Damper actuator for adjusting dampers in technical building installations

- Air damper size up to approx. 0.8 m²
- Torque motor 4 Nm
- Nominal voltage AC/DC 24 V
- Control Open/close (unsuitable for 3-point controls)
- Running time motor 2.5 s
- PWIS/LABS-compliant according to VDMA 24364

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	13 W
	Power consumption in rest position	2 W
	Power consumption for wire sizing	23 VA
	Power consumption for wire sizing note	Imax 20 A @ 5 ms
	Connection supply / control	Cable 1 m, 3x 0.75 mm²
	Parallel operation	Yes (note the performance data)
Functional data	Torque motor	4 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
	Minimum angle of rotation	Min. 30°
	Running time motor	2.5 s / 90°
	Sound power level, motor	54 dB(A)
	Mechanical interface	Universal shaft clamp 8...26.7 mm
	Position indication	Mechanical, pluggable
Safety data	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)
	Power source UL	Class 2 Supply
	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
	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
	PWIS/LABS-conformity	According to VDMA 24364 (test class C1) Approved for use in zone II Cleaning with low-pressure plasma treatment

Technical data

Safety data	Hygiene test	According to VDI 6022 Part 1 / SWKI VA 104-01, cleanable and disinfectable, low emission
	Type of action	Type 1
	Rated impulse voltage supply / control	0.8 kV
	Pollution degree	3
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-30...40°C [-22...104°F]
	Ambient temperature note	Caution: 40...50°C [104...122°F] utilisation possible only under certain restrictions. Please contact your supplier.
	Storage temperature	-10...40°C [14...104°F]
	Servicing	maintenance-free
Weight	Weight	0.87 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.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with 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.
- Self adaptation is necessary when the system is commissioned and after each adjustment of the angle of rotation (press the adaptation push-button once).
- To calculate the torque required, the specifications supplied by the damper manufacturers concerning the cross-section and the design, as well as 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.
- PWIS/LABS-conformity is guaranteed as long as the packaging is unopened. Once the PWIS/LABS-compliant packaging has been opened, the proper handling of the products is the responsibility of the customer. PWIS/LABS-conformity of unopened products is guaranteed for a period of one year after cleaning, provided they are handled properly, professionally and cleanly. Proof of proper, professional and clean handling is the responsibility of the purchaser. Ensure that the required cleanliness of the products is maintained. Do not touch the products with bare hands. Belimo accepts no liability for the consequences resulting from the contamination of a product caused by the customer.

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. A minimum permissible angle of rotation of 30° must be allowed for.

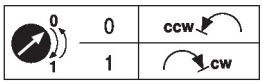
Product features

Home position

The first time the supply voltage is switched on, i.e. at the time of commissioning, the actuator carries out an adaptation, which is when the operating range and position feedback adjust themselves to the mechanical setting range.

The detection of the mechanical end stops enables a gentle approach to the end positions, thus protecting the actuator mechanics.

The actuator then moves into the position defined by the control signal.



Accessories

Electrical accessories

Description	Type
Auxiliary switch 1x SPDT add-on	S1A
Auxiliary switch 2x SPDT add-on	S2A
Feedback potentiometer 140 Ω add-on	P140A
Feedback potentiometer 1 kΩ add-on	P1000A
Feedback potentiometer 10 kΩ add-on	P10000A
Adapter for auxiliary switch and feedback potentiometer, Multipack 20 pcs.	Z-SPA

Mechanical accessories

Description	Type
Actuator arm for standard shaft clamp (one-sided)	AH-25
Shaft extension 240 mm ø20 mm for damper shaft ø8...22.7 mm	AV8-25
Ball joint suitable for damper crank arm KH8	KG8
Ball joint suitable for damper crank arm KH8 / KH10	KG10A
Damper crank arm Slot width 8.2 mm, clamping range ø10...18 mm	KH8
Shaft clamp one-sided, clamping range ø8...26 mm with insert, Multipack 20 pcs.	K-ENMA
Shaft clamp one-sided, clamping range ø8...26 mm, Multipack 20 pcs.	K-ENSA
Shaft clamp reversible, clamping range ø8...20 mm	K-NA
Form fit insert 8x8 mm, Multipack 20 pcs.	ZF8-NMA
Form fit insert 10x10 mm, Multipack 20 pcs.	ZF10-NSA
Form fit insert 12x12 mm, Multipack 20 pcs.	ZF12-NSA
Form fit insert 15x15 mm, Multipack 20 pcs.	ZF15-NSA
Form fit insert 16x16 mm, Multipack 20 pcs.	ZF16-NSA
Mounting kit for linkage operation for flat installation	ZG-NMA
Anti-rotation mechanism 180 mm, Multipack 20 pcs.	Z-ARS180
Baseplate extension for NM..A to NM..	Z-NMA
Position indicator, Multipack 20 pcs.	Z-PI

* Adapter Z-SPA

It is imperative that this adapter will be ordered if an auxiliary switch or a feedback potentiometer is required and if at the same time the shaft clamp is installed on the rear side of the actuator (e.g. with short shaft installation).

Electrical installation

Supply from isolating transformer.

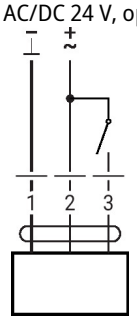
Parallel connection of other actuators possible. Observe the performance data.

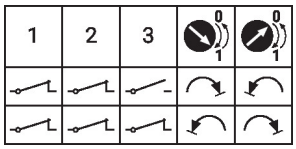
Wire colours:
1 = black
2 = red
3 = white

Electrical installation

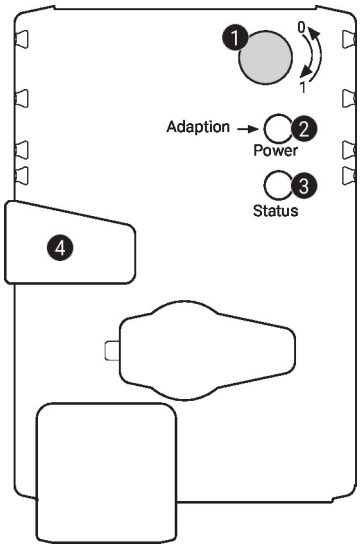
Wiring diagrams

AC/DC 24 V, open/close





Operating controls and indicators



1 Direction of rotation switch

Switch over:	Direction of rotation changes

2 Push-button and LED display green

Off:	No power supply or malfunction
On:	In operation
Press button:	Triggers angle of rotation adaptation, followed by standard mode

3 Push-button and LED display yellow

Off:	Standard mode
On:	Adaptation or synchronisation process active
Press button:	No function

4 Manual override button

Press button:	Gear train disengages, motor stops, manual override possible
Release button:	Gear train engages, synchronisation starts, followed by standard mode

Check power supply connection

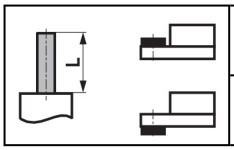
2 Off and 3 On	Possible wiring error in power supply

Installation notes

Negative torque	Max. 50% of the torque (Caution: Application possible only with restrictions. Please contact your supplier.)

Dimensions

Spindle length

	Min. 40
	Min. 20 mm [0.75"]

Clamping range

	8...26.7	≥8	≤26.7
*	8...20	≥8	≤20

• *Option: Shaft clamp mounted below (accessories K-NA needed)
• *Option: Shaft clamp mounted below: If an auxiliary switch or a feedback potentiometer is used the adapter Z-SPA is required.