

DS24/4..32 Actuating Drives

Application

DS24/4, DS24/8, DS24/16, DS24/24 and DS24/32 actuating drives with 2-point or 3-point control are used to control air dampers in VAC plants.

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



Contents	Page
Important Information Regarding Product Safety	2
Item	3
Technical Data	3
Accessories	3
Dimensions	4
Connection	4
Mounting and Installation	5
Commissioning	6
Setting Rotational Direction and Rotational Angle Limitation DS24/4	6
Setting Rotational Direction DS24/8..32	7
Rotational Angle Limitation DS24/8..32	9
DS24/4..32/E Auxiliary Switch Setting	10

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 "DS24/4..32 Actuating Drives". 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.

Meaning of the Symbols



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.



NOTICE

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**DS24/4..32 Actuating Drives****Item**

DS24/4	AC/DC 24 V actuating drive with 4 Nm torque
DS24/8	As above, but with 8 Nm torque
DS24/16	As above, but with 16 Nm torque
DS24/24	As above, but with 24 Nm torque
DS24/32	As above, but with 32 Nm torque
DS24/..E	Data same as for DS24/4..32, but with 2 adjustable auxiliary switches
DS24/..R1/1000	Data same as for DS24/4..32, but with feedback potentiometer 1 kΩ

Technical Data

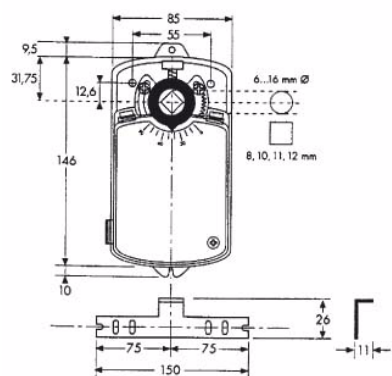
Nominal voltage	AC 24 V; 2.9 VA / DC 24 V, 1.2 W
Power consumption	In operation DS24/4 2.5 W; DS24/8..24 2.5 W; DS24/32 3.0 W In end position DS24/4 0.75 W; DS24/8..24 0.5 W; DS24/32 0.5 W
Control	2-point or 3-point signal 24 V AC(open/close or open/stop/close)
Position indicator	Scale on actuating drive and DS24/..R1/1000 over feedback potentiometer 1 kΩ
Torque	DS24/4 4 Nm for damper surface area up to 0.8 m ² DS24/8 8 Nm for damper surface area up to 2 m ² DS24/16 16 Nm for damper surface area up to 4 m ² DS24/24 24 Nm for damper surface area up to 6 m ² DS24/32 32 Nm for damper surface area up to 8 m ²
Rotational angle	0 to 90° working range, invertible rotational direction DS24/4 Rotational angle limitation: 0 to 30° and 60° to 90° possible DS24/8..32 Rotational angle limitation: 5° to 85° in 5° increments possible
Run time	DS24/4 35 s for 90° rotational angle DS24/8 30 s for 90° rotational angle DS24/16 80 s for 90° rotational angle DS24/24 125 s for 90° rotational angle DS24/32 140 s for 90° rotational angle
Auxiliary switches	DS24/..E 2 adjustable auxiliary switches, 230 V AC, 3 (1.5) A, delivery setting: 10° and 80° rotational angle
Potentiometer	DS24/..R1/1000 Feedback potentiometer 1 kW; 0.5 W, ±10%
Degree of protection	DS24/4 IP42 (IP44 with M16 x 1.5 screw fittings) DS24/8..32 IP54 (cable at the bottom)
Ambient temperature	-20 °C to +50 °C
Ambient humidity	5% to 95 % r.h., non-condensing
Weight	DS24/4 0.9 kg; DS24/8..32 1.1 kg

Accessories

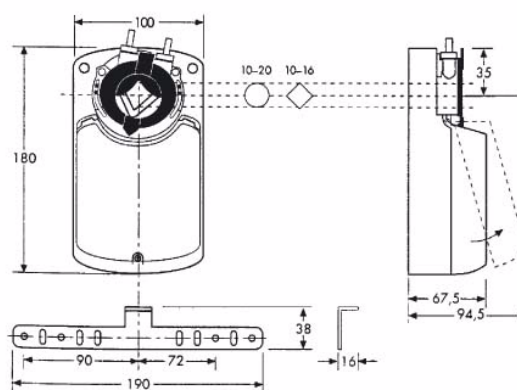
Not included in delivery.

ZKGH Only for DS24/8..32: one actuating lever with centering pin and 2 ball joints KG8

Dimensions



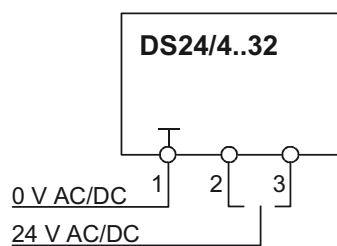
DS24/4



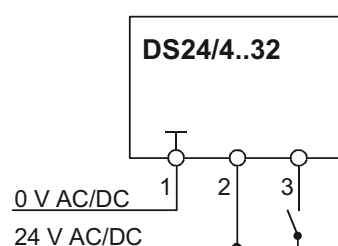
DS24/8..32

Connection

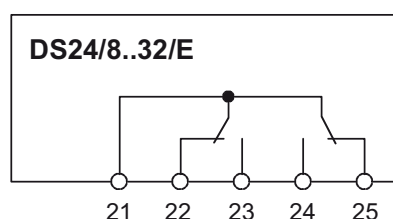
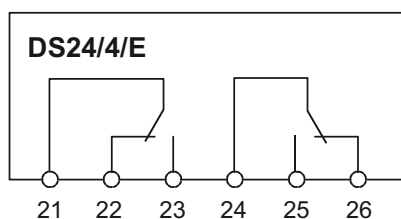
3-point control



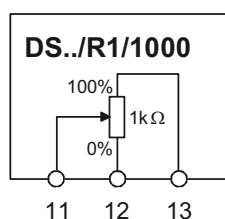
2-point control



Parallel control of up to max. 5 DS24/.. possible



Additional connection for auxiliary switches: AC 230 V, 3 (1.5) A (contact position at 0°)



Additional connection for feedback potentiometer

Mounting and Installation



WARNING

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

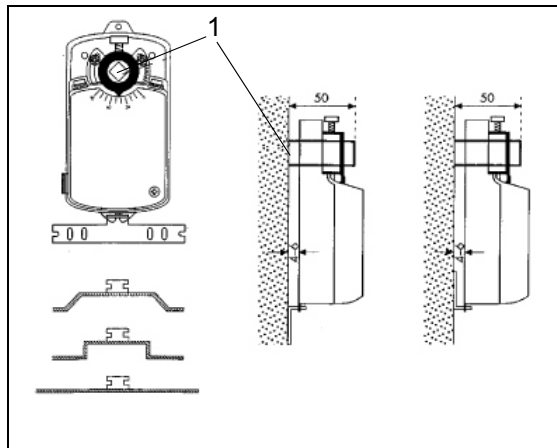
Mount or remove only when power is switched off.

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

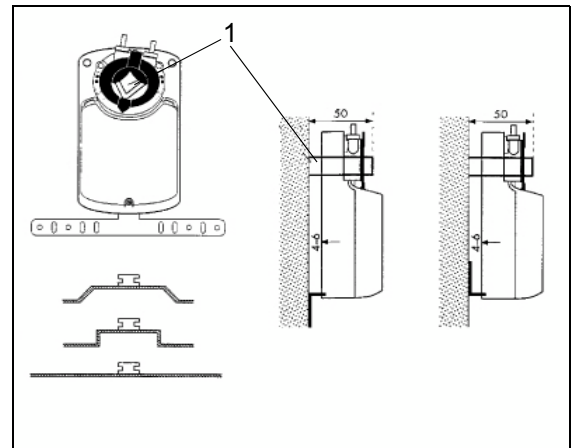


NOTICE

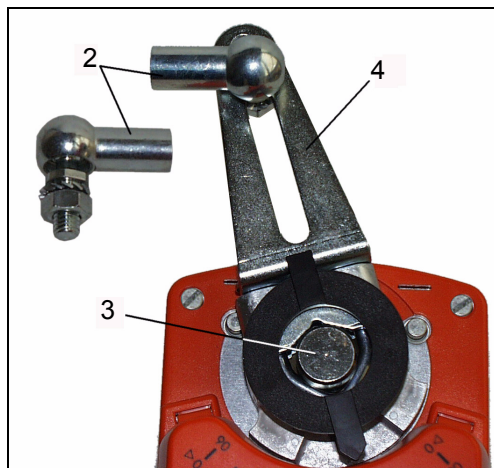
Observe mounting and setting instructions.



DS24/4



DS24/8..32



ZKGH Accessories
Only for DS24/8..32

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

Commissioning

Setting Rotational Direction and Rotational Angle Limitation DS24/4



WARNING

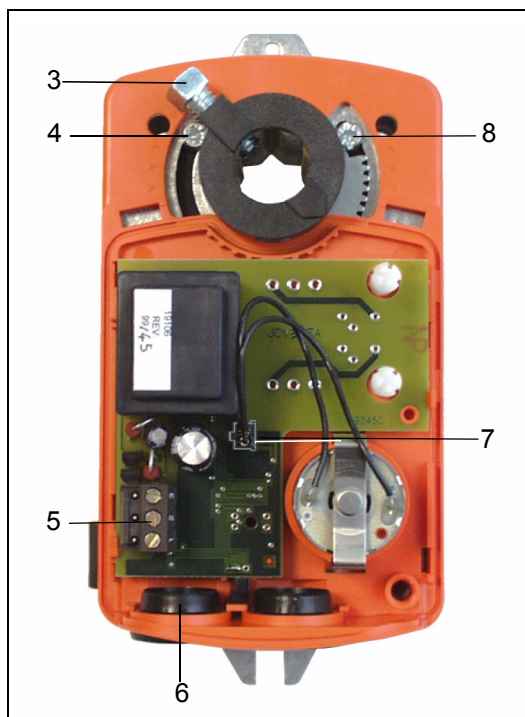
Contact with live components of the building's electrical system can cause death due to electric shock.

- Disconnect the actuating drive from power before removing the cover.



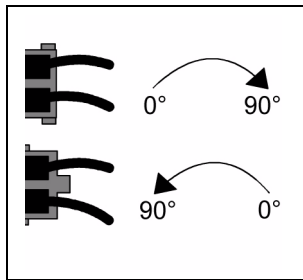
Fig. DS24/4

- (1) Cover screw
- (2) Sliding switch for manual adjustment



Actual product not shown

- (3) Clamping screw for securing the air damper axle.
- (4) Left stop for mechanical limitation of rotational angle, adjustable 0° to 30°
- (5) Connection terminal
- (6) Cable bushing
- (7) Plug
- (8) Right stop for mechanical limitation of rotational angle, adjustable 0° to 30°



Turn the plug (7) from the motor connection by 180° to reverse the direction of rotation.



Note

Screws (4) and (8) can be used to reduce the 90° angle/working range by 30° each from the two end positions.

Setting Rotational Direction DS24/8..32



WARNING

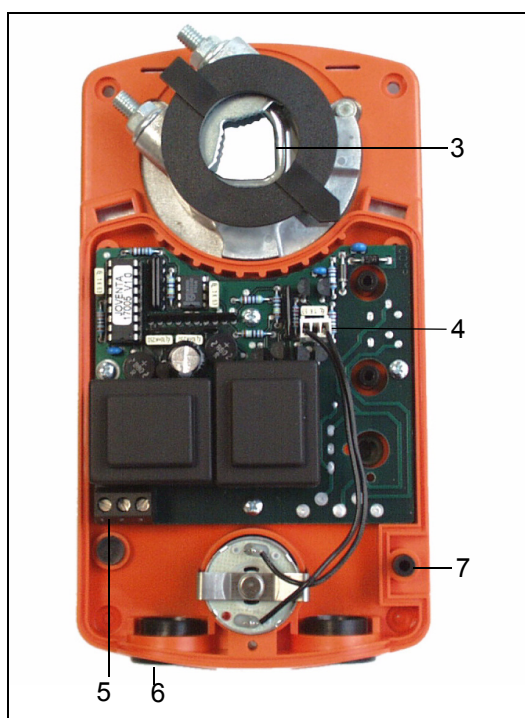
Contact with live components of the building's electrical system can cause death due to electric shock.

- Disconnect the actuating drive from power before removing the cover.



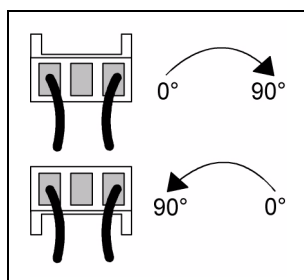
- (1) Cover screw
- (2) Sliding switch for manual adjustment

Fig. DS24/8..32



- (3) Clamping screw for securing the air damper axle.
- (4) Plug
- (5) Connection terminal
- (6) Cable bushing
- (7) Pressure pin for manual adjustment

Actual product not shown



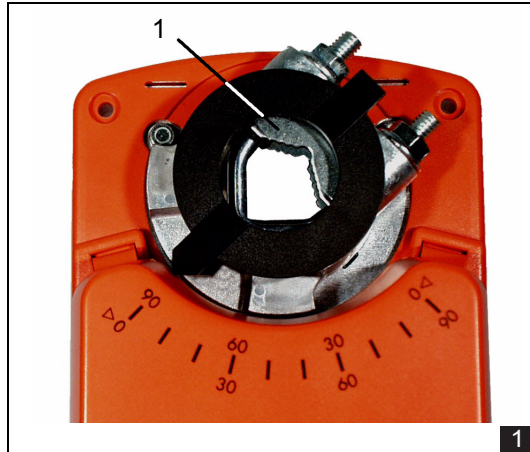
Turn the plug (4) from the motor connection by 180° to reverse the direction of rotation.

Rotational Angle Limitation DS24/8..32

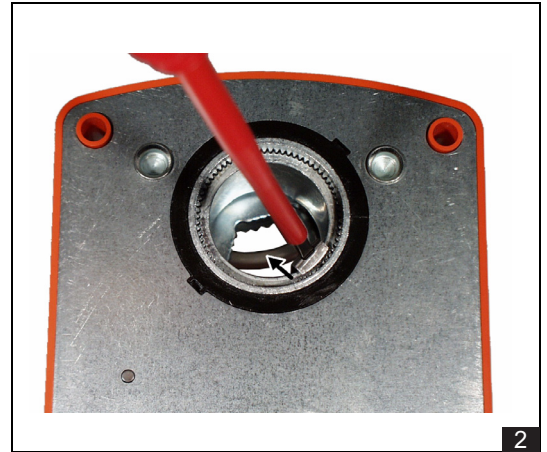
The maximum working range (rotational angle) of actuating drives DS24/8..32 is 90° (delivery setting) The adapter can be reinserted if the rotational angle needs to be limited.

Setting Example

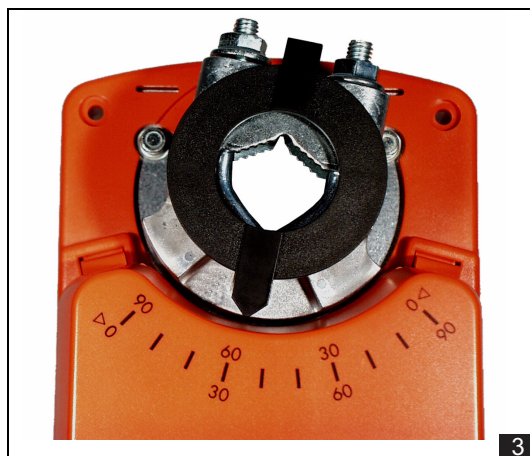
Proceed as follows to limit the rotational range to 0° to 60° from 0° to 90°:



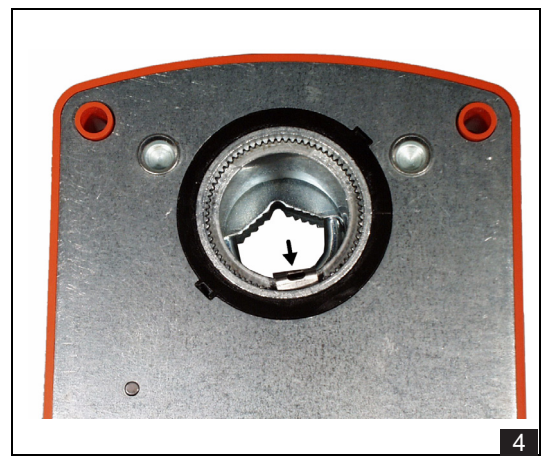
(1) Adapter
Set actuator to 90° rotational angle for end position.



Disengage the adapter's retaining clips (1) on the underside of the actuator and pull out the adapter (1) to the front of the unit.

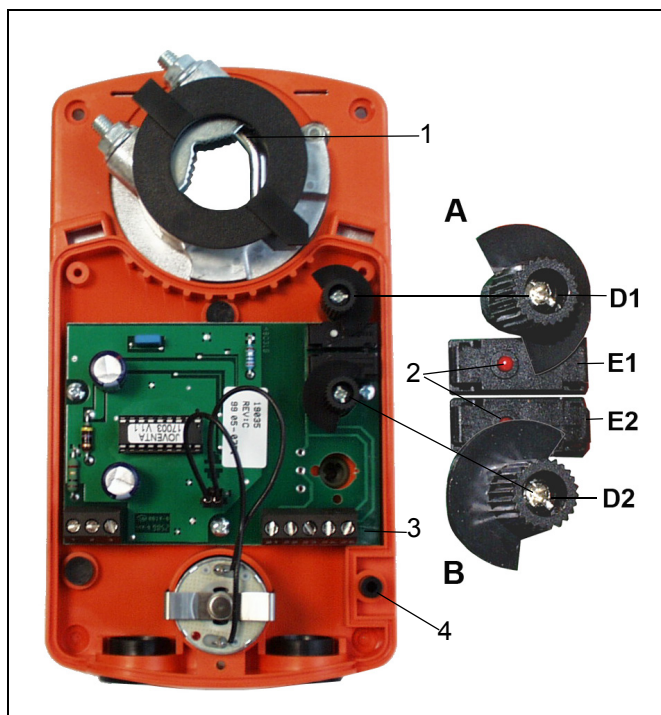


Re-insert the adapter (1) in the new end position of 60° rotational angle.



Push in the adapter (1) in the new 60° end position until the retaining clip locks in place again.

DS24/4..32/E Auxiliary Switch Setting



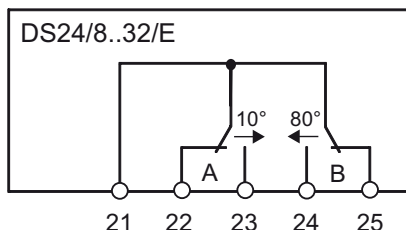
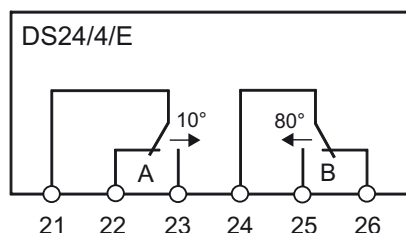
- (1) Adapter with position indicator
- (2) Operating pins with the two micro-switches
- (3) Connection terminal for auxiliary switches
- (4) Pressure pin for manual adjustment

Actual product not shown

Factory setting

Auxiliary switch A: switches when rotational angle $>10^\circ$

Auxiliary switch B: switches when rotational angle $>80^\circ$



Setting Example

- Switch off mains power supply and remove the cover.
- Auxiliary switch A - Set to 30° rotational angle:
 - Move sliding switch for manual adjustment and set adapter to 30° rotational angle.
 - Turn ratchet wheel D1 until microswitch E1 switches.
- Auxiliary switch B - Set to 70° rotational angle:
 - Move sliding switch for manual adjustment and set adapter to 70° rotational angle.
 - Turn ratchet wheel D2, until microswitch E2 switches.
- Replace the cover, switch on mains power supply, and perform operational check.