

# Honeywell

## MS4209F, MS4309F, MS4709F, MS4809F, MS8209F, MS8309F

### Fast-Acting, Two-Position Actuators

#### FOR FIRE/SMOKE CONTROL APPLICATIONS



#### 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.

**Design Life (at Rated Voltage):** 60,000 full stroke cycles.

#### 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).

**Device Weight:** 5 lb (2.3 kg).

**Stroke:** 95° ± 3°, mechanically limited.

**Noise Ratings (Maximum):**

Driving Open: 80 dBA at 1m.

Holding: 20 dBA at 1m (no audible noise).

#### 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).

#### 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).

#### 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).

#### 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.

**Humidity Rating:** 5% to 95% RH noncondensing.

**Minimum Damper Shaft Length:** 1-1/2 in. (38 mm).

#### 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.

**Table 1. MS4209, LMS4309, MS4709, MS4809,  
MS9209, MS8309, DCA 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		

## CAUTION

**Device Malfunction Hazard.**  
Improper set screw tightening causes device malfunction.

Tighten set screws with proper torque to prevent damper shaft slippage.

## CAUTION

**Actuator Damage Hazard.**  
Using actuator as shaft bearing causes device damage.

Use actuator only to supply rotational torque. Avoid side loads to actuator output coupling bearings.

To install actuator, proceed as follows:

1. Place actuator over damper shaft; and hold mounting bracket in place. See Fig. 2.
2. Mark screw holes on damper housing.
3. Remove actuator and mounting bracket.
4. Drill or center-punch holes for mounting screws (or use no.10 self-tapping sheet metal screws).
5. Turn damper blades to desired normal (closed) position.
6. Place actuator and mounting bracket back into position and secure bracket to damper box with sheet metal screws.
7. Tighten set screws securely into damper shaft using minimum 30 lb-in., maximum 60 lb-in. torque. Use 1/8 in. or 3 mm Allen wrench (see Specifications for details) to tighten set screws.

## Wiring

See Fig. 4 through 6 for typical wiring diagrams.

## WARNING

**Electrical Power Hazard.**  
Line voltage can cause death or serious injury and short equipment circuitry. Disconnect power supply before installation.

## CAUTION

**Electrical Shock or Equipment Damage Hazard.** Low voltage can shock individuals or short equipment circuitry.

Disconnect power supply before installation.

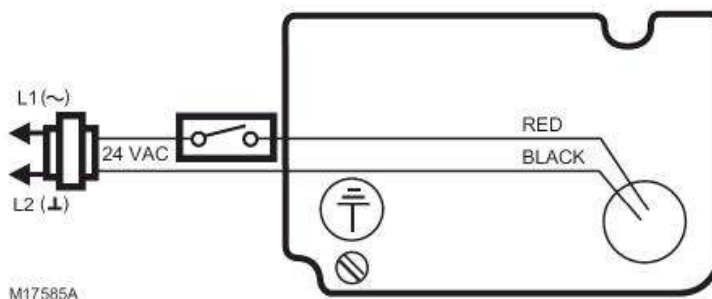


Fig. 4. Typical 24 Vac wiring.

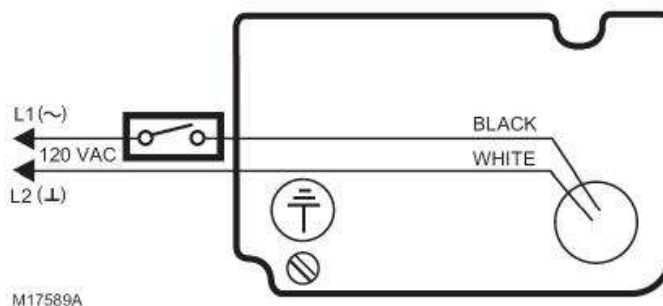


Fig. 5. Typical 120 Vac wiring.

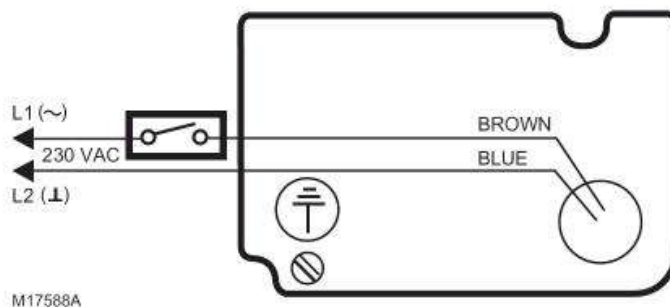


Fig. 6. Typical 230 Vac wiring.