

## Data sheet

# Actuators for dampers

AMD 210, 210 AS, AMD 220, 220 AS

AMD 310, 310 AS, AMD 420, 420 AS

AMD 510, 510 AS, AMD 520, 520 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:

- Manual operation
- Rotation direction selection by switch
- 2/3 point control adjustable angle of rotation by mechanical end stop min 20°.
- Modulating control adjustable angle of rotation with end stop.
- 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 2/3 point (depend on wiring)
- Torque: 5/8/10/15 Nm
- Rotation angle: 0- max. 95°
- Speed: 60-150 sec /90°

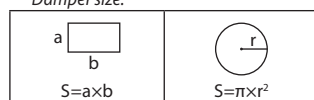
### Ordering

Type	Torque (Nm)	Control signal	Speed (s/90°)	Supply voltage (V)	Auxiliary switch	Max. damper size (m <sup>2</sup> )	Code No.
AMD 210	5	2/3-point	60-120	24 VAC/DC	-	1 **	<b>082H1100</b>
AMD 210 AS				24 VAC/DC	1 aux. Switch *		<b>082H1101</b>
AMD 210				230 VAC/DC	-		<b>082H1102</b>
AMD 210 AS				230 VAC/DC	1 aux. Switch *		<b>082H1103</b>
AMD 220	5	modulating	100	24 VAC/DC	-	1,6 **	<b>082H1104</b>
AMD 220 AS				24 VAC/DC	1 aux. Switch *		<b>082H1105</b>
AMD 310	8	2/3-point	60-120	24 VAC/DC	-	1,6 **	<b>082H1106</b>
AMD 310 AS				24 VAC/DC	1 aux. Switch *		<b>082H1107</b>
AMD 310				230 VAC/DC	-		<b>082H1108</b>
AMD 310 AS				230 VAC/DC	1 aux. Switch *		<b>082H1109</b>
AMD 420	10	modulating	150	24 VAC/DC	-	2 **	<b>082H1110</b>
AMD 420 AS				24 VAC/DC	1 aux. Switch *		<b>082H1111</b>
AMD 510	15	2/3-point	150	24 VAC/DC	-	3 **	<b>082H1112</b>
AMD 510 AS				24 VAC/DC	1 aux. Switch *		<b>082H1113</b>
AMD 510				230 VAC/DC	-		<b>082H1114</b>
AMD 510 AS		230 VAC/DC		1 aux. Switch *	<b>082H1115</b>		
AMD 520		modulating		24 VAC/DC	-		<b>082H1116</b>
AMD 520 AS				24 VAC/DC	1 aux. Switch *		<b>082H1117</b>

Note:

\* Actuator with built-in auxiliary switches

\*\* Damper size:



### Working cycles

2/3-point	>60.000 cycles (0°-95°-0°)
modulating	>60.000 cycles (0°-95°-0°)
	>1.000.000 partial cycles (±5°)

Technical data

Type		210/210AS (24V/230V)	310/310AS (24V/230V)	510/510AS (24V)	220/220AS (24V)	420/420AS (24V)	520/520AS (24V)	510/510AS (230V)
Power supply	V	24 AC/DC or 230 AC/DC ± 20%						
Power consumption in motion	W	2						2,5
Power consumption in Stand by (end position)		1						
Frequency	Hz	50/60						
Control Input	V	2/3 point *			modulating			2/3 point *
	mA	/			0-10 (2-10) Ri = 100 kΩ 0-20 (4-20) Ri = 500Ω			/
Operating torque	Nm	5	8	15	5	10	15	
Rotation angle		0...max 95°						
Ambient temperature	°C	-30 ... 50						
Ambient humidity		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	4 (EN 60730-1)		0,8 (EN 60730-1)			4 (EN 60730-1)	
Grade of enclosure / Degree of protection		IP 54						
Sound power level motor **	dB(A)	< 35						
Weight	kg	0,53						
CE marking in accordance with standards		Low voltage directive (LVD) 2006/95/EC: EN 60730-1, EN 60730-2-14 EMC Directive 2004/108/EC: EN 61000-6-2, EN 61000-6-3 RoHS CE (2011/65/EU)						

Note:  
\* depend on wiring  
\*\* at distance 1m

Operating mode

**Valid for: AMD 210, 210AS, 310, 310AS, 510, 510AS**  
2- point.

Through connecting the power supply to BU+BN (1+2) and the direction of rotation switch on position "R" moves the actuator to position 1. Is also BK (1+2+3) connected to the power supply the actuator is moving to position 0.

3- point.

Through connecting the power supply to BU+BN (1+2) and the direction of rotation switch on position "R" moves the actuator to position 1. If the power supply is interrupted the actuator maintains its current position. Is also BU+BK (1+3) connected to the power supply the actuator is moving in direction 0.

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

**Valid for: AMD 220, 220AS, 420, 420AS, 520, 520AS**

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.

The actuator is overload-proof, requires no limit switches and 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

Manual operation is possible with the self-resetting pushbutton (the gearing latch remains disengaged as long as the pushbutton is pressed)

Rotary direction switch

R = clockwise  
L = counter clockwise

**Valid for: AMD 210, 210AS 310, 310AS**

R = clockwise  
Adp = adaption  
L = counter clockwise

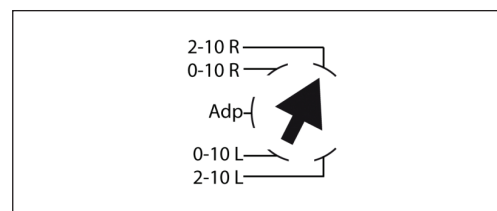
**Valid for: AMD 510, 510AS**

**Mode- switch**

Valid for AMD:  
(220, 220AS, 420, 420AS, 520, 520AS)

Mode switch with four rest positions at the housing

- Rotary direction Normal 2-10 V
- Rotary direction Normal 0-10 V
- Adp= adaption
- Rotary direction invers 2-10 V
- Rotary direction invers 0-10 V



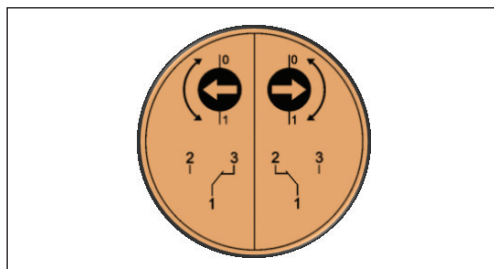
**Adaption drive (Adp)**

Valid for AMD:  
(510, 510AS, 220, 420, 520)

- 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:  
(210AS, 310AS, 510AS, 220AS, 420AS, 520AS)

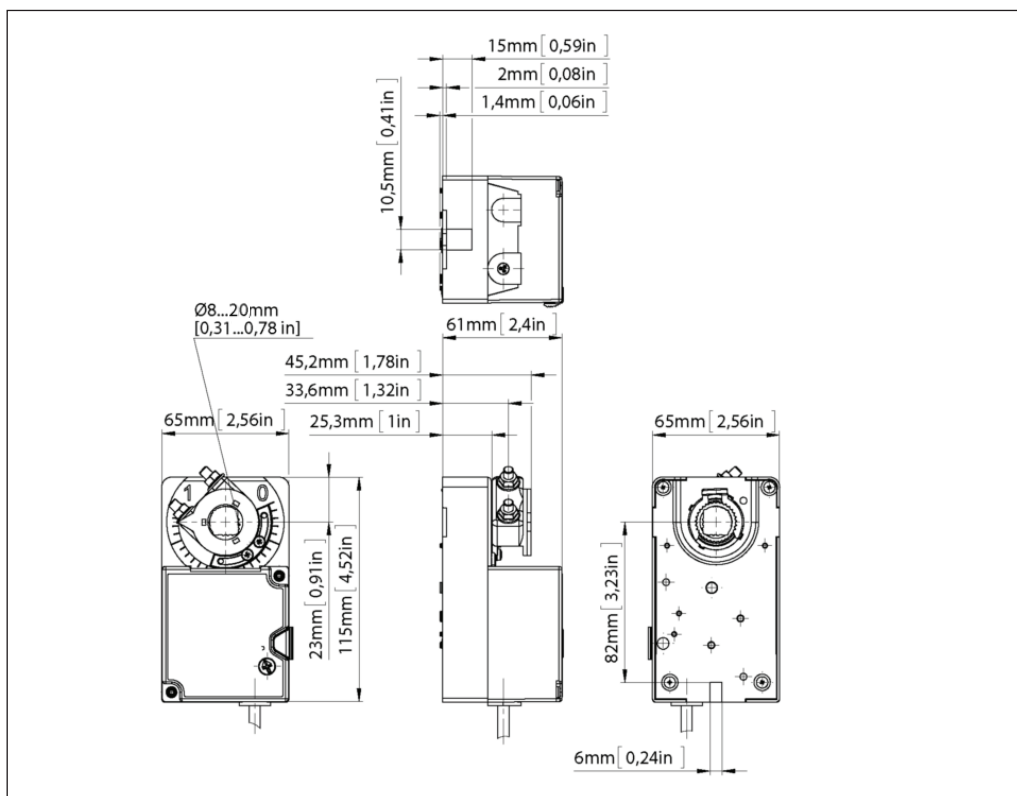


**Installation**

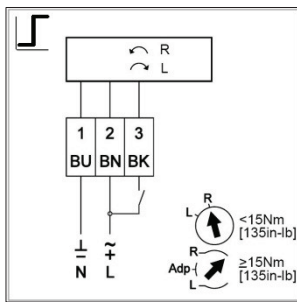
The actuators should be mounted in a dry environment, absolutely free from acrid fumes. In case of outdoor installation, the actuator has to be protected against climatic influences by suitable measures.

Clamp coupling dimensions: Ø 8-20 mm

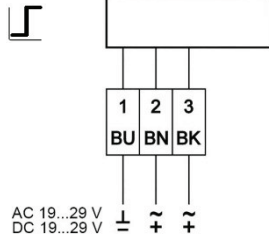
**Dimensions**



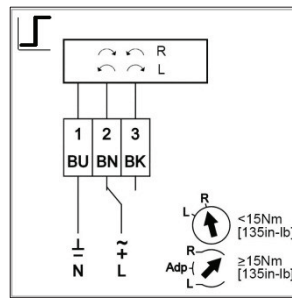
Wiring



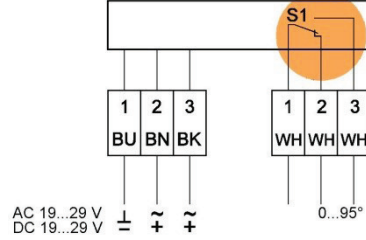
AMD 210, 310, 510  
(24VAC/DC)



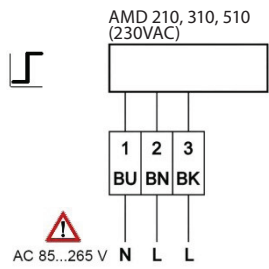
AC 19...29 V  
DC 19...29 V



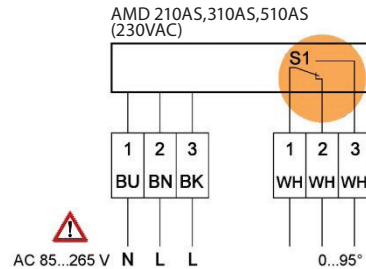
AMD 210AS,310AS,510AS  
(230VAC)



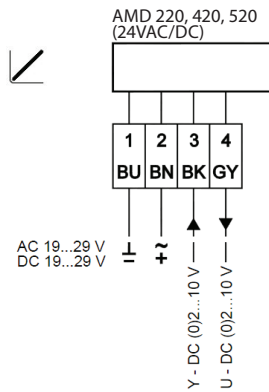
AC 19...29 V  
DC 19...29 V



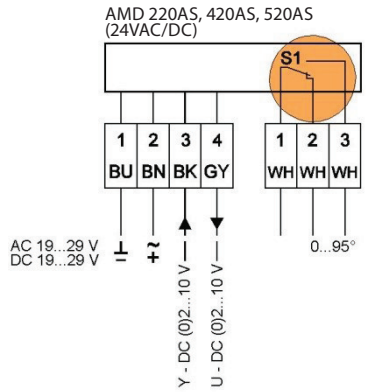
AC 85...265 V



AC 85...265 V



AC 19...29 V  
DC 19...29 V



AC 19...29 V  
DC 19...29 V

