

DSY/4..32 Actuating Drives

Application

DSY/4, DSY/8, DSY/16, DSY/24 and DSY/32 actuating drives with continuous control are used to control air dampers in VAC systems. 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 modifichie - 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 "DSY/4..32". 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.



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**DSY/4..32****Item**

DSY/4	AC/DC 24 V actuating drive with 4 Nm torque
DSY/8	As above, but with 8 Nm torque
DSY/16	As above, but with 16 Nm torque
DSY/24	As above, but with 24 Nm torque
DSY/32	As above, but with 32 Nm torque
DSY/8..E	Data same as for DSY/8..32, but with 2 adjustable auxiliary switches

Technical Data

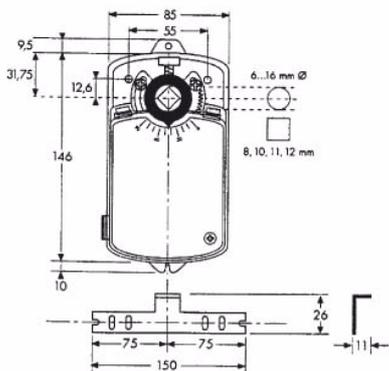
Nominal voltage	24 V AC $\pm 20\%$; 24 V DC $\pm 10\%$	
Power consumption	In operation	DSY/4 = 2.5 W; DSY/8..32 = 2.5 W
	In end position	DSY/4 = 0.75 W; DSY/8..32 = 0.3 W
Control	DSY/4	Control signal Y = DC 0 to 10 V; Ri > 100 k Ω
	DSY/8..32	Control signal Y = DC 0 to 10 V; Ri > 250 k Ω or Control signal Y = 0 to 20 mA; Ri 388 Ω
Position indication	Scale on actuating drive plus position feedback 0..10 V DC; R \geq 50 k Ω	
Torque	DSY/4	4 Nm for damper surface area up to 0.8 m ²
	DSY/8	8 Nm for damper surface area up to 2 m ²
	DSY/16	16 Nm for damper surface area up to 4 m ²
	DSY/24	24 Nm for damper surface area up to 6 m ²
	DSY/32	32 Nm for damper surface area up to 8 m ²
Rotational angle	0 to 90° working range, invertible rotational direction	
	DSY/4	Rotational angle limitation: 0 to 30° and 60° to 90° possible
	DSY/8..32	Rotational angle limitation: 5° to 85° in 5° increments possible
Run time	DSY/4	35 s for 90° rotational angle
	DSY/8	30 s for 90° rotational angle
	DSY/16	80 s for 90° rotational angle
	DSY/24	125 s for 90° rotational angle
	DSY/32	200 s for 90° rotational angle
Auxiliary switches	DSY/8..32/E 2 adjustable auxiliary switches, 24 V AC, 3 (1.5) A, delivery setting: 10° and 80° rotational angle	
Degree of protection	DSY/4	IP42 (IP44 with M16 x 1.5 screw fittings)
	DSY/8..32	IP54 (cable at the bottom)
Ambient temperature	-20 °C to +50 °C	
Ambient humidity	5% to 95 % r.h., non-condensing	
Weight	DSY/4 0.9 kg; DSY/8..32 1.1 kg	

Accessories

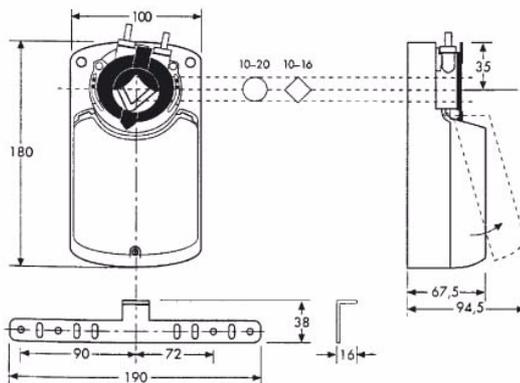
Not included in delivery.

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

Dimensions

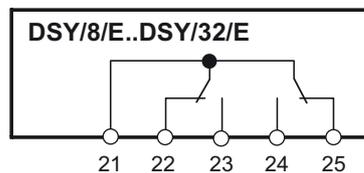
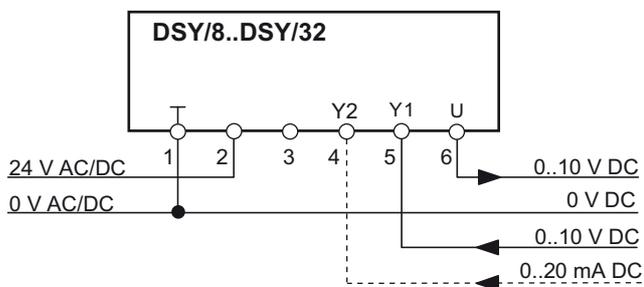
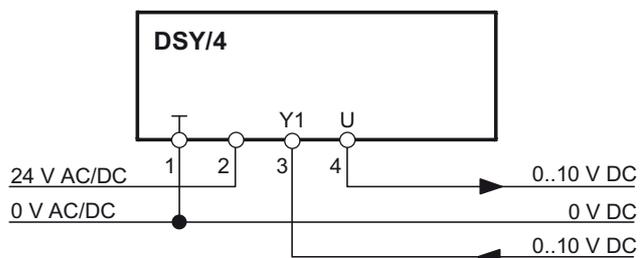


DSY/4



DSY/8..32

Connection



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.

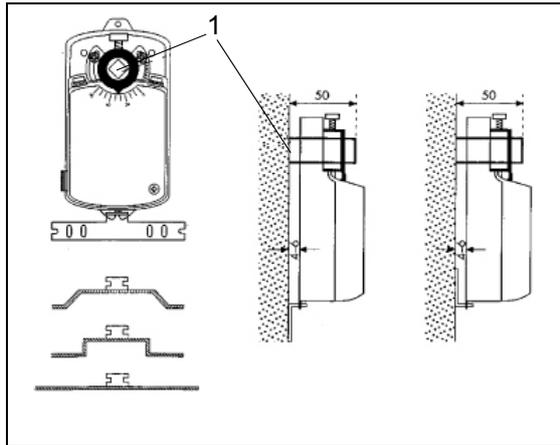
Mount or remove only when power is switched off.

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

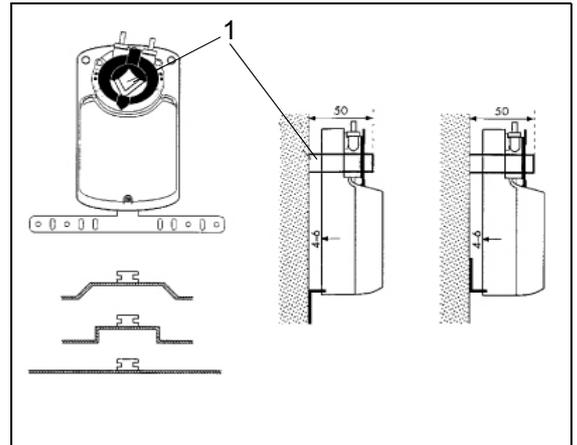


NOTICE

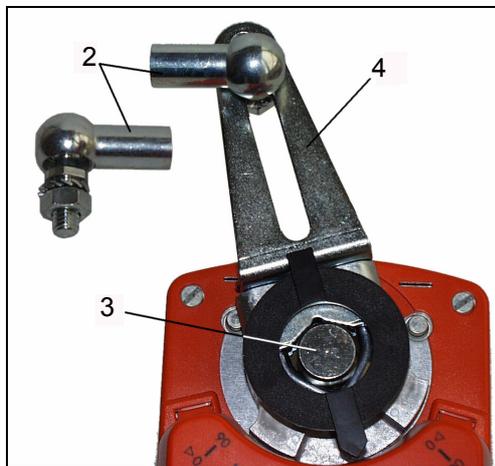
Observe mounting and setting instructions.



DSY/4



DSY/8..32



ZKGH Accessories
Only for DSY/8..32

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

Commissioning

Setting rotational direction and rotational angle limitation DSY/4



WARNING

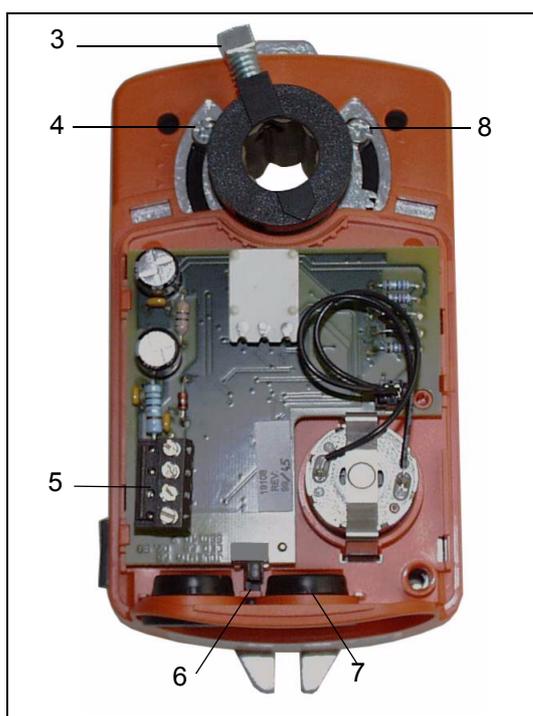
Contact with live components of the building's electrical system can cause death due to electric shock.

- Disconnect the actuator from power before removing the cover.



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

Fig. DSY4



- (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) Switch for reversing the rotational direction, externally adjustable.
- (7) Cable bushing
- (8) Right stop for mechanical limitation of rotational angle, adjustable 0° to 30°.

Actual product not shown



NOTICE

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 DSY/8..32



WARNING

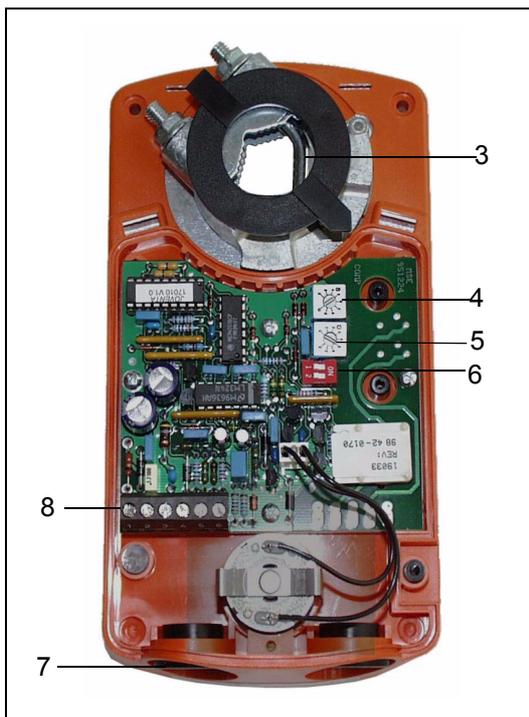
Contact with live components of the building's electrical system can cause death due to electric shock.

- Disconnect the actuator from power before removing the cover.



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

Fig. DSY/8..32



- (3) Terminal clip for securing the air damper axle.
- (4) Adjuster **S**
Setting: Control signal Y (slope)
- (5) Adjuster **O**
Setting: Control signal Y (zero point)
- (6) Double switch **A**
Switch 1: Adjustment of the Y control signal to the rotational angle
Switch 2: Rotational direction switch
- (7) Cable bushing
- (8) Connection terminal

Actual product not shown

Adjusters O and S

The Y control signal is preset to 0 to 10 V (Y1) and 0 to 20 mA (Y2) (adjuster O = 0, adjuster S = 10). Using both adjusters O (starting point) and S (working range), the input of the Y control signal can be changed.

For example, for
 Y1= 2..10 V Adjuster **O** = 2 Adjuster **S** = 8
 and
 Y2= 4..20 mA Adjuster **O** = 2 Adjuster **S** = 8



Double switch A

Switch 1 can be used to adjust control signal Y to the mechanical rotational angle of DSY/8..32 (automatic adaptation, on = ON position).

When the switch is set to ON, the actuating drive performs a single initialization run. With the initialization run, both end positions are approached automatically.

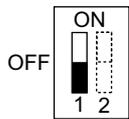
ON position: When control signal Y is changed or the rotational angle is automatically limited, control signal Y is adjusted to the available rotational angle.

Delivery setting: Off (for 0 to 10 V, 0 to 20 mA, and 0 to 90° rotational angle).

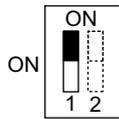
Switch 2 is used for reversing the rotational direction.

Delivery setting: 0 to 10 V or 0 to 20 mA = right rotational angle, 0° ->90°.

Double switch A (1)

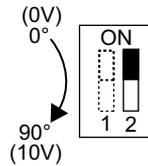


Without adaptation

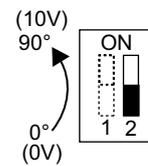


With adaptation

Double switch A (2)



Rotational direction to the right



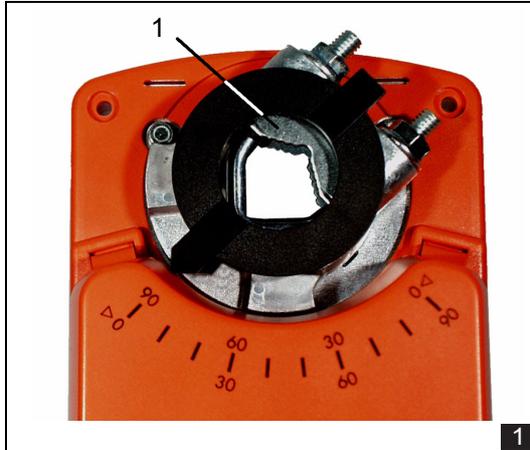
Rotational direction to the left

Rotational angle limitation DSY/8..32

The maximum working range (rotational angle) of actuating drives DSY/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°:



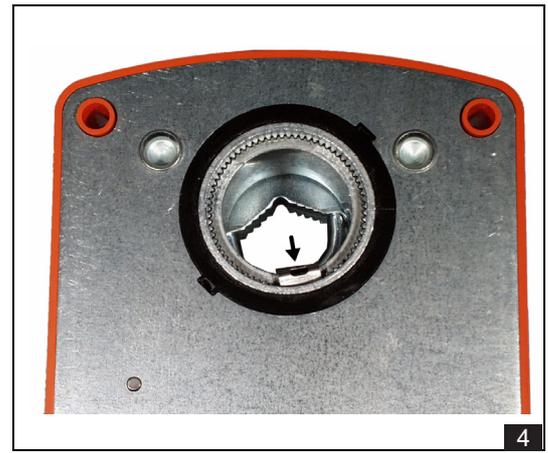
(1) Adapter
Set actuator to 90° rotational angle for end position.



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.

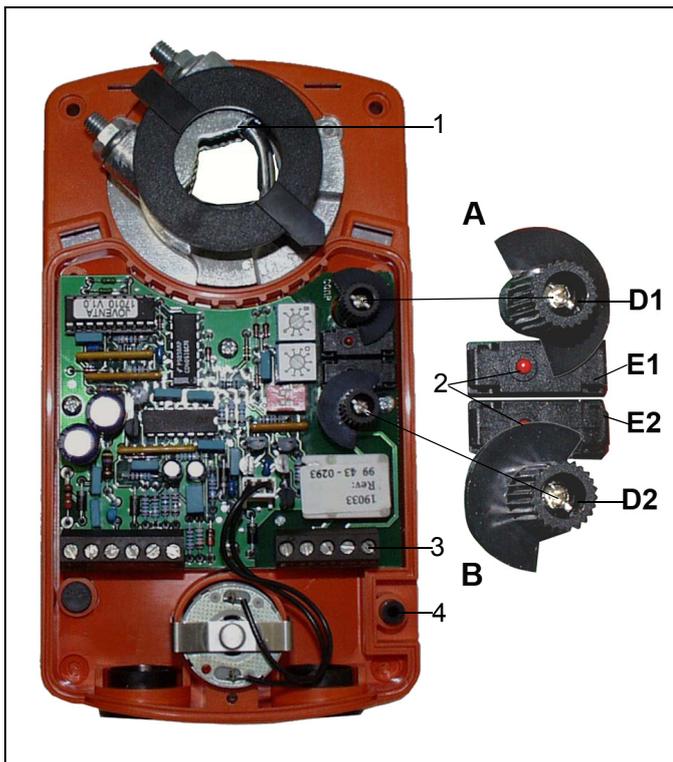


Re-insert the adapter (1) in the new end position of 60° rotational angle.



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

DSY/8..32/E auxiliary switch setting



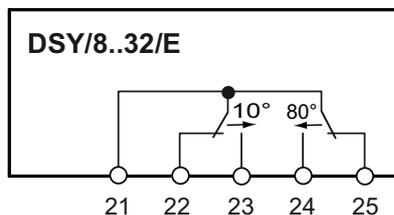
- (1) Adapter with position indicator
- (2) Operating pins with the two micro-switches
- (3) Connection terminal for auxiliary switches
- (4) Pressure pin for manual adjustment

Actual product not shown

Factory setting

Auxiliary switch A: Switches when rotational angle >10°

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:
 - 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.