



# techsystem

automatyka klimatyzacja wentylacja

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**M9206-GGx-1**  
Modulating Spring Return Actuator

**Application**

The **JOHNSON CONTROLS** electric, Spring Return damper-actuator series has been specially developed for the motorized operation of safety air dampers (anti-icing) in air conditioning systems, smoke evacuation dampers and sealing dampers. When the control signal is applied the actuator drives the damper to the operational position, while evenly tensioning the integrated spring. After a power failure the stored energy in the spring immediately brings the damper to the safety position.

Manual operation is automatically cancelled when the actuator is in electrical operation. The compact design and universal adapter fitted with limitation of rotation angle make this actuator highly versatile.

**Features**

- DC (2)...10V or 0(4)...20 mA control
- Electrical connections with halogen-free cable
- Up to 5 actuators in parallel operation possible
- Simple direct mounting with universal adapter on Ø 10 mm to 16 mm shaft or 10 mm to 14 mm square shaft 45 mm min shaft length
- Selectable direction of rotation
- Limitation of rotation angle
- 1 adjustable auxiliary switches (See back page for settings)
- Automatic shut-off at end position (overload switch)
- Energy saving at end positions
- Customized versions available
- Devices meet CE requirements



**Technical Specifications**

Actuator	M9206-GGx-1
<b>Torque</b>	6 Nm
<b>Damper area*</b>	1.1 m <sup>2</sup>
<b>Electrical connections</b>	
- Motor control	4-Polig. 1.2 m halogen free
- Auxiliary switches	3-Polig. 1.2 m halogen free
<b>Running time Motor OPEN</b>	25...40 s
<b>Running time Spring return</b>	35...90 s
<b>Supply Voltage</b>	AC 24V ± 25% DC 24 V ± 10%
<b>Frequency</b>	50-60 Hz
<b>Power Consumption</b>	
- Operating	AC 24 V = 12.0 VA
- Operating	DC 24 V = 5.6 VA
- At end position	AC 24 V = 5.0 VA
- At end position	DC 24 V = 2.2 VA
<b>Dimensioning</b>	12.0 VA
<b>Weight</b>	1.6 kg
<b>Control signal</b>	DC 0...10 V / DC 2...10 V adjustable
<b>Position signal</b>	DC 0...10 V / DC 2...10 V
<b>Angle of rotation</b>	
- Working range	93° mech.
- Limitation	34.5°...90
<b>Auxiliary Switches</b>	5(2.9) A, AC 230 V
- setting range	0°...90°
<b>Lifetime</b>	60'000 Rotations
<b>Noise level</b>	51 dB (A)
<b>Protection class</b>	II
<b>Degree of protection</b>	IP 42
<b>Mode of action</b>	Type1
<b>Ambient conditions</b>	
- Operating temperature	-32...+60 °C / IEC 721-3-3
- Storage temperature	-40...+85 °C / IEC 721-3-2
- Humidity	5...95% r.F. no condensed
<b>Service</b>	Maintenance-free
<b>Standards</b>	
- Mechanics	EN 60 529 / EN 60 730-2-14
- Electronics	EN 60 730-2-14
- EMC Emissions	EN 50 081-1:92 / IEC 61000-6-3:96
- EMC Immunity	EN 50 082-2:95 / IEC 61000-6-2:99

**Ordering Codes**

Codes	Descriptions
<b>M9206-GGA-1</b>	AC/DC 24 V
<b>M9206-GGB-1</b>	AC/DC 24 V, with 1 auxiliary switches

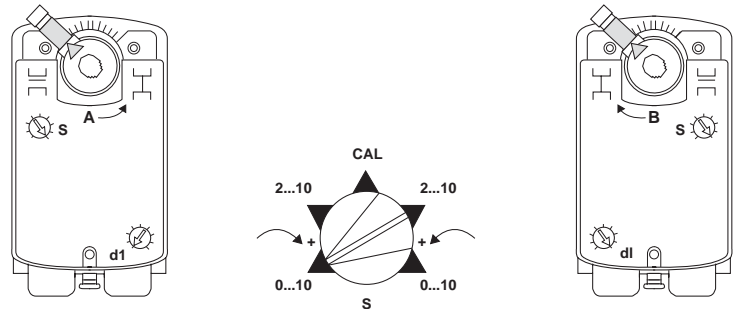
\*Caution: Please note damper manufacturer's information concerning the open/close torque.

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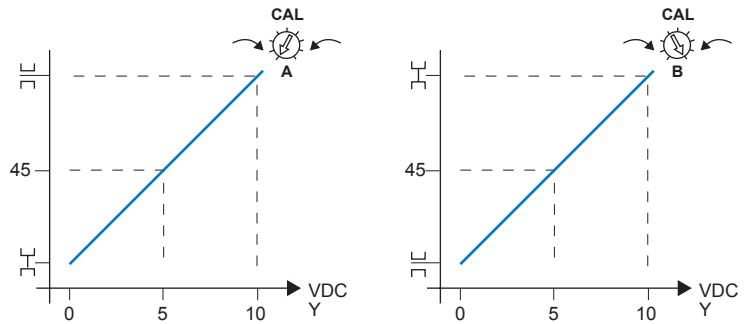
Signal adjust Position

- Choose working field and position of position signal Y by rotary switch d1.
- Processing sequence 1  
Increasing the signal position from 0(2) to 10 V the damper opens.
- Method of functioning 1 «DW»
- Processing sequence 2  
Decreasing the position signal from 10V...2(0) the damper opens.
- Method of functioning 2 «UW»
- Y-position signal  
Voltage: 0(2)...10VDC or  
Current: 0(4)...20 mA  
Attention: The 500Ω resistance is mounted Outside of the tool.  
(See the connection scheme)
- Factory-adjustment  
The tools are adjusted by factory to 0...10 V and Method of functioning «DW».
- Calibration  
If you set a rotation angle limit (e.g. 75°).  
The position signal Y can be adapted to the rotation angle by using the switch d1 on CAL position.
- CAL adjustement  
d1 on position 0...10 =  
Y-Input 0...10V for 90°  
d1 on position CAL =  
 $10V:90^\circ = 0.11V \times 75^\circ = 8.33V$   
d1 on position 2...10 =  
Y-Input 2...10V for 90°  
d1 on position CAL =  
 $8V:90^\circ = 0.08V \times 75^\circ = 6.66V$

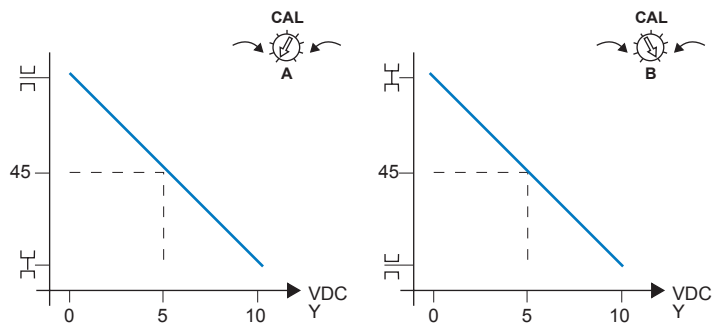
Control signal adjustment (Y)



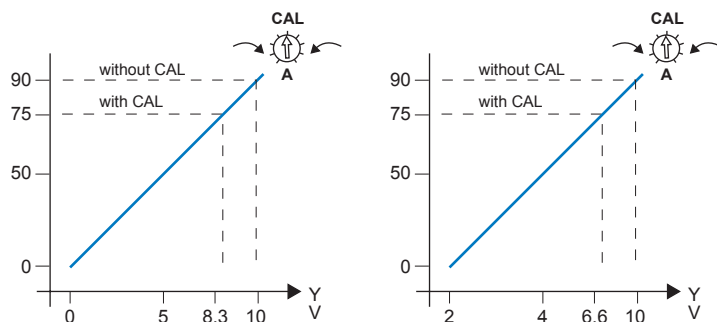
Direct acting (CW)



Reverse acting (CCW)

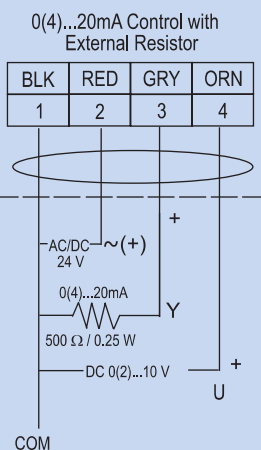
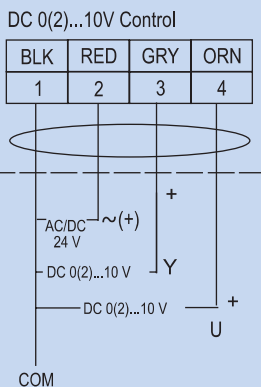


CAL-adjustment

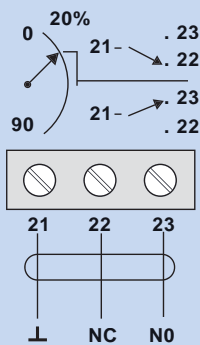


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**Wiring Diagrams**

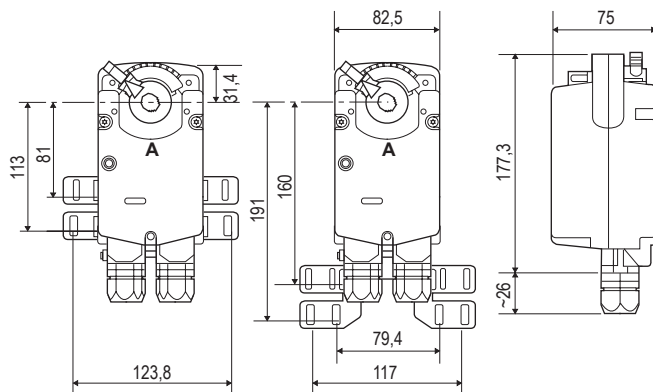


**Auxiliary Switches (S)**



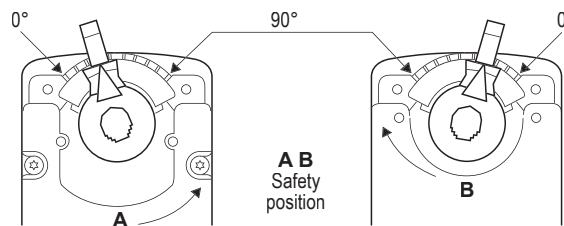
- 1 = Black
- 2 = Red
- 3 = Gray
- 4 = Orange
- 21 = Gray/Black
- 22 = Gray/Blue
- 23 = Gray/Gray

**Dimensions in mm**



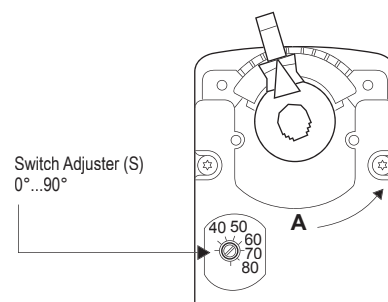
**Changing the direction of rotation**

The direction of rotation can be changed by simply turning the actuator and reversing the shaft adapter.



**Setting the auxiliary switches**

The switch point is adjustable from 0°...90°. The switching position can be manually changed to any required position by turning the ratchet.



**Limitation of rotation Angle**

The limitation of rotation/working range can, through 0° segments 1 and 2, be reduced by up to 30° from both end positions.

