

# **Technical data sheet**

# SF24ALON

Spring return actuator for LONWORKS<sup>®</sup> with emergency function for adjusting air dampers in ventilation and air conditioning systems in buildings

- For air dampers up to approx. 4 m<sup>2</sup>
- Torque 20 Nm
- Nominal voltage AC/DC 24 V
- Communications via LONWORKS® (FTT-10A)
- Conversion of sensor signals
- Integrated temperature controller





Technical data								
Electrical data								
Nominal voltage	AC 24 V, 50/60 Hz / DC 24 V							
Nominal voltage range	AC 19.2 28.8 V / DC 21.6 28.8 V							
Power consumption Operation	8.5 W @ nominal torque							
At rest	3.5 W							
For wire sizing	11 VA							
Connection	Cable 1 m, 6 x 0.75 mm <sup>2</sup>							
Data for LONWORKS®								
Certified	in accordance with LONMARK <sup>®</sup> 3.3							
Processor	Neuron 3150							
Transceiver	FTT-10A, compatible with LPT-10							
Functional Profile as per LONMARK®	Damper actuator object #8110							
	Open Loop Sensor Object #1							
	Thermostat Object #8060							
LNS plug-in for actuator / sensor / controller	Can be run with any LNS-based integration tool (min. for LNS 3.x)							
Service button and status LED	in accordance with guidelines LONMARK®							
Conductors, cables	Conductor lengths, cable specifications and							
	topology of the LONWORKS® network in							
	accordance with the ECHELON® guidelines							
Functional data	Factory settings	Variable	Setting					
Torque (nominal torque) Motor	Min. 20 Nm @ nominal voltage							
Spring return	Min. 20 Nm							
Position feedback (measuring voltage U)	DC 2 10 V, max. 0.5 mA	Start point DC 0.5 8 V End point DC 2.5 10 V						
Position accuracy	±5%							
Direction of rotation Motor	Reversible with switch $\frown$ / $\frown$							
Spring return	By mounting							
Direction of motion at Y = 0%	At switch position 1 🔿 resp. 0 🖉							
Manual override	With hand crank and interlocking switch							
Angle of rotation	Max. 95°, adjustable from 33% in 5% steps (with enclosed angle of rotation limiter)							
Running time Motor	≤150 s / 95°∢	70 220 s						
Spring return	≤20 s @ –20 50°C / max. 60 s @ –30°C							
Automatic adjustment of running time, control	Manual triggering of the adaption by pressing	Automatic adaption whenever the						
and feedback to match the mechanical angle of rotation	the «Adaption» button or with the PC-Tool	supply voltage is switched on, or manual triggering						
Override controls,	MAX (maximum position) = 100%	MAX = (MIN + 30°⊲) 100%						
controllable via nviManOvrd	MIN (minimum position) = 0%	MIN = 0% (MAX − 30°<)						
	ZS (intermediate position, only AC) = 50%	ZS = MIN MAX						
Sound power level Motor	≤40 dB (A) @ 150 s running time							
Spring return	≤62 dB (A)							
Service life	Min 60,000 emergency positions							
Position indication	Mechanical							

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# Federrücklaufantrieb für LONWORKS®, AC/DC 24 V, 20 Nm



Technical data	(continued)			
Safety				
Protection class	III Safety extra-low voltage			
Degree of protection	IP54			
EMC	CE according to 2004/108/EC			
Certification	Certified to IEC/EN 60730-1 and IEC/EN 60730-2-14			
Mode of operation	Туре 1			
Rated impulse voltage	0.8 kV			
Control pollution degree	3			
Ambient temperature	−30 +50 ° C			
Non-operating temperature	–40 +80 ° C			
Ambient humidity range	95% r.h., non-condensating			
Maintenance	Maintenance-free			
Dimensions / Weight				
Dimensions	See «Dimensions» on page 3			
Weight	Approx. 920 g			

## Safety notes

Â	<ul> <li>The actuator is not allowed to be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.</li> <li>They may only be installed by suitably trained personnel. Any legal regulations or regulations issued by authorities must be observed during assembly.</li> <li>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.</li> <li>The cable must not be removed from the device.</li> <li>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.</li> </ul>				
Product features					
Mode of operation	The actuator is equipped with an integrated interface for LONWORKS <sup>®</sup> . The actuator can be connected and controlled directly with LONWORKS <sup>®</sup> via transceiver FTT-10A.				
Converter for sensors	Connection option for a sensor (passive or active sensor or switching contact). In this way, the analogue sensor signal can be easily digitised and transferred to LONWORKS <sup>®</sup> .				
Simple direct mounting	Simple direct mounting on the damper spindle with a universal spindle clamp, supplied with an anti-rotation strap to prevent the actuator from rotating.				
High operational reliability	The actuator is overload-proof, requires no limit switches and automatically stops when the end stop is reached.				
Home position	When the supply voltage is switched on, the actuator automatically detects its emergency position (zero initialisation). This process, which takes place with the actuator stationary, lasts <15 s.				

## Accessories

	Description
Electrical accessories	BELIMO Service tool MFT-P
	Adjustment and diagnostic tool ZTH-GEN
Mechanical accessories	Various accessories (clamps, shaft extensions)

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Federrücklaufantrieb für LONWORKS®, AC/DC 24 V, 20 Nm



#### **Operating controls and indicators**



#### (1) Membrane key and green LED display

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	Off:	No voltage supply or malfunction
	On:	Operation
	Press button:	Switches on angle of rotation adaption followed by standard operation
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#### (2) Membrane key and yellow LED display

Off: The actuator is integrated ready-for-operation in the LONWORKS® network. On: No application software is loaded in the actuator. Blinking: The actuator is ready-for-operation, but not integrated in the LONWORKS® (flashing interval 2 s) network (unconfigured). Other flashing codes: A fault is present in the actuator. Press button: Service Pin Message will be sent to the LONWORKS® network.

## (3) Service plug

For connecting parameterising and service tools

**Operating controls** 

The hand crank, interlocking switch and direction of rotation switch are provided on both sides.

#### **Dimensions** [mm]

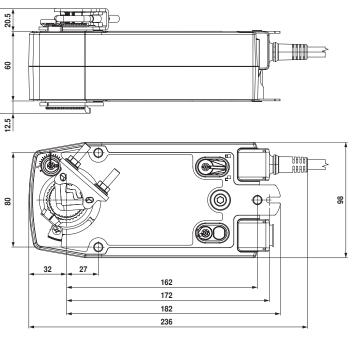
**Dimensional drawings** 

Variant 1a: ¾" <b>-spindle clam</b>	<b>p</b> (with in:	sertion par	rt) EU	J Standard	66 1	12.5						
Damper spindle	Length	<u>O</u> I		<b>♦</b> <u>1</u>		12						
<b>A</b>	≥85	1022	10	1425.4		-						
	≥15	1022	10	1423.4		Î	l		Ľ	U		
Variant 1b: 1"-spindle clamp (without insertion part) EU Standard						80				X	2	
Damper spindle	Length	01							and and	1)		
	≥85	1925	i.4	1218			N			ン		
	≥15	(26.7)	)	1210		1	1	$\mathbb{R}$	T	$\bigcirc$		

Variant 2:

1/2"-spindle clamp (optional via configuration)

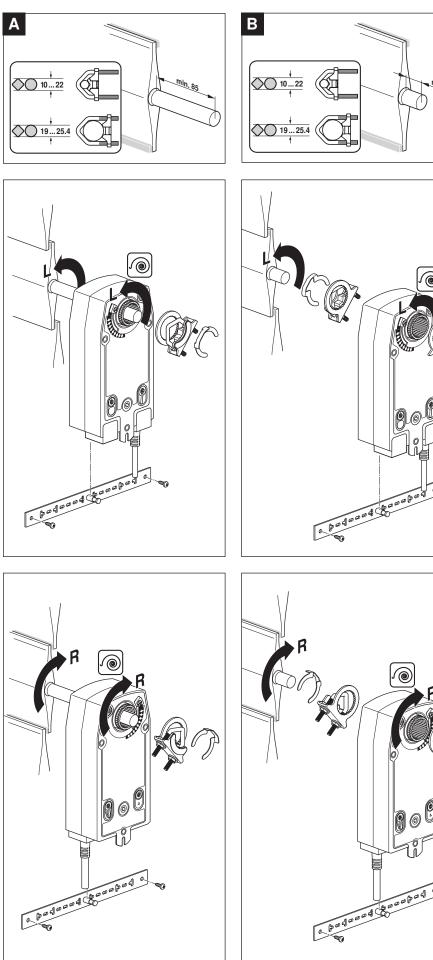
Damper spindle	Length	OĪ	<u>♦</u> <u>ī</u>
Ē	≥85	1019	1420
<u> </u>	≥15	1019	1420

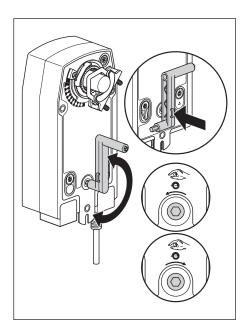




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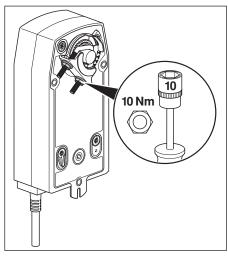


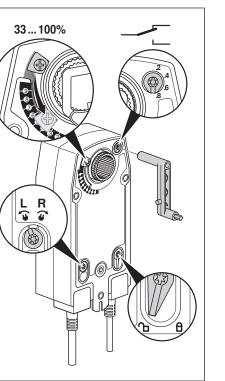
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