

## Data sheet

# Actuators for dampers (with spring return)

## AMD 413, 413 AS, AMD 423, 423 AS

### Description



AMD actuators are used for the regulation of air dampers of 90° angle of rotation to be used in heating, ventilation and air conditioning applications (HVAC).

#### Features:

- Spring return function
- Manual operation
- Rotation direction selection by switch
- Adjustable rotation angle by mechanical end stop min 35°.
- Position indication
- Overload protection
- Direct mounting with universal spindle clamp
- Anti-rotation strap for preventing actuator from rotating
- Maintenance free

#### Main Data:

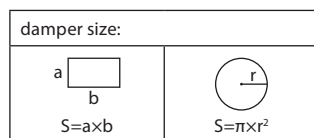
- Nominal voltage (AC or DC):  
230 V, 50/60 Hz  
24 V, 50/60 Hz
- Control Input signal: modulating or 2 point (depend on wiring)
- Torque: 10 Nm
- Rotation angle: 0- max. 95°
- Running time motor 75...150 s /90°
- Running time spring 20 s /90°

### Ordering

Note:

\* Actuator with built-in auxiliary switches

\*\* Damper size:



| Type       | Torque (Nm) | Control signal | Speed (s/90°)                | Supply voltage (V) | Auxiliary switch  | Max. damper size (m <sup>2</sup> ) | Code No.        |
|------------|-------------|----------------|------------------------------|--------------------|-------------------|------------------------------------|-----------------|
| AMD 413    | 10          | 2-point        | 75 s motor /<br>20 s spring  | 24 VAC/DC          | -                 | 2 **                               | <b>082H1148</b> |
| AMD 413 AS |             |                |                              | 24 VAC/DC          | 2 aux. Switches * |                                    | <b>082H1149</b> |
| AMD 413    |             |                |                              | 230 VAC/DC         | -                 |                                    | <b>082H1150</b> |
| AMD 413 AS |             |                |                              | 230 VAC/DC         | 2 aux. Switches * |                                    | <b>082H1151</b> |
| AMD 423    |             | modulating     | 150 s motor /<br>20 s spring | 24 VAC/DC          | -                 |                                    | <b>082H1152</b> |
| AMD 423 AS |             | 24 VAC/DC      | 2 aux. Switches *            | <b>082H1153</b>    |                   |                                    |                 |

### Working cycles

|            |                                 |
|------------|---------------------------------|
| 2-point    | >60.000 cycles (0°-95°-0°)      |
| modulating | >60.000 cycles (0°-95°-0°)      |
|            | >1.000.000 partial cycles (±5°) |

Technical data

| Type  |       | 413/413AS<br>(24V)  | 413/413AS<br>(230V) | 423/423AS<br>(24V)       |
|---|-------|---|---------------------|--------------------------|
| Power supply                                    | V     | 24 AC/DC or 230 AC/DC ± 20%   |                     |                          |
| Power consumption in motion                     |       | 5   | 5,5                 | 5                        |
| Power consumption in Stand by<br>(end position) | W     | 2   | 1,5                 | 2                        |
| Frequency                                       | Hz    | 50/60   |                     |                          |
| Control Input                                   | -     | 2 point   |                     | modulating               |
|   | V     | /   |                     | 0-10 (2-10) Ri = 100 kΩ  |
|   | mA    |   |                     | 0-20 (4-20) Ri = 500Ω    |
| Operating torque                                | Nm    | 10  |                     |                          |
| Rotation angle                                  |       | 0...max 95°   |                     |                          |
| Ambient temperature                             |       | -30 ... 50  |                     |                          |
| Ambient humidity:                               | °C    | 5...95% r.F., non- condensating (EN 60730-1)  |                     |                          |
| Storage and transport temperature               |       | -30 ... 80  |                     |                          |
| Protection Class                                |       | III (24V) / II (230V)   |                     |                          |
| Rated impulse voltage:                          | kV    | 0,8 (EN 60730-1)  | 4 (EN 60730-1)      | 0,8 (EN 60730-1)         |
| Grade of enclosure / Degree of protection       |       | IP 54   |                     |                          |
| Sound power level motor: *                      | dB(A) | < 45 motor / < 65 spring  |                     | < 35 motor / < 65 spring |
| Weight  | kg    | 1,8   |                     |                          |
| CE marking in accordance with standards         |       | Low voltage directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14<br>EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3 RoHS CE (2011/65/EU) |                     |                          |

Note:

\* at distance 1m

Operating mode

**Valid for: AMD 423, 423AS**

Through connecting the power supply to BU+BN (1+2) and a reference signal Y to BK (3) of 0(2)...10VDC, moves the actuator to its specified position. The actual damper position 0...100% is a feedback signal U for example to share the signal with other actuators. If the power supply is interrupted the actuator is moving to position 0 by spring power. The actuator is still maintaining the minimum torque at the damper spindle

The actuator is overload-proof and requires no end switches. It automatically stops when the end stop is reached.

**Valid for: AMD 413, 413AS**

Through connecting the power supply to BU+BN (1+2), the actuator moves to position 1 while the pre-tensioned spring is wound up the same time. If the power supply is interrupted the actuator is moving back to position 0 by the spring power. The actuator is still maintaining the minimum torque at the damper spindle.

The actuator is overload-proof and requires no end switches. It automatically stops when the end stop is reached.

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.

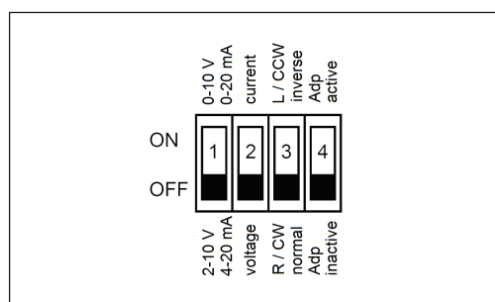
Manual operation

The actuator can be operated only manually while the power supply is off. The supplied lever is to open and lock the damper position. The lock stays until the power supply is put on.

Mode- switch

Valid for AMD: (423, 423AS)

DIP-Switch under the case cover

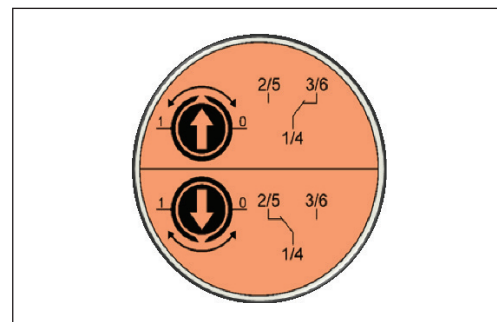


**Adaption drive (Adp)**  
Valid for AMD: (423, 423AS)

- Adaption on angle of rotation < 90°
- Actuator power-off
- Setting the mechanical end stops
- Actuator power-on
- Adaption to enable
- Actuator adaption on angular range
- Adaption to disable
- “Y” refers to the measured angular range

**Auxiliary switches**  
Valid for AMD 413AS

The two integrated auxiliary switches are freely adjustable in the angle of 0 – 95°. These are activated corresponding to the adjusted angle. The damper position can be checked by the mechanical pointer.

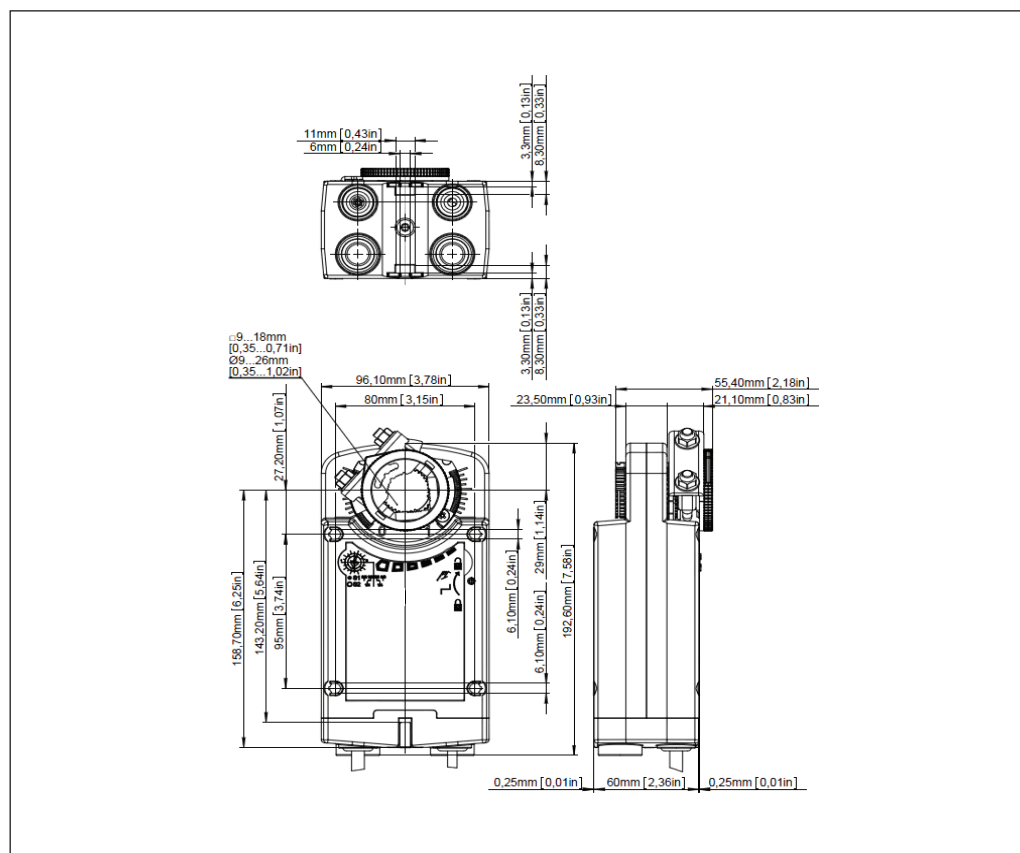


**Installation**

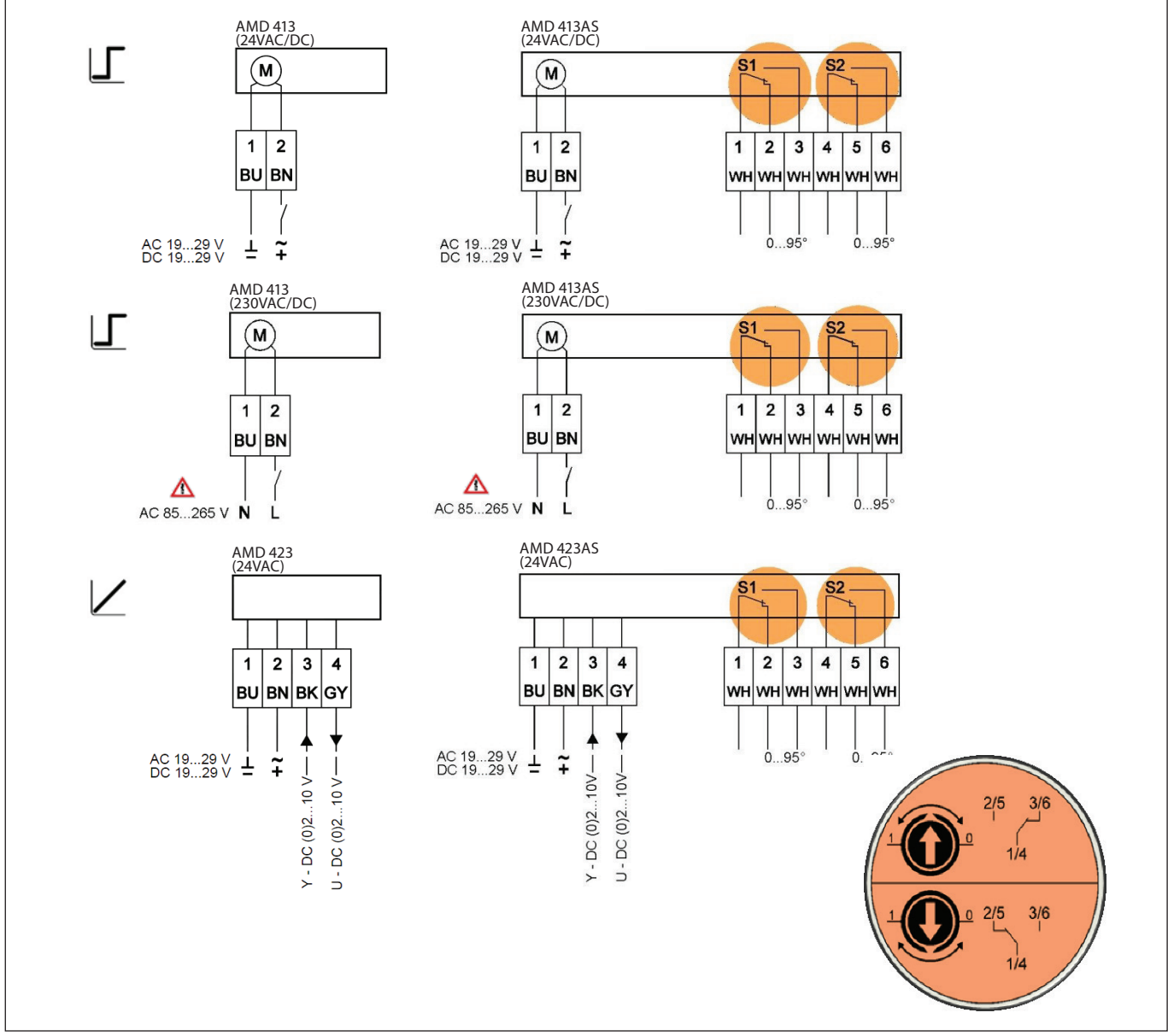
The actuators should be mounted in a dry environment, absolutely free from acrid fumes. In case of outdoor installation, the actuator has to be protected against climatic influences by suitable measures.

|  |
|--|
| Clamp coupling dimensions:<br>∅ 9-18mm / ∅ 9-26 mm |
|--|

**Dimensions**



Wiring



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