



## NENUTEC AIR - ROTARY DAMPER ACTUATOR

WITH ELECTRONIC FAIL-SAFE® FUNCTION 5 Nm | OPEN-CLOSED CONTROL



### FSAA24/230-05 SERIES

Rotary damper actuators with Electronic Fail-Safe® (EFS®) function are designed and produced for extended functionalities in HVAC systems, fan coil and laboratory applications.

Electronic Fail-Safe® (EFS®) is able to manage short voltage interruptions for max. 4 seconds. In case of longer voltage interruption they will move the dampers or valves if necessary to a pre-defined emergency position (EPS).

- Damper size 1.0 m<sup>2</sup>
- Power supply AC24V - 50/60 Hz - DC 24V / AC230V
- Control 2 point
- Digital greentech technology
- Shaft dimensions  
Ø 6 to 16 mm round / 5 to 12 mm square
- Minimum shaft length 40 mm
- Selectable direction of rotation by switch
- Adjustable angle of rotation (mechanical)
- Actuator with 1000 mm cable connection
- Customer version (on request)



Pictures might not correspond with technical data.

#### MODEL SELECTION TABLE

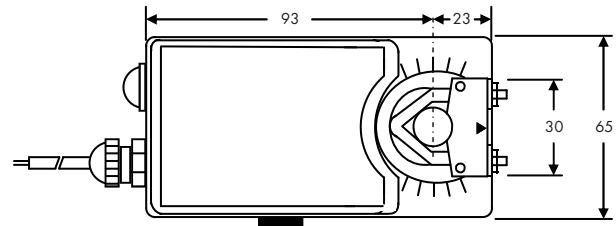
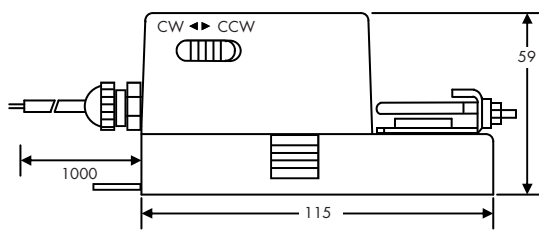
Torque	Running time (Power)	(Fail-Safe)	Power supply	Auxiliary switch	Model / Type
5 Nm	75...85 sec	25 sec	AC/DC 24 V ± 15%	No	FSAA24-05
5 Nm	75...85 sec	25 sec	AC 230 V ± 10%	No	FSAA230-05



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### ACTUATOR DIMENSIONS (mm)



### TECHNICAL SPECIFICATIONS

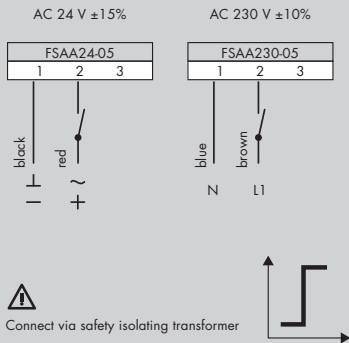
	FSAA24-05	FSAA230-05
Torque	5 Nm	5 Nm
Damper size	1.0 m <sup>2</sup>	1.0 m <sup>2</sup>
Shaft dimensions	Ø 6 to 16 mm round / □ 5 to 12 mm square	Ø 6 to 16 mm round / □ 5 to 12 mm square
Power supply	AC 24V / DC 24V ± 15%	AC 230V ± 10%
Frequency	50 - 60 Hz	50 - 60 Hz
Control signal	2 point	2 point
Power consumption		
- Operating	1.5 W	1.5 W
- End position	0.5 W	0.5 W
For wire sizing	14 VA	14 VA
Parallel operation	yes (review performance data)	yes (review performance data)
Protection class	III ⚡	II ⚡
Charging time commissioning	30 sec	30 sec
Angle of rotation	max. 95°	max. 95°
Angle of limiting	can be limited at both ends with adjustable mechanical end stops.	
Weight	< 0.55 kg	< 0.55 kg
Life cycle actuator	100'000 full cycles / 1'000'000 partial cycles	100'000 full cycles / 1'000'000 partial cycles
Sound level motor and EFS	42 dB (A)	42 dB (A)
IP protection	IP 54 (dust protected & protected against splash water)	IP 54 (dust protected & protected against splash water)
Operating temperature	-30°...+50° C / IEC 721-3-3	-30°...+50° C / IEC 721-3-3
Non-operating temperature	-40°...+80° C / IEC 721-3-2	-40°...+80° C / IEC 721-3-2
Ambient humidity	5%...95% rH non condensing	5%...95% rH non condensing
Maintenance	Maintenance free	Maintenance free
Mode of operation	Type I / EN 60730-1	Type I / EN 60730-1
EMC	CE according to 2004/108 / EC	CE according to 2004 / 108 / EC



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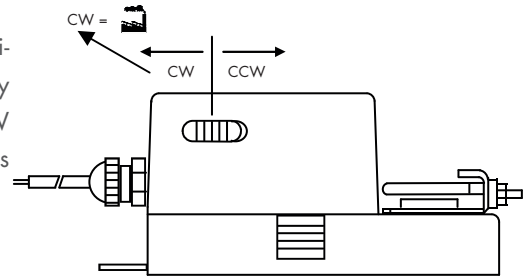
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Wiring diagram FSAA24/230-05



### ■ Changing direction of rotation FSAA24/230-05

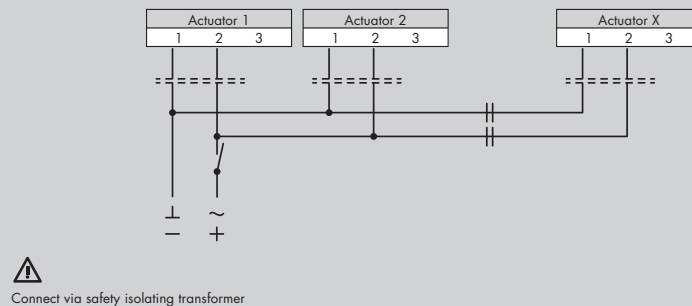
Factory-set CW!  
The direction of rotation can be changed by pushing the CW/CCW switch on the actuator's housing.



### ■ Information

- maximum 5 actuators can be connected in parallel.
- Parallel operation is permitted only on separated damper on valve axes.
- It is imperative that the performances data be observed.

Wiring diagram for parallel operation FSAA24/230-05



## PRODUCT FEATURES

### ■ Mode of operation

The FSAA actuator moves the air damper into a fully open or to the desired operating position at the same time as integrated capacitors are loaded. Interruption of power supply causes the damper or valve to be rotated back to a predefined emergency position (EPS).

### ■ Delivery conditions of FSAA actuators

Actuator is delivered completely discharged, which is why the actuator requires approx. 30 sec pre-charging time before initial commissioning. High functional reliability FSAA actuators are overload protected and do not require any limit switches. The actuators stop automatically at the end position.



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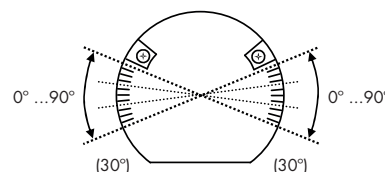
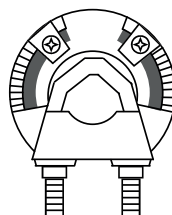
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### ■ Mechanical limiting angle of rotation FS... 05 series

Adjustment of mechanical limiter

1. Loosen screw of mechanical limiter
2. Move limiter to appropriate position \*
3. Tighten screw

\* Working range of 90° can be reduced up to 30° from each end position.



### ! SAFETY NOTES

- The FS... actuators are not allowed to be used outside the specified field of application as described at the front page of this data sheet.
- Only to be installed by skill educated persons. Any legal regulations or issued by authorities must be observed during installation.
- The FS... actuator may only opened by NENUTEC manufacturer site. Device does not contain any parts that can be replaced by user.
- The electrical connection cable must not be removed from the FS... actuator.
- This actuator includes electrical and electronic components and may not be disposed as household garbage. Please consider the local valid legislation.
- AC 24V - 50/60 Hz - DC 24V: Connect via safety isolating transformer.
- AC 230V: To isolate from the main power supply, the system must incorporate a device which disconnects the phase conductor (with at least 3 mm contact gap).

### ! IMPORTANT REMARKS

This actuator includes electrical and electronic components and may not be disposed as household garbage. Please consider the local valid legislation.



AC/DC 24 V: Connect via safety isolating transformer. AC 230 V: To isolate from the main power supply, the system must incorporate a device which disconnects the phase conductor (with at least a 3 mm contact gap).

Consult NENUTEC representatives for specific requirements and material selections for your intended application. The entire content of this technical datasheet is protected by copyright with all rights reserved ©.

The performance specifications are nominal and conform to acceptable industry standards. NENUTEC shall not be liable for damages resulting from misapplication or misuse of its products.

### CUSTOMISED VERSION

NENUTEC offers you actuators in customised versions, e.g. with your own brand name, with colour-coordinated applications and with your particular demand on request.

Please contact us for further information.

NENUTEC AG

Schachenstrasse 80  
CH - 8645 Jona/SG - Switzerland  
T: +41 55 224 40 60  
F: +41 55 224 40 69  
www.nenutec.com

Distributor

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