Johnson Controls

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
Torque	6 Nm
Damper area*	1.1 m²
Electrical connections	
- Motor control	4-Polig. 1.2 m halogen free
- Auxiliary switches	3-Polig. 1.2 m halogen free
Running time Motor OPEN	25...40 s
Running time Spring return	35...90 s
Supply Voltage	AC 24V ± 25% DC 24 V ± 10%
Frequency	50-60 Hz
Power Consumption	
- 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
Dimensioning	12.0 VA
Weight	1.6 kg
Control signal	DC 0...10 V / DC 2...10 V adjustable
Position signal	DC 0...10 V / DC 2...10 V
Angle of rotation	
- Working range	93° mech.
- Limitation	34.5°...90
Auxiliary Switches	5(2.9) A, AC 230 V
- setting range	0°...90°
Lifetime	60'000 Rotations
Noise level	51 dB (A)
Protection class	II
Degree of protection	IP 42
Mode of action	Type1
Ambient conditions	
- 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
Service	Maintenance-free
Standards	
- 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

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

Ordering Codes

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

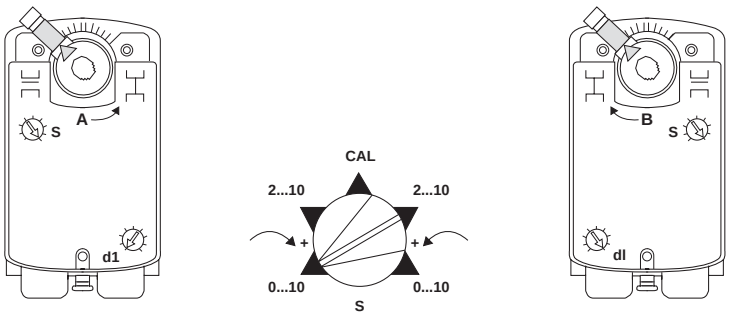
PB_M9206-GGx-1_05 2008

M9206-GGx-1
Modulating Spring Return Actuator

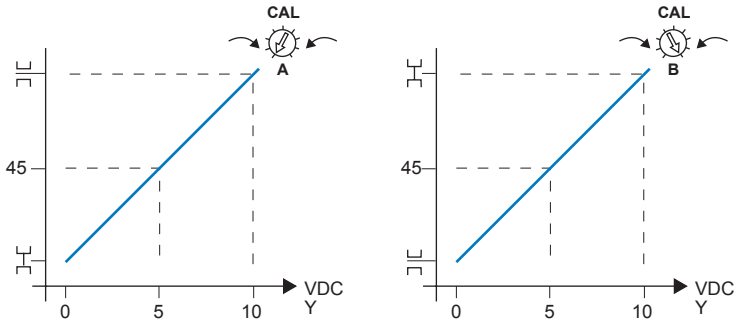
Signal adjust Position

- Choose working field and position of position signal Y by rotary swich 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° = 0.11V x 75° = 8.33V
  d1 on position 2…10 =
  Y-Input 2…10V for 90° =
  d1 on position CAL =
  8V:90° =
  0.08V x 75° = 6.66V

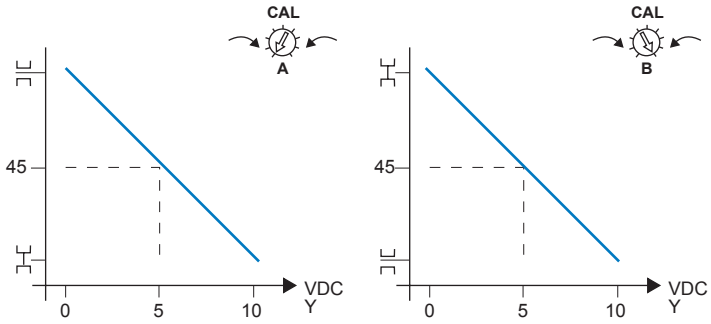
Control signal adjustment (Y)



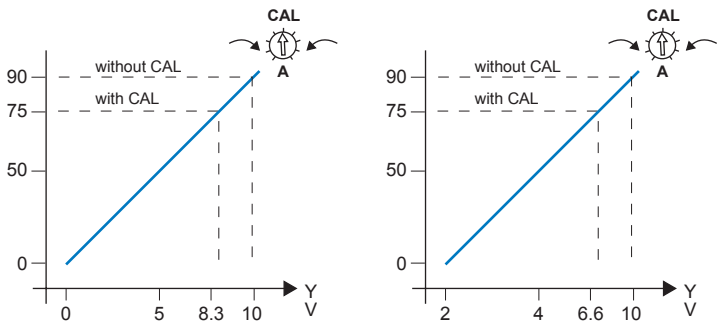
Direct acting (CW)



Reverse acting (CCW)



CAL-adjustment

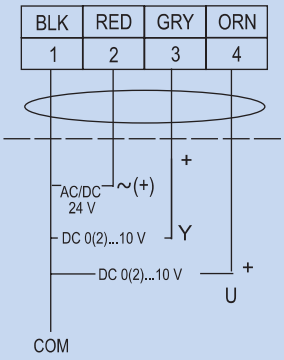


PB_M9206-GGx-1_05 2008

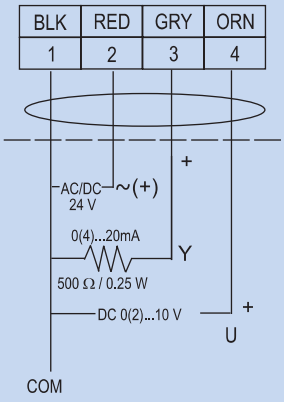
M9206-GGx-1
Modulating Spring Return Actuator

Wiring Diagrams

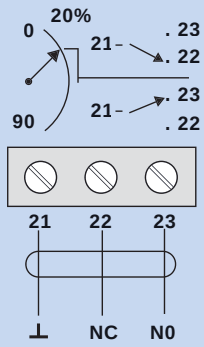
DC 0(2)...10V Control



0(4)...20mA Control with External Resistor

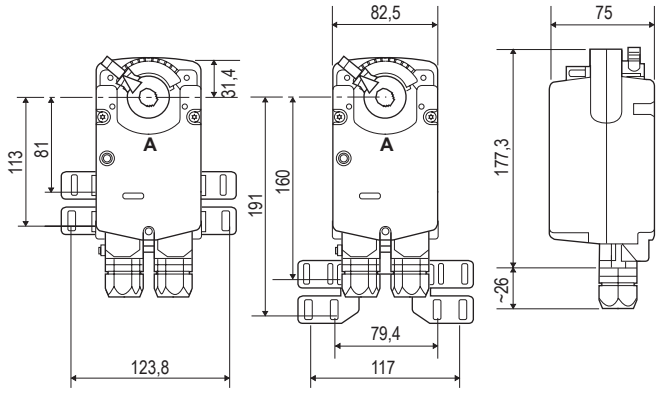


Auxiliary Switches (S)



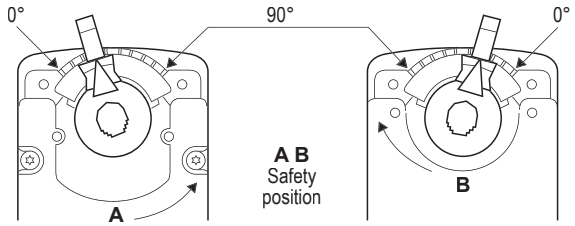
1 = Black
2 = Red
3 = Gray
4 = Orange
21 = Gray/Black
22 = Gray/Blue
23 = Gray/Gray

Dimensions in mm



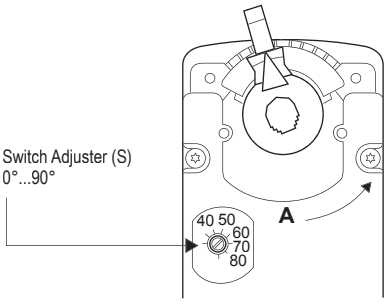
Changing the direction of rotation

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