BELIMO

Technical data sheet LM230A-S

Damper actuator for adjusting dampers in technical building installations

- Air damper size up to approx. 1 m²
- Torque motor 5 Nm
- Nominal voltage AC 100...240 V
- Control Open/close, 3-point
- with integrated auxiliary switch

Technical data

Electrical data	Nominal voltage	AC 100...240 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 85...265 V
	Power consumption in operation	1.5 W
	Power consumption in rest position	0.5 W
	Power consumption for wire sizing	3.5 VA
	Auxiliary switch	1 x SPDT, 0...100%
	Switching capacity auxiliary switch	1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V
	Connection supply / control	Cable 1 m, 3 x 0.75 mm²
	Connection auxiliary switch	Cable 1 m, 3 x 0.75 mm²
	Parallel operation	Yes (note the performance data)
Functional data	Torque motor	5 Nm
	Direction of motion motor	selectable with switch 0 (ccw rotation) / 1 (cw rotation)
	Manual override	with push-button, can be locked
	Angle of rotation	Max. 95°
	Angle of rotation note	can be limited on both sides with adjustable mechanical end stops
	Running time motor	150 s / 90°
	Sound power level, motor	35 dB(A)
	Mechanical interface	Universal shaft clamp 6...20 mm
	Position indication	Mechanical, pluggable
Safety data	Protection class IEC/EN	II, reinforced insulation
	Protection class UL	II, reinforced insulation
	Protection class auxiliary switch IEC/EN	II, reinforced insulation
	Degree of protection IEC/EN	IP54
	Degree of protection NEMA/UL	NEMA 2
	Enclosure	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
	UL Approval	cULus according to UL60730-1A, UL60730-2-14 and CAN/CSA E60730-1 The UL marking on the actuator depends on the production site, the device is UL-compliant in any case
	Type of action	Type 1.B
	Rated impulse voltage supply / control	2.5 kV
	Rated impulse voltage auxiliary switch	2.5 kV
	Pollution degree	3

Safety data	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-30...50°C [-22...122°F]
	Storage temperature	-40...80°C [-40...176°F]
	Servicing	maintenance-free
Weight	Weight	0.54 kg

Safety notes

- This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially 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 device and that it is ensured that the ambient conditions remain within the thresholds according to the data sheet at any time.
- Caution: Power supply voltage!
- 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 situation 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

Simple direct mounting Simple direct mounting on the damper shaft with a universal shaft clamp, supplied with an anti-rotation device to prevent the actuator from rotating.

Manual override Manual override with push-button possible (the gear train is disengaged for as long as the button is pressed or remains locked).

Adjustable angle of rotation Adjustable angle of rotation with mechanical end stops.

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

Flexible signalling With adjustable auxiliary switch (0...100%)

Accessories

Electrical accessories

Description	Type
Auxiliary switch 1 x SPDT add-on	S1A
Auxiliary switch 2 x SPDT add-on	S2A
Feedback potentiometer 140 Ω add-on	P140A
Feedback potentiometer 200 Ω add-on	P200A
Feedback potentiometer 500 Ω add-on	P500A
Feedback potentiometer 1 kΩ add-on	P1000A
Feedback potentiometer 2.8 kΩ add-on	P2800A
Feedback potentiometer 5 kΩ add-on	P5000A
Feedback potentiometer 10 kΩ add-on	P10000A

Mechanical accessories

Description	Type
Shaft extension 170 mm Ø10 mm for damper shaft Ø 6...16 mm	AV6-20
Shaft clamp one-sided, clamping range Ø6...20 mm, Multipack 20 pcs.	K-ELA
Shaft clamp one-sided, clamping range Ø6...10 mm, Multipack 20 pcs.	K-ELA10
Shaft clamp one-sided, clamping range Ø6...13 mm, Multipack 20 pcs.	K-ELA13
Shaft clamp one-sided, clamping range Ø6...16 mm, Multipack 20 pcs.	K-ELA16
Anti-rotation mechanism 180 mm, Multipack 20 pcs.	Z-ARS180
Form fit insert 8x8 mm, Multipack 20 pcs.	ZF8-LMA
Form fit insert 10x10 mm, Multipack 20 pcs.	ZF10-LMA
Form fit insert 12x12 mm, Multipack 20 pcs.	ZF12-LMA
Form fit insert 8x8 mm, with angle of rotation limiter and position indication, Multipack 20 pcs.	ZFRL8-LMA
Form fit insert 10x10 mm, with angle of rotation limiter and position indication, Multipack 20 pcs.	ZFRL10-LMA
Form fit insert 12x12 mm, with angle of rotation limiter and position indication, Multipack 20 pcs.	ZFRL12-LMA
Position indicator, Multipack 20 pcs.	Z-PI

Electrical installation

Caution: Power supply voltage!

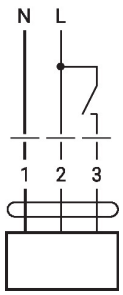
Parallel connection of other actuators possible. Observe the performance data.

Wire colours:

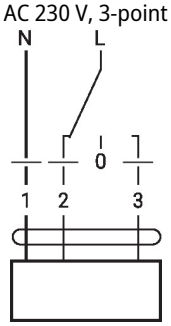
1 = blue
2 = brown
3 = white
S1 = violet
S2 = red
S3 = white

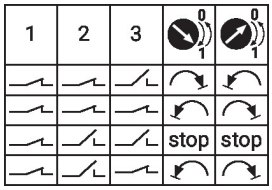
Wiring diagrams

AC 230 V, open/close

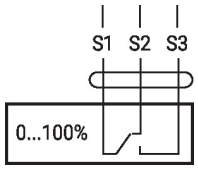


AC 230 V, 3-point

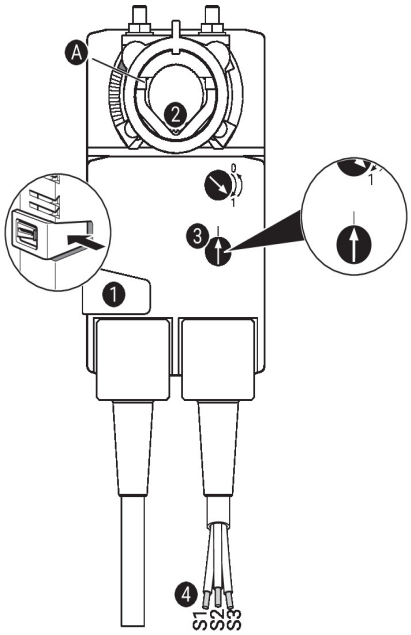




Auxiliary switch



Operating controls and indicators



Auxiliary switch settings

⚠ **Note:** Perform settings on the actuator only in deenergised state.

For the auxiliary switch position settings, carry out points ❶ to ❹ successively.

❶ **Manual override button**
Holding button pressed down: Gear train disengages.
Manual override is possible.

❷ **Shaft clamp**
Turn until edge line Ⓐ displays the desired switching position of the actuator and release button ❶.

❸ **Auxiliary switch**
Turn rotary knob until the arrow points to the vertical line.

❹ **Cable**
Connect continuity tester to S1 + S2 or to S1 + S3.
If the auxiliary switch should switch in the opposite direction, rotate the auxiliary switch by 180°.

Dimensions

Spindle length

L	Min. 37
	-

Clamping range

6...20	≥6	≤20