

M9206-Bxx-2S Series

On/Off Electric Spring Return Actuators



M9206-BAB-2S Electric Spring Return Actuator

Description

M9206-Bxx-2S Series direct-mount, spring return electric actuators are designed to position air dampers and valves in Heating, Ventilating, and Air Conditioning (HVAC) systems.

The M9206-Bxx-2S actuators are intended for use with on/off controllers. The M9206-BGx-2S models operate at 24 VAC and the M9206-BAx-2S models operate at 120 VAC 60 Hz. These actuators do not require a damper linkage, and are easily installed on a round shaft up to 1/2 in. (12.7 mm) diameter or a square shaft up to 3/8 in. (10 mm). They may also be mounted to VG1000 Series ball valves using the M9000-513 linkage kit. The M9206-Bxx-2S on/off models deliver 53 lb-in (6 N-m) of torque. The angle of rotation is mechanically adjustable. An integral line voltage auxiliary switch is available on the M9206-BxB-2S models to indicate end-stop position or to perform switching functions.

Features

- reversible mounting design provides Clockwise (CW) or Counterclockwise (CCW) return-to-normal positioning if a power loss occurs

- electronic stall detection throughout entire range increases actuator life by deactivating the actuator motor when an overload is detected
- removable coupler allows actuator stroke adjustment and/or adapts to a shorter damper shaft
- 1/2 in. conduit connections meet local code requirements for wiring and allows easy field wiring on retrofit jobs
- optional auxiliary switch provides adjustable switch point with line voltage (24/120/240 VAC) capability

Applications

- positioning return air, exhaust, or outdoor air dampers
- controlling face and bypass dampers
- positioning valves when used with a ball valve linkage

Repair Parts

Replace unit.

To Order

Specify the code number in the following selection chart.

Accessories

| Code Number | Description |
|----------------|---|
| DMPR-KC003 (a) | Blade Pin Extension without Bracket for Johnson Controls CD-1300 direct-mount applications |
| DMPR-KR003 (a) | Sleeve Pin Kit for Johnson Controls round dampers with a 5/16 in. diameter shaft |
| M9000-161 | Replacement anti-rotation bracket for an M9204 or M9206 actuator mounted on a damper |
| M9000-200 | Commissioning Tool provides a 24 VAC control signal to drive on/off, floating, proportional, or resistive actuators. |
| M9000-513 | Valve Linkage Kit for field mounting an M9206 actuator to either 1/2 in. or 3/4 in. two-way and 1/2 in. three-way VG1000 Series Ball Valve |
| M9000-165 | Mounting Kit used to mount M9206-Bxx-2S actuators in remote-mount, linkage-driven applications |
| M9206-600 | Repair Kit includes a coupler, set screw, and locking clip for mounting an M9204 or M9206 actuator to a 3/8 to 1/2 in. (10.0 to 12.7 mm) round shaft or a 3/8 in. (10 mm) square shaft. |
| M9206-601 | Repair Kit includes a coupler, set screw, and locking clip for mounting an M9204 or M9206 actuator to a 3/8 to 5/8 in. (10 to 16 mm) round shaft or a 3/8 to 9/16 in. (10 to 14 mm) square shaft. |
| M9206-602 | Locking clip for an M9204 or M9206 actuator coupler (bag of 5) |

(a) Furnished with the damper and may be ordered separately.

Selection Chart

| Code Number | Description |
|--------------|--|
| M9206-BGA-2S | Spring return actuator with on/off (two position) control, 24 VAC at 50/60 Hz |
| M9206-BGB-2S | Spring return actuator with on/off (two position) control, 24 VAC at 50/60 Hz and one auxiliary switch |
| M9206-BAA-2S | Spring return actuator with on/off (two position) control, 120 VAC at 60 Hz |
| M9206-BAB-2S | Spring return actuator with on/off (two position) control, 120 VAC at 60 Hz and one auxiliary switch |

Specifications

| M9206-Bxx-2S Series On/Off Electric Spring Return Actuators | |
|---|---|
| Power Requirements | Typically: BGx: Nominal 9.8 VA running; 5.8 VA holding position BAx: Nominal 120 V 60 Hz 0.08 A running; 0.05 A holding position |
| Input Signal | BGx: 20 to 30 VAC at 50/60 Hz Class 2 BAx: 102 to 132 VAC at 60 Hz |
| Auxiliary Switch Rating | BxB Models: One Single-Pole, Double-Throw switch Rating: 24 VAC: 50 VA pilot duty 120 VAC: 5.8 A resistive, 1/4 hp, 275 VA pilot duty 240 VAC, 5.0 A resistive, 1/4 hp, 275 VA pilot duty |

M9206-Bxx-2S Series On/Off Electric Spring Return Actuators (Continued)

Specifications (Continued)

| M9206-Bxx-2S Series On/Off Electric Spring Return Actuators | |
|---|--|
| Spring Return | Direction is selectable with the mounting position of the actuator: CCW actuator face away from the damper for CCW spring return; CW actuator face is away from the damper for CW spring return. |
| Mechanical Output | Running Torque: 53 lb-in (6 N·m) |
| Rotation Range | Adjustable from 34.5 to 90° CW or CCW; mechanically limited to 93° |
| Rotation Time | Powered (On): 10 to 40 seconds for 0 to 53 lb-in (0 to 6 N·m) at all operating conditions. 25 seconds nominal for 50% rated load Unpowered (Off): Spring return time is 35 seconds nominal, 70 seconds maximum |
| Cycles | 60,000 full stroke cycles; rated at 53 lb-in (6 N·m) |
| Audible Noise Rating | 55 dBA nominal at 1 m |
| Electrical Connections | Actuator: 48 in. (1.2 m) cable with 18 AWG wire leads Auxiliary Switch: 48 in. (1.2 m) cable with 18 AWG wire leads |
| Mechanical Connection | 3/8 to 1/2 in. (10.0 to 12.7 mm) diameter round shaft or 3/8 in. (10 mm) square shaft |
| Enclosure | NEMA 2, IP42 |
| Ambient Conditions | Operating: -25 to 140°F (-32 to 60°C); 10 to 90% RH, non-condensing Storage: -40 to 186°F (-40 to 86°C); 5 to 95% RH, non-condensing |
| Dimensions (H x W x D) | BGA: 6.98 x 3.25 x 2.99 in. (177.29 x 82.55 x 75.95 mm) All Other Models: 8.32 x 3.25 x 2.99 in. (211.33 x 82.55 x 75.95 mm) with conduit adaptor |
| Shipping Weight | 3.45 lb (1.56 kg) |
| Agency Compliance | UL Listed, File E27734, CCN XAPX (US) and XAPX7 (Canada) |