Johnson Controls

M9216-AGx-1
Floating Spring Return Actuator

Application
The **JOHNSON CONTROLS SPRING RETURN** electric 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
- 3-point control
- Up to 5 actuators in parallel operation possible
- Plug-in terminal block connection
- Simple direct mounting with universal adapter on Ø 10 mm to 20 mm shaft or 10 mm to 16 mm square shaft 77 mm min shaft length
- Selectable direction of rotation
- Limitation of rotation angle
- Manual positioning with crank handle
- 2 adjustable auxiliary switches *(See back page for settings)*
- Automatic shut-off at end position (overload switch)
- Feedback potentiometer
- Energy saving at end positions
- Actuators available with 1 m halogen-free cable
- Customized versions available
- Devices meet CE requirements

Accessories
- ZK Damper linkage selection
- ZKG Ball joints *(see data sheet 6.10)*

Technical Specifications

Actuator	M9216-AGx-1
Torque	16 Nm
Damper area*	3.0 m²
Running Time Motor	90...120 s
Running Time Spring Return	10 s
Supply Voltage	AC/DC 24 V
Frequency	50-60 Hz
Power Consumption	
- Running	10.0 W
- At end position	4.0 W
Dimensioning	18.0 VA / 4 A @ 2 ms
Control Signal	3-Point Floating
Position Signal	Potentiometer
Angle of rotation/Working range	90° (93°mech.)
Angle of rotation/Limitation	0°...30° and 90...60°
Auxiliary Switches	3(1.5) A, AC 230 V
- Setting range	5°...85° < adjustable
Potentiometer load	0.5 W
Tolerance	±10%
Cable aperture connection	PG11
Life time	60.000 rotations
Noise level	50 dB (A)
Protection Class	II
Degree of Protection	IP 54
Mode of Action	Type 1
Ambient conditions	
- Operating temperature	–20...+50 °C / IEC 721-3-3
- Storage temperature	–30...+60°C / IEC 721-3-2
- Humidity	5...95% r.F. no condensed
Weight	2.7 Kg
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
M9216-AGA-1	AC/DC 24 V
M9216-AGC-1	AC/DC 24 V, with 2 auxiliary switches
M9216-AGE-1	AC/DC 24 V, with 1 KΩ feedback potentiometer
M9216-AGD-1	AC/DC 24 V, with 140 Ω feedback potentiometer

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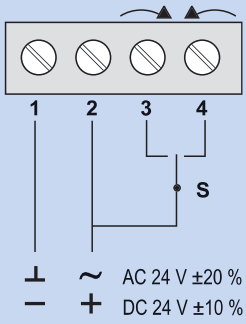
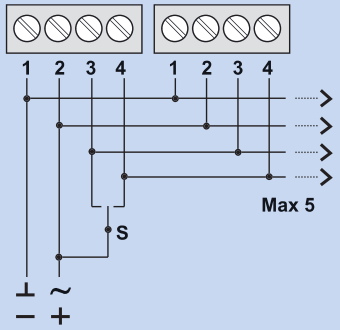
Wiring Diagram

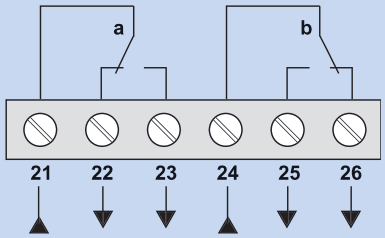


When changing the directions of rotations several times in quick succession, allow a delay of 1 sec. after each change.

Parallel Connections

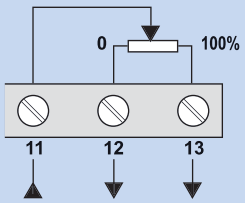


Auxiliary Switches (S)



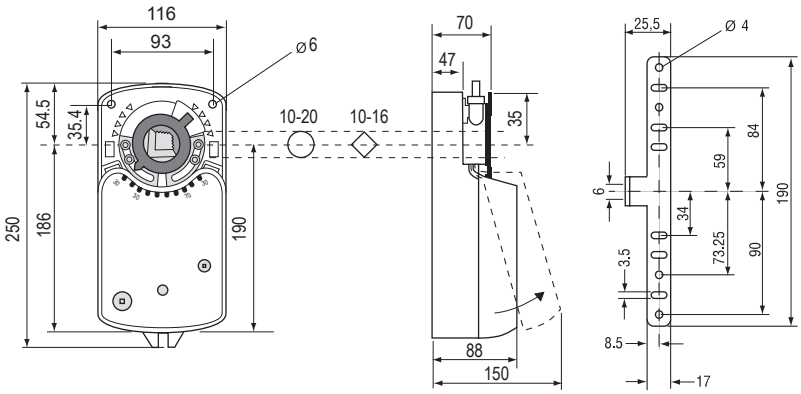
3(1.5)A, AC 230 V
Actuator at 0° position

Potentiometer



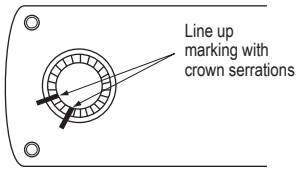
P1= 1 K Ω / 0,5 W ±10 %
P2= 140 K Ω / 0,5 W ±10%

Dimensions in mm

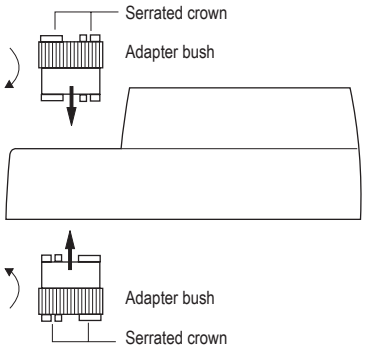


Changing the direction of rotation

The change in rotation direction is archieved by removing the adapter bush from one side and replacing it on the other side.



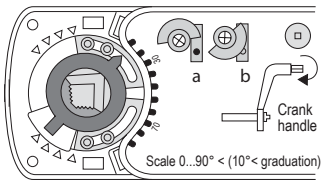
Factory setting:
Clockwise rotation.



Setting the auxiliary switches

Factory setting
Switch **a** at 10°
Switch **b** at 80°

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.