BELIMO

Technical data sheet EF24A-S2

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

- **Air damper size up to approx. 6 m²**
- **Nominal torque 30 Nm**
- **Nominal voltage AC/DC 24 V**
- **Control Open-close**
- **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	9.5 W
	Power consumption in rest position	4.5 W
	Power consumption for wire sizing	16 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, 2 x 0.75 mm²
	Connection auxiliary switch	Cable 1 m, 6 x 0.75 mm²
	Parallel operation	Yes (note the performance data)
Functional data	Torque motor	Min. 30 Nm
	Torque spring return	Min. 30 Nm
	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	adjustable starting at 33% in 5% steps (with mechanical end stop)
	Running time motor	75 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	56 dB(A)
	Sound power level emergency control position	71 dB(A)
	Spindle driver	Universal spindle clamp 12...26.7 mm
	Position indication	Mechanical
	Service life	Min. 60,000 emergency positions
Safety	Protection class IEC/EN	III Safety extra-low voltage
	Protection class auxiliary switch IEC/EN	II Protective insulated
	Degree of protection IEC/EN	IP54
	EMC	CE according to 2004/108/EC
	Low voltage directive	CE according to 2006/95/EC
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	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
	Non-operating temperature	-40...80°C
	Ambient humidity	95% r.h., non-condensing
	Maintenance	Maintenance-free
Weight	Weight	5.4 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 two switches integrated in the actuator are to be operated either on power supply voltage or at safety extra-low voltage. The combination power supply voltage/ safety extra-low voltage is not permitted.
- 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 moves the damper to the operating position at the same time as tensioning the return spring. The damper is turned back to the safety position by spring energy 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.

Spindle stabiliser
The spindle clamp of the spring-return actuator is factory-equipped with an axis stabiliser for the stabilisation of the combination of damper, damper spindle and actuator.
This is comprised of two plastic support rings and must be left in place, partially or completely removed, depending on the installation situation and the axis diameter.

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

Mechanical accessories

Description	Type
End stop indicator for EF..A	IND-EFB
Spindle clamp set for EF..A (1", 3/4"), for damper spindles Ø 12...26.7	K9-2
Damper crank arm, for damper spindles	KH10
Actuator arm for EF..A	KH-EFB
Mounting kit for linkage operation	ZG-EFB

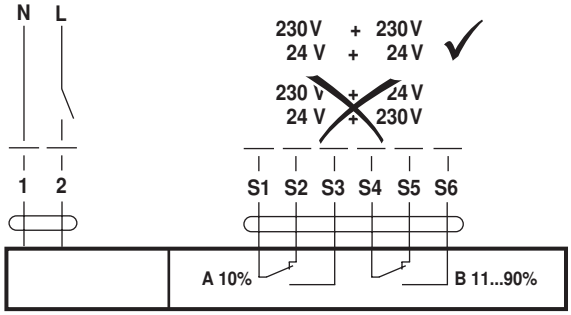
Electrical installation

Notes

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

Wiring diagrams

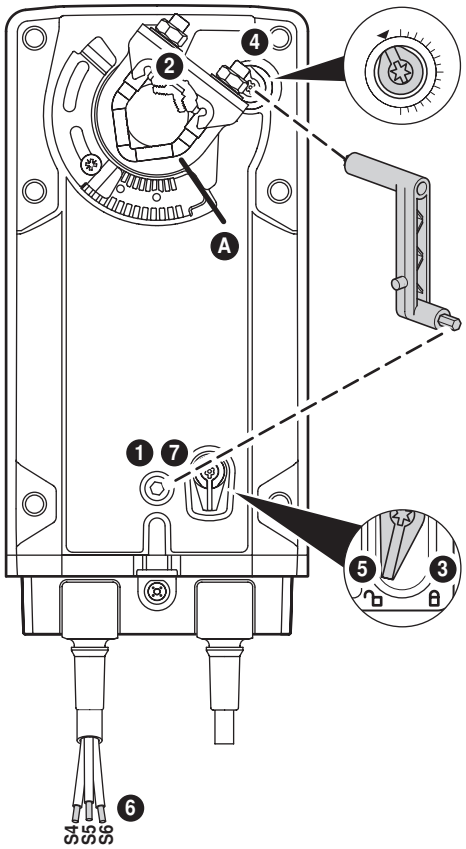
AC/DC 24 V, open-close



Cable colours:
1 = black
2 = red
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.

Installation notes

Notes

- The spindle stabiliser must nevertheless be used with installation of the anti-rotation device on the opposite side of the spindle clamp and a spindle diameter <20 mm.

Spindle stabiliser long spindle mounting

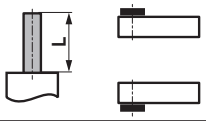
In the case of long spindle installation the use of the spindle stabiliser at a spindle diameter of
- 12 to 20 mm is necessary
- 21 to 26.7 mm is not necessary and can be removed

Spindle stabiliser short spindle mounting

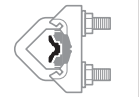
In the case of short spindle installation, the necessity of the spindle stabiliser is dispensed with. It can be removed or – if the spindle length permits this – left in the clamp.

Dimensions [mm]

Spindle length

	Min. 117
	Min. 20

Clamping range

		
	12...22	12...18
		
	22...26.7	12...18

Dimensional drawings

