

INSTALLATION INSTRUCTIONS

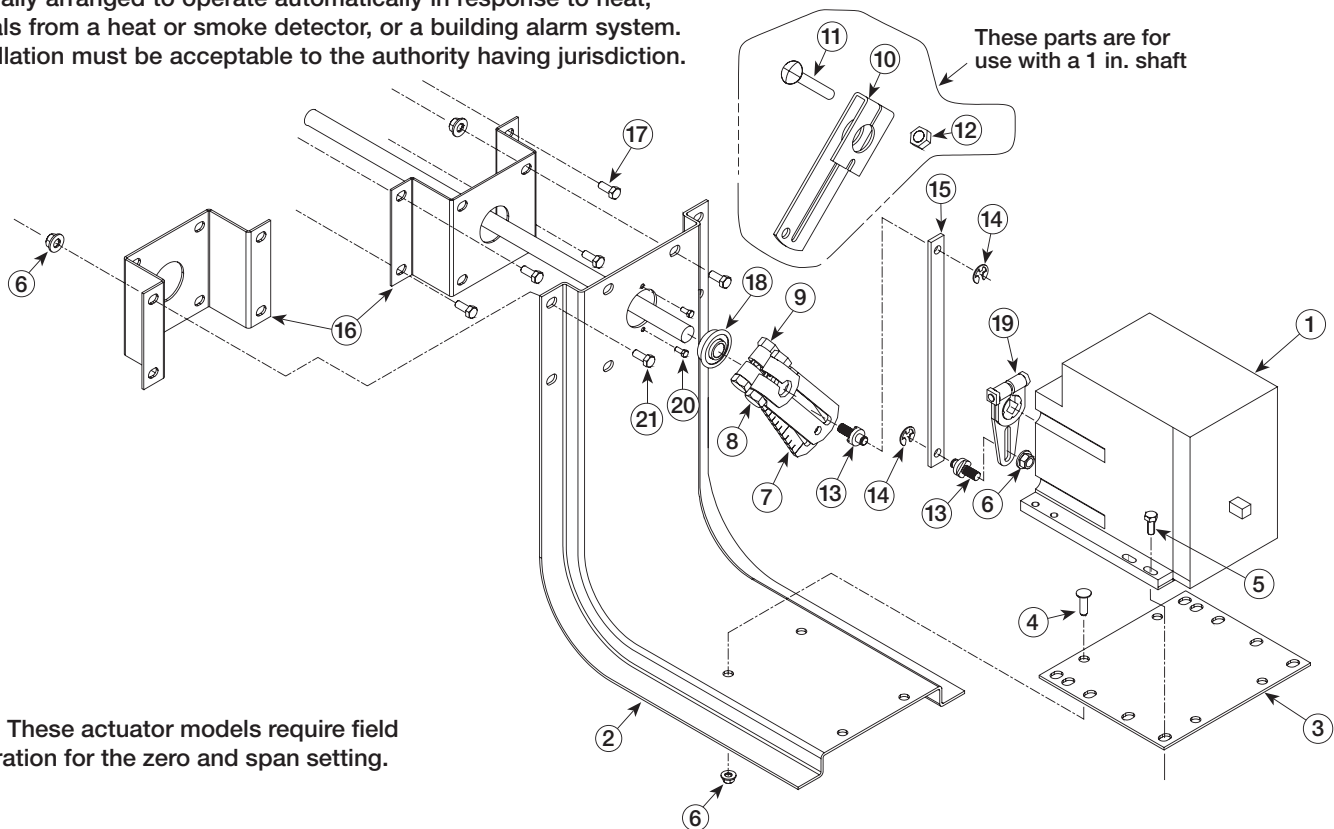
Honeywell Modutrol IV Series Actuators Models M4182, M9185D, & M8182 UL Listed Electric Actuators with Two Position Control

These instructions apply to the external field installation of Honeywell actuators on Greenheck model VCD Control Dampers, FSD Fire/Smoke Dampers, and SMD Smoke Dampers when they are duct mounted or sleeved.

Honeywell actuators rotate to their energized position when power is applied and spring return to their fail position when power is interrupted, except for the M9185D which is a modulating actuator that spring returns to the fail position when power is interrupted.

The M9185 model actuator, when installed on model FSD fire/smoke and SMD smoke dampers in accordance with these instructions, complies with the requirements of NFPA 90A and UL Standards 555 and 555S. Smoke or Fire/Smoke dampers are normally arranged to operate automatically in response to heat, signals from a heat or smoke detector, or a building alarm system. Installation must be acceptable to the authority having jurisdiction.

Tools Required:
Wrenches:
(1) ³/₈, (2) ¹/₂, (1) ⁹/₁₆, (1) ⁷/₁₆, and (1) ⁵/₁₆
(1) Hammer



Note: These actuator models require field calibration for the zero and span setting.

Part Number	Quantity	Description	Part Number	Quantity	Description
1	1	Actuator	12	1	³ / ₈ -16 Spinlock Nut
2	1	Mounting Bracket	13	2	Linkage Adjustment Pin
3	1	Mounting Plate	14	2	¹ / ₄ in. E-Ring
4	4	¹ / ₄ -20 x ¹ / ₂ in. Threadstud	15	1	Drive Link
5	4	¹ / ₄ -20 x ³ / ₄ in. Threadcutting Screw	16	1	Stand Off Bracket
6	10	¹ / ₄ -20 Spinlock Nut	17	4	¹ / ₄ in. -20 x ¹ / ₂ in. Thread Cutting Screw
7	2	¹ / ₂ in. Crankarm	18	1	Ball Bearing
8	2	⁵ / ₁₆ -18 x 1 ¹ / ₂ in. Bolt	19	1	221455A Crankarm
9	2	⁵ / ₁₆ -18 Spinlock Nut	20	2	#10 Tek Screw
10	1	1 in. Crankarm	21	4	¹ / ₄ in. -20 x ¹ / ₂ in. Hex Bolt
11	1	³ / ₈ -16 x 2 ¹ / ₂ in. Carriage Bolt			

Instructions:

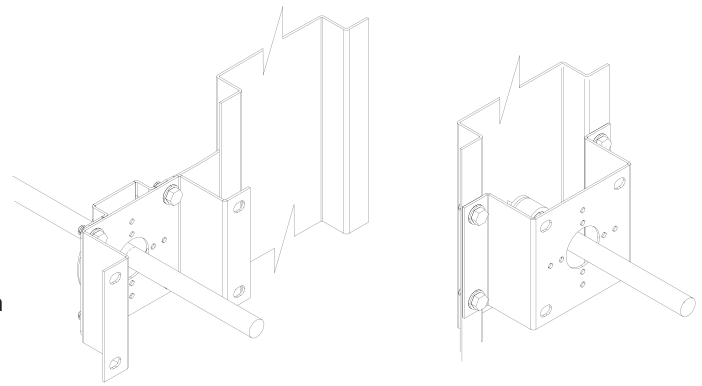
These installation instructions assume the damper is already mounted in a duct or sleeve with the damper shaft extending beyond the sleeve or duct 6 inches.

1. Install the stand off bracket (item 16).

Dampers with a jackshaft

- 1a. Mount the stand off bracket onto the jackshaft bracket with (4) 1/4-20 X 1/2 in. thread cutting screws (item 17). Use the orientation shown on this page.

Note: The bracket must be perpendicular to the damper on the duct or sleeve and the bracket's shaft hole must be centered on the jackshaft.



Orientation of Stand Off Bracket for a jackshaft driven damper

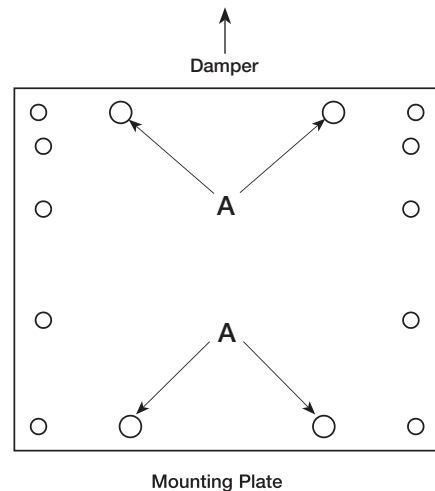
Orientation of Stand Off Bracket for a directly driven damper

Dampers without a jackshaft (Shaft Extension)

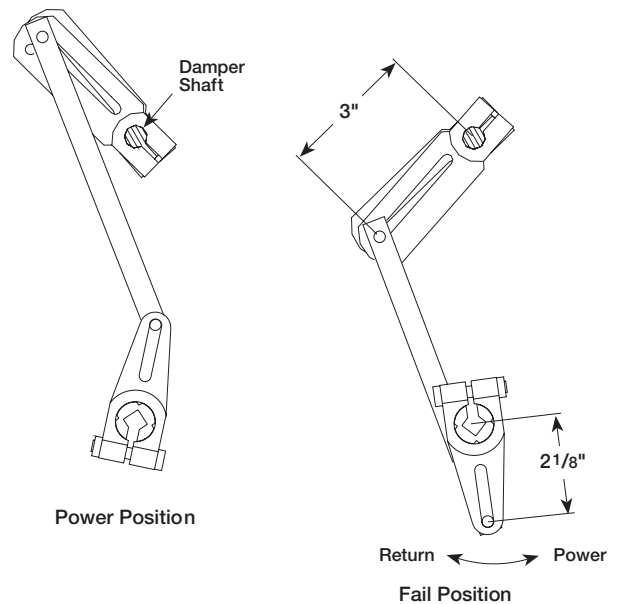
- 1b. Mount the stand off bracket (item 16) spanning across the damper frame flanges. Use the orientation shown to the right. Fasten to the damper frame with (4) #14 Tek screws, supplied in the field. Be sure not to run the screws into the damper linkage, which is between the flanges.

Note: The bracket must be perpendicular to the damper on the duct or sleeve and the bracket's shaft hole must be centered on the shaft extension.

2. Fasten the mounting plate (item 3) to the mounting bracket (item 2) using (4) 1/4- 20 x 1/2 in. thread studs (item 4), and (4) 1/4-20 spinlock nuts (item 6), through the matching four hole pattern on the mounting bracket labeled "A" on the illustration. Note that the mounting bracket has only one pattern that will match the mounting plate pattern.
3. Mount the mounting bracket (item 2) to the stand off bracket using (4) 1/4-20 x 1/2 in. bolts (item 21) and (4) 1/4- 20 Spinlock nuts (item 6) included with this kit. Use the outer four holes of the mounting bracket for jackshafted models and the inner four holes for directly driven models.
4. If the damper has a 1/2 in. dia. damper shaft, mount the ball bearing (item 18), into the mounting bracket with two #10 Tek screws (item 20). The Tek screws are required to keep the thrust forces from pushing the bearing out of the mounting bracket. If the damper shaft is 1 in. in diameter then no ball bearing is required.
5. Mount the actuator to the mounting plate in the corresponding holes using (3) 1/4-20 x 3/4 in. thread cutting screws (item 5). Note that the actuator must be mounted with the shaft in the horizontal position.



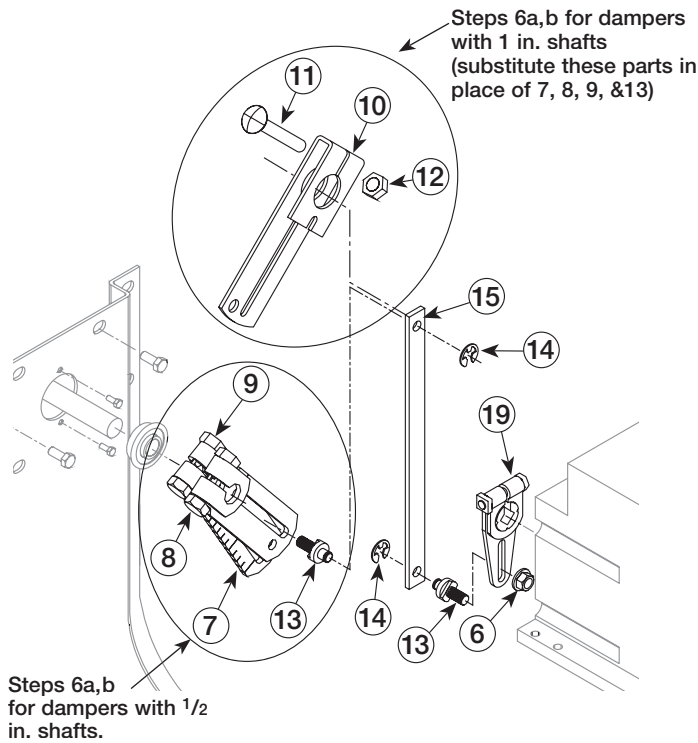
Mounting Plate



Power Position

Return ← Power →
Fail Position

Counter-Clockwise to Fail Position



6. Assemble the linkage

Parts needed for dampers with 1/2 in. shafts:

- (Qty. 2) 1/2 in. crankarms (item 7)
- (Qty. 2) 5/16 - 18 x 1 1/2 in. bolts (item 8)
- (Qty. 2) 5/16 - 18 spinlock nuts (item 9)
- (Qty. 1) Drive link (item 15)
- (Qty. 2) Linkage adjustment pin (item 13)
- (Qty. 2) 1/4 - 20 spinlock nuts (item 6)
- (Qty. 1) Actuator crankarm (item 19)
- (Qty. 2) 1/4 in. E-Ring (item 14)

Parts needed for dampers with 1 in. shafts:

- (Qty. 1) 1 in. crankarm (item 10)
- (Qty. 1) 3/8 -16 x 2 1/2 in. bolts (#11)
- (Qty. 1) 3/8 -16 spinlock nut (#12)
- (Qty. 1) Drive link (#15)
- (Qty. 2) Linkage adjustment pin (#13)
- (Qty. 2) 1/4 in. - 20 spinlock nuts (#6)
- (Qty. 1) Actuator crankarm (#19)
- (Qty. 2) 1/4 in. E-Ring (#14)

6a. Assemble the shaft crankarms.

For dampers with 1/2 in. shafts:

The damper shaft crankarms must be placed as mirror images of each other, meaning the like sides face each other. The bolts and nuts are to be positioned as in the exploded view.

For dampers with 1 in. shafts:

The 1 in. crankarm, item 10, must be in the position shown in the encircled exploded view shown above left. Position the bolt and nut as shown in the same diagram.

6b. For dampers with 1/2 in. shafts:

Insert a linkage adjustment pin through both of the crankarm slots. Position it 3 in. from the center of the damper shaft. Secure it there with a 1/4-20 spinlock nut (item 6).

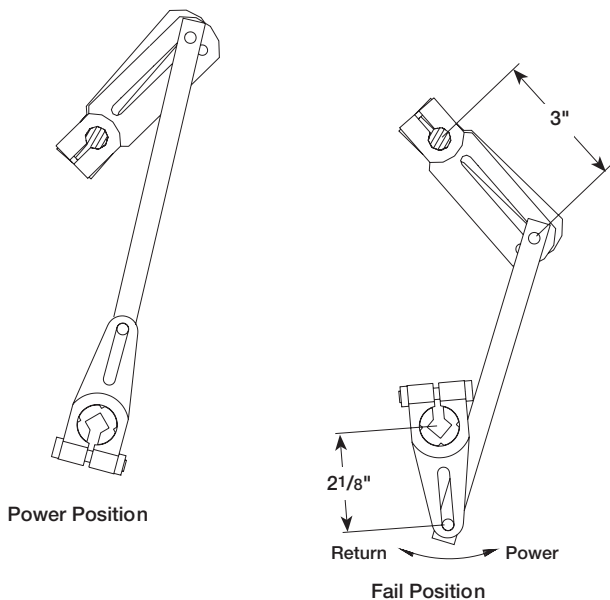
For dampers with 1 in. shafts:

Insert a linkage adjustment pin through the 1 in. crankarm (item 10) slot. Position it 3 in. from the center of the damper shaft. Secure it there with a 1/4-20 spinlock nut (item 6).

6c. Attach the drive link to the damper shaft crankarms by inserting the linkage adjustment pin through one of the drive link's holes and fastening it with an E-ring (item 14).

6d. Attach the drive link to the actuator crankarm with the linkage adjustment pin, a spinlock nut and an E-ring (item 14). Set the linkage adjustment pin 2 1/8 in. from the actuator shaft center and secure it there with the spinlock nut. Fasten the other end through the empty drive link hole with the E-ring (item 14).

7. Note the damper shaft rotation for fail direction and orient the linkage appropriately as shown in the linkage illustration. The damper linkage is now in its fail position. Position the damper blades to their proper position (open or closed). Tighten the bolts



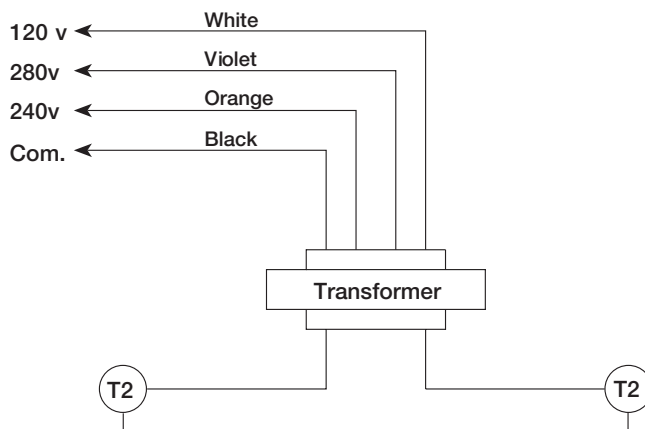
Clockwise to Fail Position

8. Wire the actuator according to the appropriate wiring illustration that identifies the actuator's electrical connections. Wiring should be per an approved project or job wiring diagram and must comply with all applicable electrical codes

Note: Tape or wire nut all unused leads.

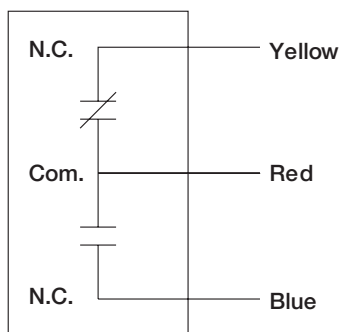
9. Apply power to the actuator.

The damper blades should fully open or close and return to the fail position when power is disconnected, if they do not, adjustments can be made by resetting the crankarm position on the damper or actuator shaft, or by adjusting the 3 in. dimension on the damper shaft crankarms.

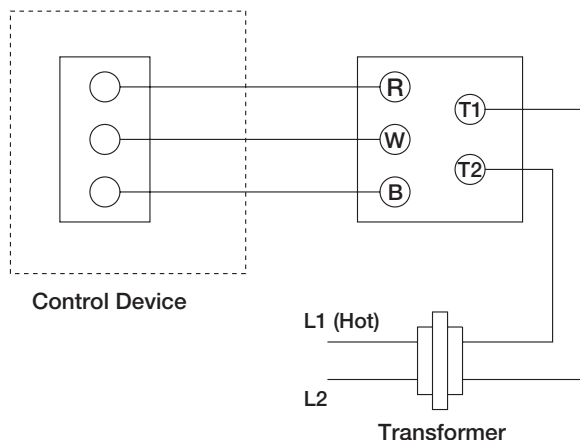


Model M4182 Wiring Connections

Note: Model M8182 is a 24 Volt actuator with no transformer. Connections must be made directly to T1 and T2.



Auxiliary Switch Wiring Connections
(All colors are tracers on white wire)



Model M9185 Wiring Connections

Note: This is a modulating actuator that requires a control signal to operate.

Electrical Ratings			
	Voltage (V@ 50/60 Hz)	Current Draw (A)	Power consumption (W)
Without Transformer	24	.86	20
With Internal Transformer	120	.25	25
	208	.14	25
	240	.13	25
Controller Type: Two wire, on-off switching action			

Auxiliary Switch Ratings (Amperes)		
	120V	240V
Full Load	7.2	3.6
Locked Rotor	43.2	21.6
Ratings for 40 VA pilot duty, 120/240 VAC on opposite contact		



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454200 Honeywell M4182, M8182, M9185 IOM
Rev. 5 August 2005

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