

DSF24/16, DSF230/16 Actuators

Application

DSF24/16 and DSF230/16 actuators with safety function (spring return) with 2-point control are used in ventilation and air conditioning (VAC) plants to control air dampers in VAC systems.

When the power supply is interrupted, the spring force moves the air dampers back into the fail-safe position.

The drives are equipped with a universal adapter and are mounted directly on the air damper axle.



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Änderungen vorbehalten - Contents subject to change - Sous réserve de modifications - Reservado el derecho a modificación - Wijzigingen voorbehouden - Con riserva di modifiche - Innehåll som skall ändras - Změny vyhrazeny - Zmiany zastrzeżone - Возможны изменения - A változtatások jogát fenntartjuk - 保留未经通知而改动的权力

Important Information Regarding Product Safety

Safety Instructions

This data sheet contains information on installing and commissioning the product "DSF24/16, DSF230/16". Each person who carries out work on this product must have read and understood this data sheet. If you have any questions that are not resolved by this data sheet, you can obtain further information from the supplier or manufacturer.

If the product is not used in accordance with this data sheet, the protection provided will be impaired.

Applicable regulations must be observed when installing and using the device. Within the EU, these include regulations regarding occupational safety and accident prevention as well as those from the VDE (Association for Electrical, Electronic & Information Technologies). If the device is used in other countries, it is the responsibility of the system installer or operator to comply with local regulations.

Mounting, installation and commissioning work on the devices may only be carried out by qualified technicians. Qualified technicians are persons who are familiar with the described product and who can assess given tasks and recognize possible dangers due to technical training, knowledge and experience as well as knowledge of the appropriate regulations.

Legend



WARNING

Indicates a hazard of medium risk which can result in death or severe bodily injury if it is not avoided.



CAUTION

Indicates a hazard of low risk which can result in minor or medium bodily injury if it is not avoided.



CAUTION

Indicates a hazard of medium risk which can result in material damage or malfunctions if it is not avoided.



NOTE

Indicates additional information that can simplify the work with the product for you.

Notes on Disposal

For disposal, the product is considered waste from electrical and electronic equipment (electronic waste) and must not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

Product Description**DSF24/16, DSF230/16****Item**

DSF24/16	AC/DC 24 V actuator with spring return, 16 Nm torque
DSF230/16	AC 230 V actuator with spring return, 16 Nm torque
DSF24/16/E	Data same as that for DSF24/16, however with 2 adjustable auxiliary switches
DSF230/16/E	Data same as that for DSF230/16, however with 2 adjustable auxiliary switches

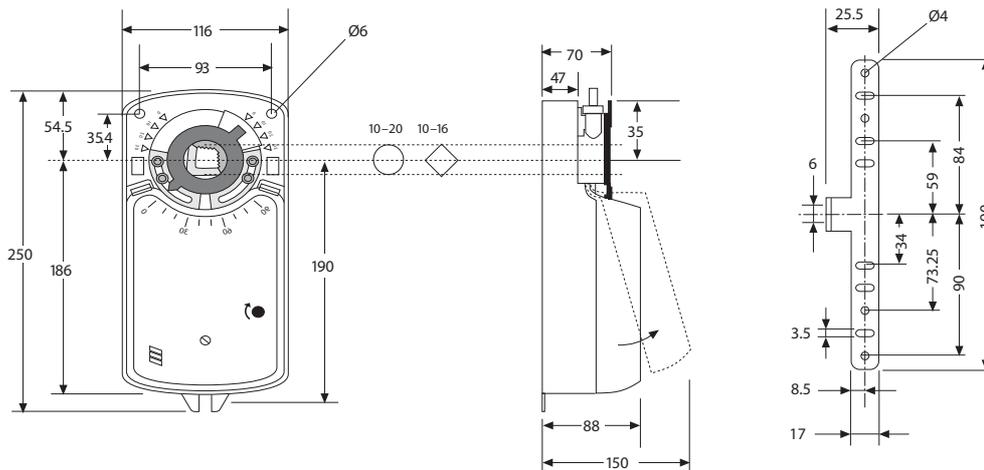
Technical Data

Nominal voltage	DSF24/16	AC 24 V $\pm 20\%$ or DC 24 V $\pm 10\%$
	DSF230/16	AC 230 V $\pm 10\%$
Power consumption	In operation	DSF24/16 18 W; DSF230/16 13 W
	In end position	DSF24/16 4 W; DSF230/16 4.5 W
Control	DSF24/16	AC/DC 24 V 2-point operation (open/closed)
	DSF230/16	AC 230 V 2-point operation (open/closed)
Position indicator	Scale on actuator	
Torque	16 Nm for damper surface area up to 3 m ²	
Rotational angle	0 to 90° working range	
	invertible rotational direction with security settings by reinserting the adapter sleeve	
	Rotational angle limitation: 0 to 30° and 60° to 90° possible	
Run time	90 s to 120 s for 90° rotational angle	
Fail-safe operation	10 s	
Auxiliary switch	DSF./16/E 2 adjustable auxiliary switches, AC 230 V, 3 (1.5) A, delivery setting: 10° and 80° rotational angle	
Degree of protection	IP54 (cable at the bottom)	
Ambient temperature	-20°C to +50°C	
Ambient humidity	5% to 95 % r.h., non-condensing	
Weight	DSF24/16 2.7 kg; DSF230/16 2.9 kg;	

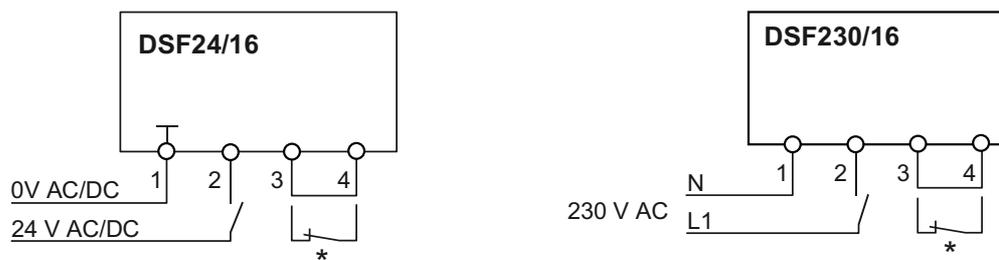
Accessories (not included in delivery)

ZKGH	Actuating lever with centering pin and 2 KG8 ball joints
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Dimensions

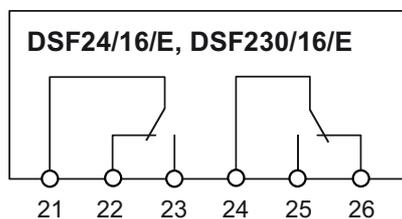


Connection



* Terminals 3 - 4: Instead of the bridge from the factory, an additional safety limiter can be connected.

Fail-safe operation: Power supply interruption, terminals 1 -2;
or interruption, terminals 3 -4



Additional connection for auxiliary switches, AC 230 V, 3 (1.5) A
(Contact position at rotational angle of 0°)

Mounting and Installation



WARNING

Contact with live components of the building's electrical system can cause death due to electric shock.

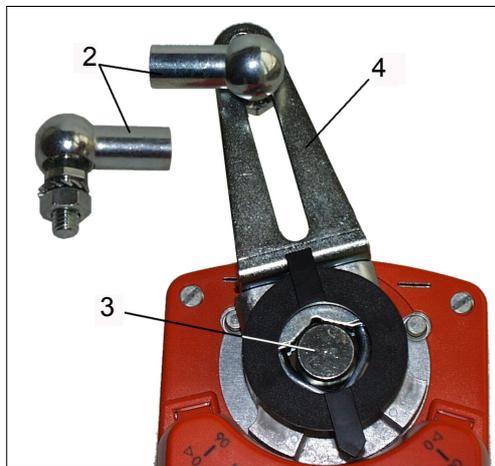
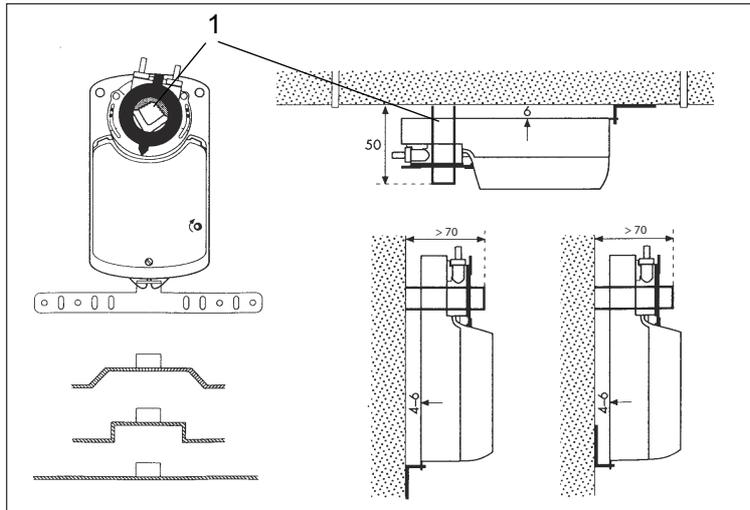
Mount or remove only when power is switched off.

Comply with VDE guidelines and local wiring regulations when mounting/removing.



CAUTION

Observe mounting and setting instructions.



- (1) Air damper axle
- (2) 2 pieces KG8
- (3) Centering pin
- (4) Actuating lever

ZKGH Accessories

Commissioning

DSF24/16 rotational angle limitation setting



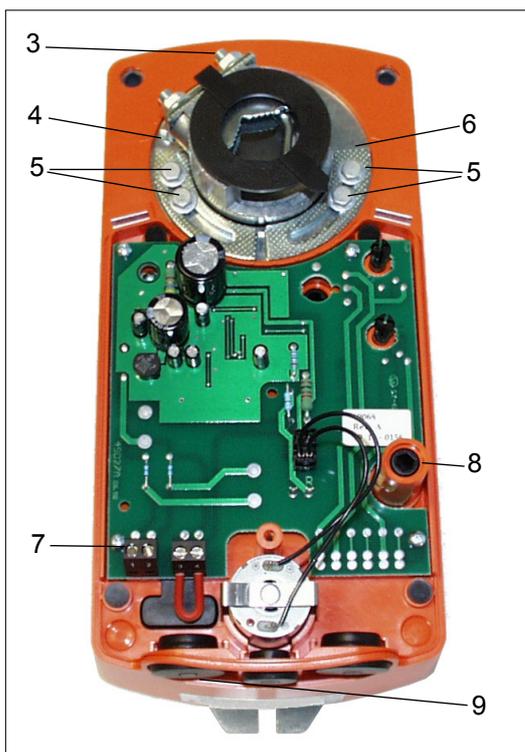
WARNING

Contact with live components of the building's electrical system can cause death due to electric shock.

- Disconnect the actuator from power before removing the cover.



- (1) Crank
- (2) Cover screw



- (3) Terminal clip for securing the air damper axle.
- (4) Left stop for mechanical limitation of rotational angle, adjustable 0° to 30°
- (5) Remove the hexagon screw to set the angle.
- (6) Right stop for mechanical limitation of rotational angle, adjustable 0° to 30°
- (7) Connection terminal
- (8) Coupling sleeve for crank
- (9) Cable bushing

Actual product not shown

DSF230/16 rotational angle limitation setting



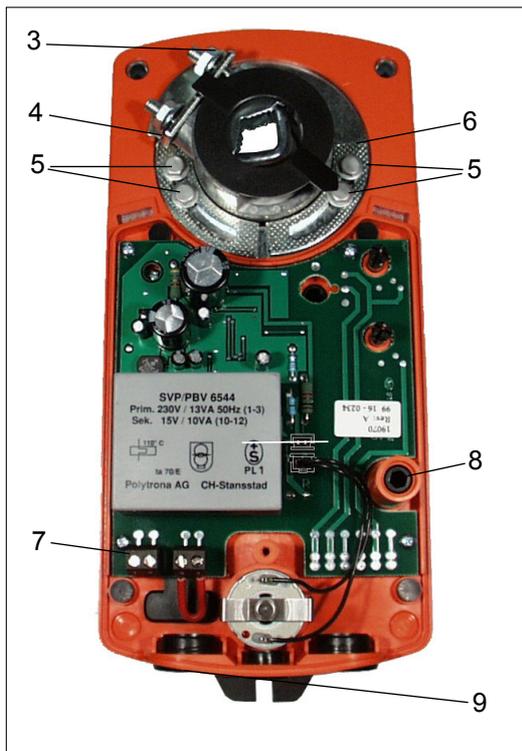
WARNING

Contact with live components of the building's electrical system can cause death due to electric shock.

- Disconnect the actuator from power before removing the cover.



- (1) Crank
- (2) Cover screw



- (3) Terminal clip for securing the air damper axle.
- (4) Left stop for mechanical limitation of rotational angle, adjustable 0° to 30°
- (5) Remove the hexagon screw to set the angle.
- (6) Right stop for mechanical limitation of rotational angle, adjustable 0° to 30°
- (7) Connection terminal
- (8) Coupling sleeve for crank
- (9) Cable bushing

Actual product not shown

Reversing DSF../16 rotational direction

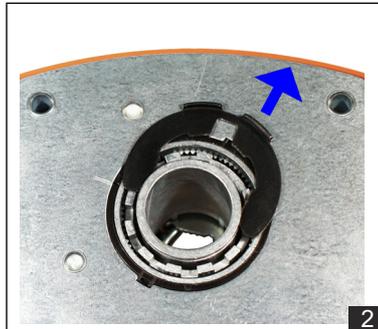
The adapter sleeve needs to be reinserted for the rotational direction to be changed.

For this to happen, the default for the fail-safe position (spring return) is switched from the left end position to the right end position.

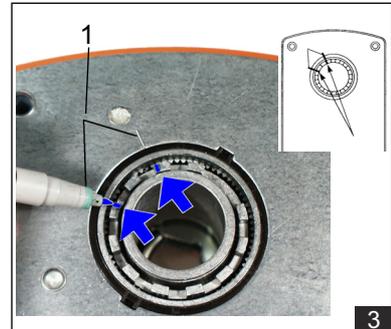
Reversing the rotational direction includes changing the fail-safe position:



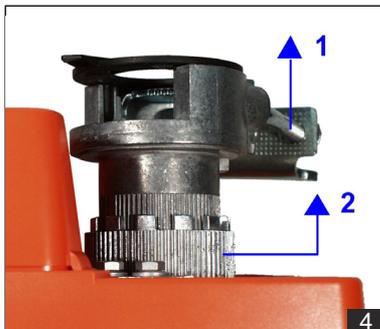
Fail-safe position is on the left.



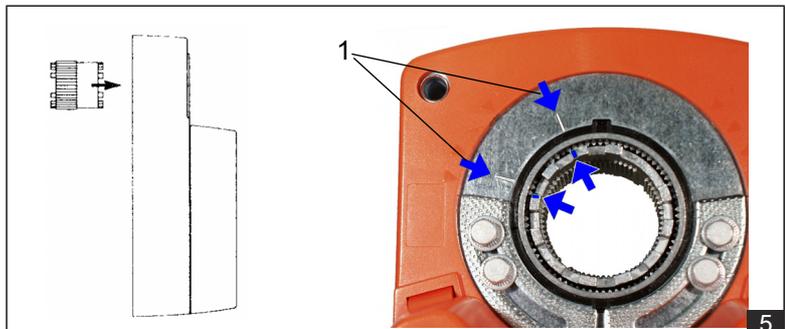
Remove circlip for the adapter (rear of the unit).



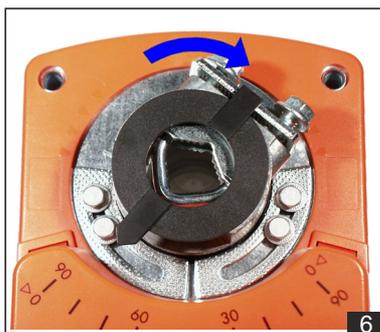
Mark both crown flanks on the position marks (1).



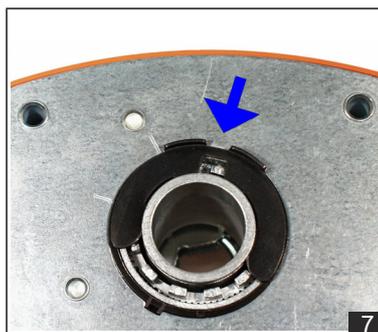
Remove adapter (1) and adapter sleeve (2) from the top.



Turn the adapter sleeve and insert from bottom side the unit. The marked crown flanks must match the position marks (1).

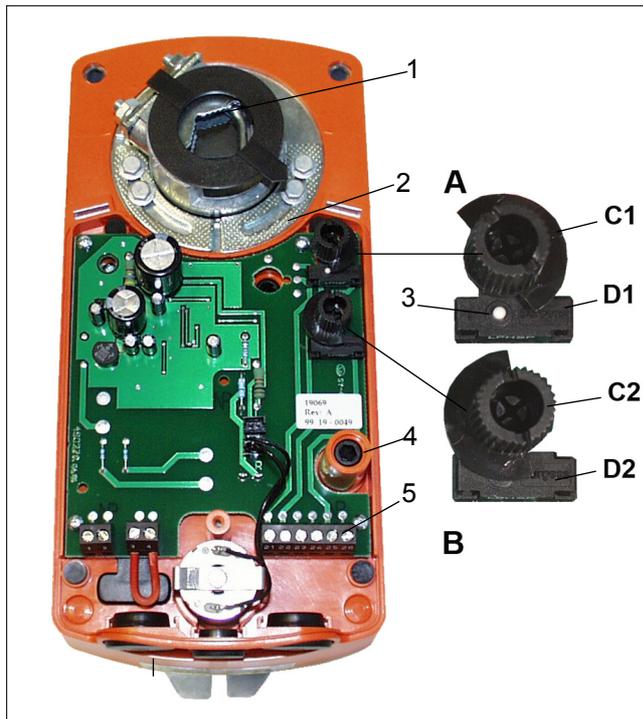


Reinsert the adapter from the top of the unit in the end position on the right.



Secure the adapter with the circlip.

DSF../16/E auxiliary switch setting



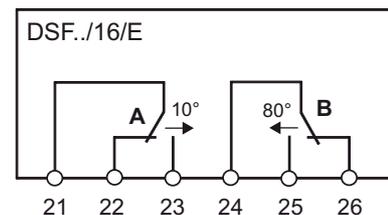
Actual product not shown

- (1) Adapter with position indicator
 (2) Markings for position indicator in 10° increments on housing
 (3) Actuating bolt of the microswitch
 (4) Pressure pin for manual adjustment
 (5) Connection terminals for auxiliary switches

Factory setting

Auxiliary switch A: Switches when rotational angle >10°

Auxiliary switch B: Switches when rotational angle >80°



Setting example

- Switch off mains power supply and remove the cover.
- Auxiliary switch A - Set to 30° rotational angle:
 - Insert the crank in the coupling sleeve and press down on coupling.
 - Use the crank to turn the actuator until the adapter is set to a 30° rotational angle.
 - While pressing down on the crank, turn the crank back about a ½ rotation until the spring return locks.
 - Turn switch cam C1 counter-clockwise until microswitch D1 switches.
- Auxiliary switch B - Set to 70° rotational angle:
 - Insert the crank in the coupling sleeve and press down on coupling.
 - Use the crank to turn the actuator until the adapter is set to a 70° rotational angle.
 - While pressing down on the crank, turn the crank back about a ½ rotation until the spring return locks.
 - Turn switch cam C2 clockwise until microswitch D2 switches.
- Replace the cover, switch on mains power supply, and perform operational check.

