallel operation	Yes (note the performance data)
	Functional data	Torque motor
Torque spring return		Min. 20 Nm
Positioning signal Y		DC 0...10 V
Positioning signal Y note		Input impedance 100 kΩ
Operating range Y		DC 2...10 V
Position feedback U		DC 2...10 V
Position feedback U note		Max. 0.5 mA
Position accuracy		±5%
Direction of motion motor		Selectable by mounting L / R
Direction of motion emergency control function		Selectable by mounting L / R
Manual override		By means of hand crank and locking switch
Angle of rotation		Max. 95°
Angle of rotation note		can be limited by adjustable mechanical end stop
Running time motor		150 s / 90°
Running time emergency control position		<20 s / 90°
Running time emergency setting position note		<20 s @ -20...50°C / <60 s @ -30°C
Sound power level motor		40 dB(A)
Spindle driver		Universal spindle clamp 10...25.4 mm
Position indication		Mechanical
Service life		Min. 60,000 emergency positions
Safety	Protection class IEC/EN	III Safety extra-low voltage
	Protection class UL	UL Class 2 Supply
	Protection class auxiliary switch IEC/EN	II Protective insulated
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2, UL Enclosure Type 2
	EMC	CE according to 2014/30/EU
	Low voltage directive	CE according to 2014/35/EU
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	Certification UL	cULus according to UL 60730-1A, UL 60730-2-14 and CAN/CSA E60730-1:02
	Mode of operation	Type 1.AA.B
	Rated impulse voltage supply / control	0.8 kV
	Rated impulse voltage auxiliary switch	2.5 kV
	Control pollution degree	3
Ambient temperature	-30...50°C	

Technical data

Safety	Non-operating temperature	-40...80 °C
	Ambient humidity	95% r.h., non-condensing
	Maintenance	Maintenance-free
Weight	Weight	2.5 kg

Safety notes



- The device must not be used outside the specified field of application, especially not in aircraft or in any other airborne means of transport.
- Outdoor application: only possible in case that no (sea)water, snow, ice, insolation or aggressive gases interfere directly with the actuator and that is ensured that the ambient conditions remain at any time within the thresholds according to the data sheet.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied 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.
- Cables must not be removed from the device.
- To calculate the torque required, the specifications supplied by the damper manufacturers concerning the cross-section, the design, the installation site and the ventilation conditions must be observed.
- The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Product features

Mode of operation	The actuator is connected with a standard modulating signal of DC 0 ... 10 V and moves the damper to the operating position at the same time as tensioning the return spring. The damper is turned back to the emergency position by spring force when the supply voltage is interrupted.
Simple direct mounting	Simple direct mounting on the damper spindle with an universal spindle clamp, supplied with an anti-rotation device to prevent the actuator from rotating.
Manual override	By using the hand crank the damper can be actuated manually and engaged with the locking switch at any position. Unlocking is carried out manually or automatically by applying the operating voltage.
High functional reliability	The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.
Adjustable angle of rotation	Adjustable angle of rotation with mechanical end stops.
Flexible signalization	The actuator has one auxiliary switch with a fixed setting and one adjustable auxiliary switch. They permit a 10% or 11...90% angle of rotation to be signaled.

Accessories

	Description	Type
Electrical accessories	Auxiliary switch, 2 x SPDT	S2A-F
	Feedback potentiometer, 200 Ohm, incl. installation accessories	P200A-F
	Feedback potentiometer 1 kOhm, incl. installation accessories	P1000A-F
	Signal converter voltage/current, supply AC/DC 24V	Z-UIC
	Digital position indicator for front-panel mounting, 0...99%, front mass 72 x 72 mm	ZAD24
	Range controller for wall mounting, adjustable electron. Min./max. angle of rotation limitation	SBG24
	Positioner for wall mounting, range 0...100%	SGA24
	Positioner in a conduit box, range 0...100%	SGE24
	Positioner for front-panel mounting, range 0...100%	SGF24
	Positioner for wall mounting, range 0...100%	CRP24-B1

Accessories

	Description	Type
Mechanical accessories	Shaft extension 250 mm, for damper spindles Ø 8...25 mm	AV8-25
	End stop indicator for NF..A / SF..A	IND-AFB
	Spindle clamp set for NF..A/SF..A (1", 3/4", 1/2")	K7-2
	Straight ball joint with M8, suitable for damper crank arms KH8	KG10A
	Angled ball joint with M8, suitable for damper crank arms KH8	KG8
	Damper crank arm, for damper spindles	KH8
	Damper crank arm for NF..A / SF..A, for 3/4" spindles	KH-AFB
	Form fit insert 10x10 mm, for spring return actuators NG	ZF10-NSA-F
	Form fit insert 12x12 mm, for spring return actuators NG	ZF12-NSA-F
	Form fit insert 16x16 mm, for spring return actuators NG	ZF16-NSA-F
	Damper crank arm, for spring return actuators NG	ZG-AFB
	Base plate extensions for NF..A/SF..A	Z-SF

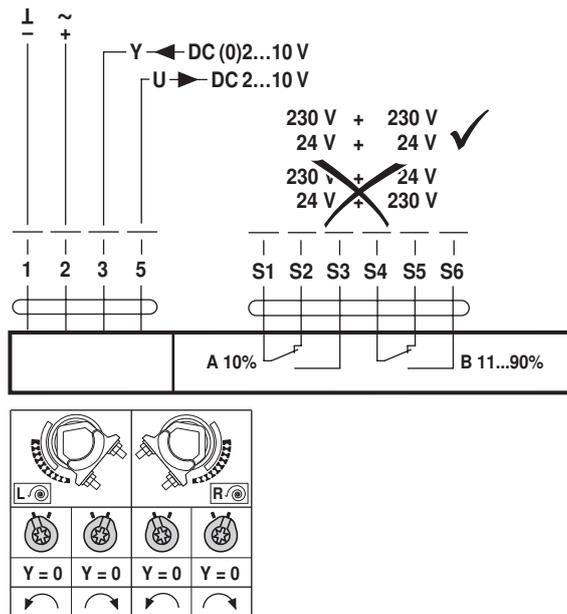
Electrical installation

Notes

- Connection via safety isolating transformer.
- Parallel connection of other actuators possible. Observe the performance data.

Wiring diagrams

AC/DC 24 V, modulating

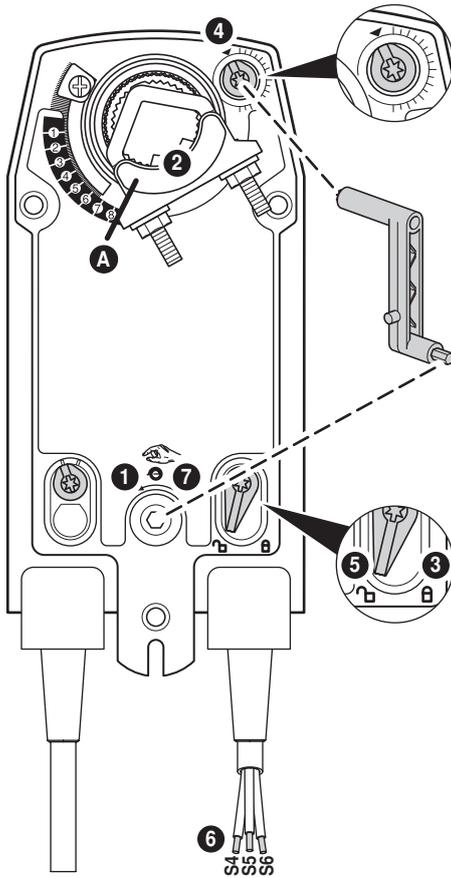


Cable colours:

- 1 = black
- 2 = red
- 3 = white
- 5 = orange
- S1 = violet
- S2 = red
- S3 = white
- S4 = orange
- S5 = pink
- S6 = grey

Operating controls and indicators

Auxiliary switch settings



Note Perform settings on the actuator only in deenergised state.

- 1 Manual override**
Turn the hand crank until the desired switching position is set.
- 2 Spindle clamp**
Edge line **A** displays the desired switching position of the actuator on the scale.
- 3 Fasten the locking device**
Turn the locking switch to the "Locked padlock" symbol.
- 4 Auxiliary switch**
Turn rotary knob until the notch points to the arrow symbol.
- 5 Unlock the locking device**
Turn the locking switch to the "Unlocked padlock" symbol or unlock with the hand crank.
- 6 Cable**
Connect continuity tester to S4 + S5 or to S4 + S6.
- 7 Manual override**
Turn the hand crank until the desired switching position is set and check whether the continuity tester shows the switching point.

Dimensions [mm]

Spindle length

	Min. 85
	Min. 15

Clamping range

	10...22	10	14...25.4
	19...25.4	12...18	

Dimensional drawings

