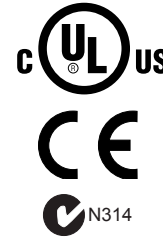


## MS4209F, MS4309F, MS4709F, MS4809F, MS8209F, MS8309F Fast-Acting, Two-Position Actuators

### FOR FIRE/SMOKE CONTROL APPLICATIONS



The MS4209F, MS4309F, MS4709F, MS4809F, MS8209F, MS8309F Fast-Acting, Two-Position Actuators are spring return direct coupled actuators (DCA) with an integral junction box for on/off damper control. The actuator accepts an on/off signal from a single-pole, single-throw (spst) controller. Models are available with clockwise (cw) or counterclockwise (ccw) spring return and are designed to operate reliably in smoke control systems requiring Underwriter's Laboratories Inc. UL555S ratings up to 350°F.

### SPECIFICATION DATA

## SPECIFICATIONS

#### Models:

Model	Spring Return Direction	Voltage in Vac	Torque in lb-in. (N•m)
MS4209F	cw	120	80 (9)
MS4309F	ccw		
MS4709F	cw	230	
MS4809F	ccw		
MS8209F	cw	24	
MS8309F	ccw		

#### Electrical Ratings:

- Power Input:
  - MS4209, MS4309: 120 Vac +10%, -15%, 60 Hz.
  - MS4709, MS4809: 230 Vac ±10%, 50/60 Hz.
  - MS8209, MS8309: 24 Vac +20%, -10%, 50/60 Hz.
- Power Consumption (at Rated Voltage):
  - MS4209, MS4309: Holding: 0.13A, 7W. Running (at 80 lb-in.): 0.25A, 23W.
  - MS4709, MS4809: Holding: 0.09A, 7W. Running (at 80 lb-in.): 0.13A, 23W.
  - MS8209, MS8309: Holding: 7 VA. Running (at 80 lb-in.): 23 VA.

#### Electrical Connections:

- MS4209, MS4309, MS8209, MS8309: Two color coded 16 in. leads.
- MS4709, MS4809: 1m appliance cable.
- Ground screw.
- Three 7/8 in. conduit connection holes (fittings not included).

#### Controller Type:

- MS4209, MS4309: Line voltage (120 Vac), two-position, spst (Series 40).
- MS4709, MS4809: Line voltage (230 Vac), two-position, spst (Series 40).
- MS8209, MS8309: Low voltage (24 Vac), two-position, spst (Series 80).

#### Device Weight:

- 5 lb (2.3 kg).

#### Temperature Ratings:

- Ambient: 0°F to 130°F (-18°C to 55°C).
- Shipping and Storage: -40°F to 140°F (-40°C to 60°C).

#### Humidity Rating:

- 5% to 95% RH noncondensing.

## FEATURES

- 80 lb-in. (9 N•m) minimum driving torque at 350°F (176°C).
- Integral spring return ensures level of return torque.
- Stainless steel internal spring.
- Fifteen-second spring return timing.
- No special cycling required during long-term holding.
- No audible noise during holding.
- Patent pending design eliminates need for limit switches to reduce power consumption.
- Models available for 24, 120, and 230 Vac.
- Ninety-five degree angle of rotation.
- Actuator holds rated torque at reduced power level.
- Die-cast aluminum housing.
- Housing design allows flush mounting to damper.
- Integral junction box with three conduit openings eliminates need for separate wiring box.
- High-temperature indicator included.

#### IMPORTANT

- The actuator is designed to meet UL555S standards at 350°F (176°C). The actuator must be tested with the damper to achieve this rating.
- Honeywell does not recommend using linkages with these actuators because side-loading of the output hub reduces actuator life.

#### Stroke:

- 95° ± 3°, mechanically limited.

#### Torque Rating (at Rated Voltage):

- Typical Holding (0°F to 350°F): 80 lb-in. (9 N•m).
- Typical Driving (0°F to 350°F): 80 lb-in. (9 N•m).
- Spring Return: 80 lb-in. (9 N•m).
- Stall Maximum: 240 lb-in. (27 N•m).

#### Noise Ratings (Maximum):

- Driving Open: 80 dBA at 1m.
- Holding: 20 dBA at 1m (no audible noise).

#### Timing (at Rated Torque and Voltage):

- Drive Open:
  - Ambient Conditions: 25 sec maximum, 14 sec typical.
  - At 350°F: 75 sec maximum.
- Spring Close: 20 sec maximum.

#### Design Life (at Rated Voltage):

- 60,000 full stroke cycles.

#### Minimum Damper Shaft Length:

- 1-1/2 in. (38 mm).



MS4209F, MS4309F, MS4709F, MS4809F, MS8209F, MS8309F FAST-ACTING, TWO-POSITION ACTUATORS

**Cycling Requirements:**

- ❑ Prolonged holding-period (1 year) testing of these actuators has been performed with no spring return failures. The actuator and the internal spring are designed to require no special cycling during long-term holding.
- ❑ Honeywell recommends following all local, state and national codes for periodic testing of the entire smoke control system. Refer to National Fire Protection Association (NFPA) National Fire Codes®: NFPA90A, NFPA92A and NFPA92B for your application.
- ❑ NFPA recommends periodic examination of each fire/smoke damper (semi-annually or annually) to ensure proper performance.

**Mounting:**

- ❑ 3/8 to 1/2 in. square or round damper shafts.
- ❑ The actuator can be mounted with shaft in any position.
- ❑ Secure hub to shaft with:
  - ❑ MS4709, MS4809: Four 3 mm set screws. Use 3 mm Allen wrench to tighten set screws.
  - ❑ MS4209, MS4309, MS8209, MS8309: 1/4-28 UNF set screws. Use 1/8 Allen wrench to tighten set screws.

**Environmental Protection Ratings:**

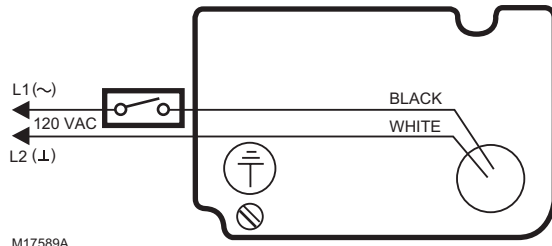
	MS4209, MS4309	MS4709, MS4809, MS8209, MS8309
NEMA1	X	X
IP54		X

**Approvals:**

	MS4209, MS4309	MS4709, MS4809, MS8209, MS8309
UL/cUL	X	X
UL873 Plenum Rating, File No. E4436; Guide No. XAPX	X	X
CE		X
C-TICK		X

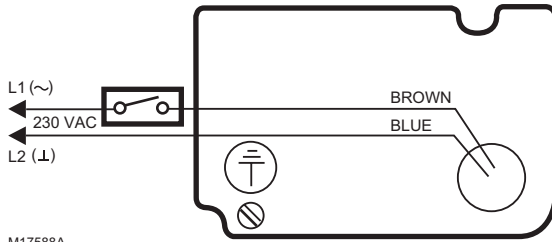
**Accessories (not supplied with actuator):**

- ❑ 201391 Shaft Adapter for 3/8 in. shafts.
- ❑ 205649 Mounting Bracket.
- ❑ 32003532-002 Dual Auxiliary Switch Package for UL555(S) applications.



M17589A

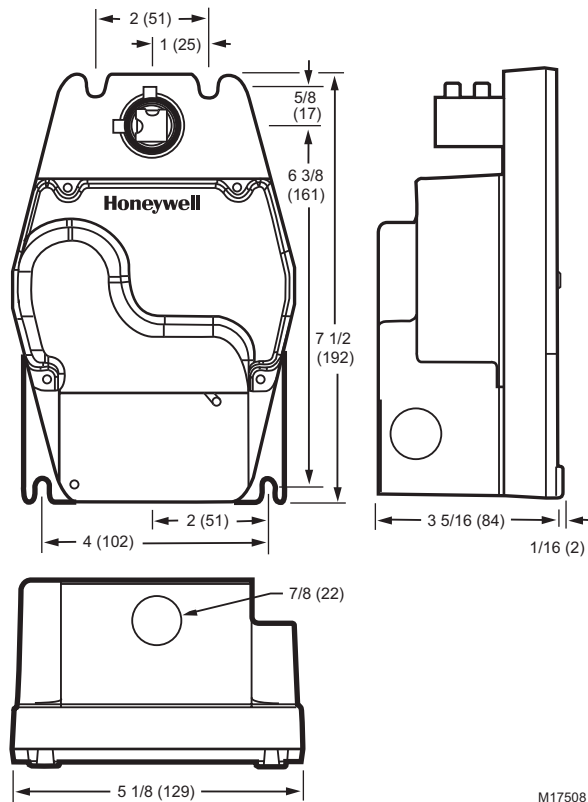
Fig. 2. Typical 120 Vac wiring.



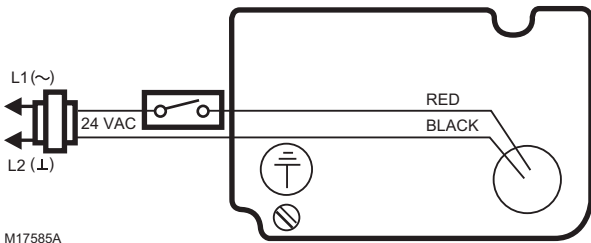
M17588A

Fig. 3. Typical 230 Vac wiring.

**Dimensions:**



M17508



M17585A

Fig. 1. Typical 24 Vac wiring.

National Fire Codes® is a registered trademark of the National Fire Protection Association (NFPA).

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