



## TECHNICAL DATA SHEET

### 600 Series Electric Actuators

2 Otter Court, Raymond, New Hampshire 03077 • Tel. (603) 895-4761 • FAX (603) 895-6785 • www.geminivalve.com



#### DESCRIPTION

The 600 Series electric actuators can be used with all sizes of the Gemini 76, 86, 96, 82, 89 and 309 Series ball valves. Two model sizes are available, the 150 in-lb model 615 and the 300 in-lb model 630.

#### MATERIALS OF CONSTRUCTION

**ENCLOSURE:** Dupont® FR50 Cover, Teflon® Coated Cast Aluminum Base

**SHAFT:** 18-8 Stainless Steel

**EXTERNAL TRIM:** 300 Series Stainless Steel

#### RATINGS / SPECIFICATIONS

**TEMPERATURE:** 40° F to 150°F

**ENCLOSURE:** NEMA 4X

**MOTOR:** Reversing, Brushless, Capacitor-Run with Auto-Reset Thermal Overload Protection.

**GEAR TRAIN:** Permanently Lubricated, Maintenance Free

**POWER:** 120VAC 50/60 Hz Single Phase

**PORTS:** (2) 1/2" N.P.T. Conduit

**CYCLE TIME:** 6 Seconds

**DUTY CYCLE:** Model 615 - 100%, Model 630 - 75%

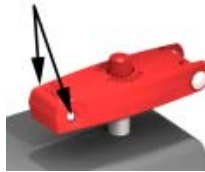
**TORQUE OUTPUT:** Model 615 - 150 in-lbs, Model 630 - 300 in-lbs.

**OVERRIDE:** Manual - Fold Out Lever Handle

## MANUAL OVERRIDE OPERATION

The push-button manual override system allows the user to easily disengage the electric drive gear train for manual operation of the actuator. All external power must be off prior to using the manual override feature. The actuator manual override handle can be used in the closed or open (lever extended) position to provide additional leverage. To open the handle, pinch the Lever Release Buttons and pull up. Press down the manual override button (atop the center) and turn the handle to manually open or close the actuated valve assembly. To reengage the drive train, release the override button and turn the handle until the manual override button 'clicks' signaling the re-engagement of the drive train. The manual override lever handle can then be closed.

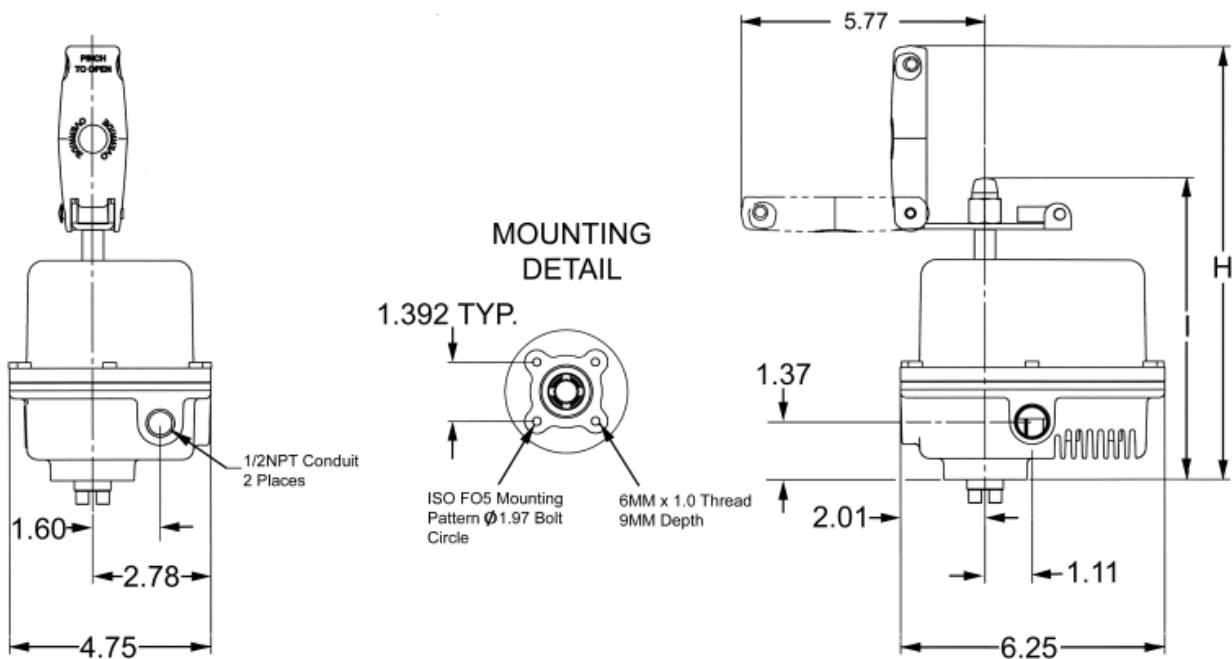
Lever Release Buttons



Manual Override Button



## DIMENSIONS



Model	Output (IN* LBS.)	Cycle Time (Seconds)	Amps (Full Load)	Duty Cycle*	H	I
615-120AC	150	6	0.5	100%	10.35	7.19
630-120AC	300	6	0.9	75%	10.85	7.69

\* Duty Cycle Measured at Maximum Output, 70 F Ambient

## ACTUATOR TO VALVE MOUNTING INSTRUCTIONS 76, 82, 86, & 96 SERIES

These instructions detail the procedure for installing a Gemini 600 Series electric actuator on a drive-key equipped Gemini 76, 82, 86, 96 & 89 Series ball valve. Valves may be purchased with the drive-key assembled or may be retrofitted with a drive-key conversion kit.

76, 82, 86 & 96 Series:

1. Install locator screws in bottom of the electric actuator and tighten with 4mm hex drive torqued to 30-40 inch lbs. (Figure 1)

2. Place the mounting bracket on actuator so that locator screws fit into blind holes on bottom of bracket.

3. Check to make sure the bracket is seated flush against bottom of electric actuator mounting pad. Install bracket mounting screws with 5mm hex drive torqued to 65-75 inch lbs.

4. Check to make sure that valve is in the closed position and that the stem nut is in the proper orientation with respect to the drive key (Figure 2). Note: Valve will not engage driver unless stem nut is in proper orientation.

5. Verify that the actuator is in the closed position. The override handle should be parallel to the short side of the unit as illustrated.

6. Install the valve into the mounting bracket as shown in Figure 3. Engagement of the valve and drive mechanism should require little effort. The top of the valve should lie flat in the appropriate step so that the bracket straddles the sides of the hex to resist any rotation.

7. Position the retainer on the underside of the valve and fasten to the actuator bracket with the two hex head cap screws. Alternate tightening the screws to ensure balanced tension and to avoid skewing of the valve retainer strap relative to the valve body. A gap should remain between the lower surface of the bracket and the retainer 'ears' when the assembly is complete (Figure 4). Your Gemini actuated valve is now ready for service.

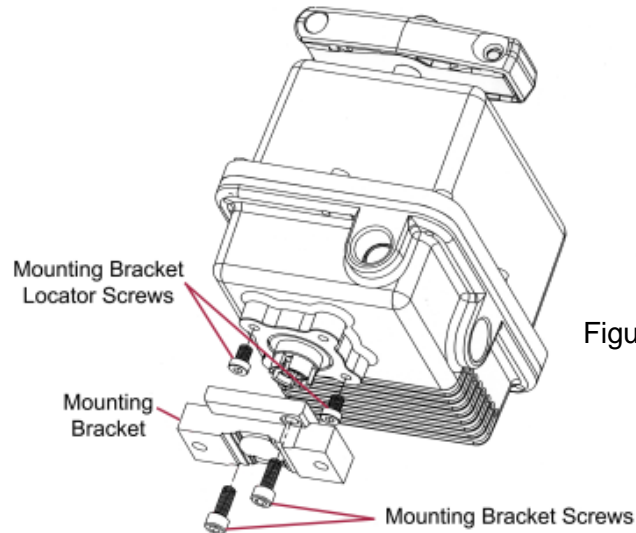


Figure 1



Figure 2

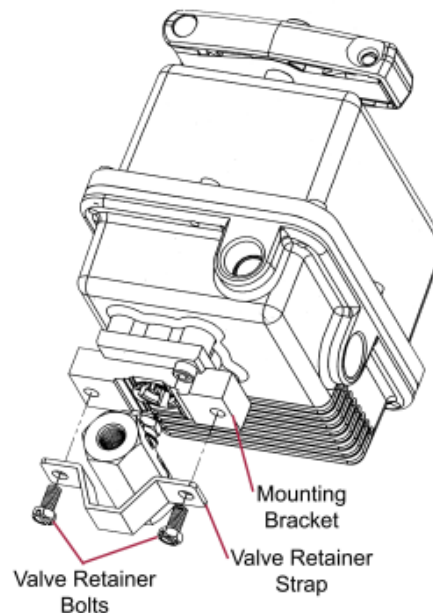


Figure 3

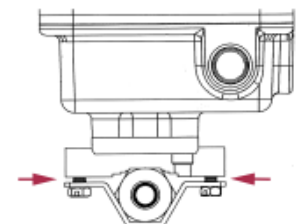


Figure 4

## ACTUATOR TO VALVE MOUNTING INSTRUCTIONS 89 SERIES

89 Series:

1. Install locator screws in bottom of the electric actuator and tighten with 4mm hex drive torqued to 30-40 inch lbs. (Figure 1)
2. Place the mounting bracket on actuator so that locator screws fit into blind holes on bottom of bracket.
3. Check to make sure the bracket is seated flush against bottom of electric actuator mounting pad. Install bracket mounting screws with 5mm hex drive torqued to 65-75 inch lbs. .
4. Check to make sure that valve is in the closed position and that the stem nut is in the proper orientation with respect to the drive key (Figure 2). Note: Valve will not engage driver unless stem nut is in proper orientation.
5. Verify that the actuator is in the closed position. The override handle should be parallel to the short side of the unit as illustrated.
6. Install the valve into the mounting bracket as shown in Figure 3. Engagement of the valve and drive mechanism should require little effort. Install valve mounting screws. Your Gemini actuated valve is now ready for service.

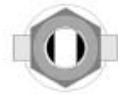
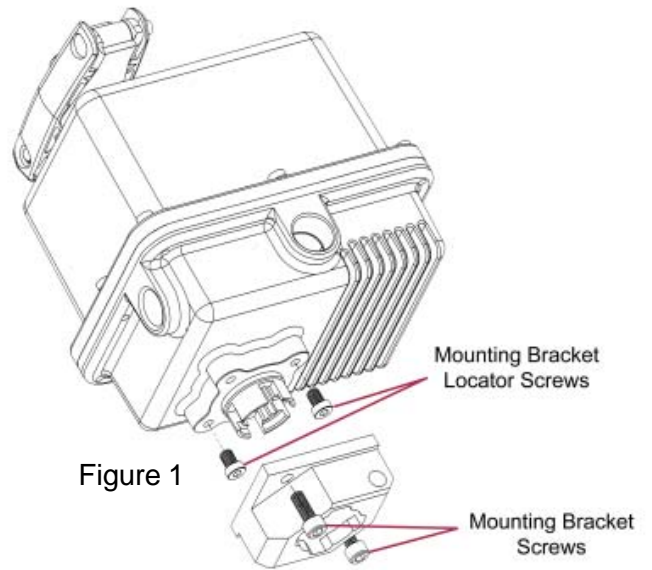
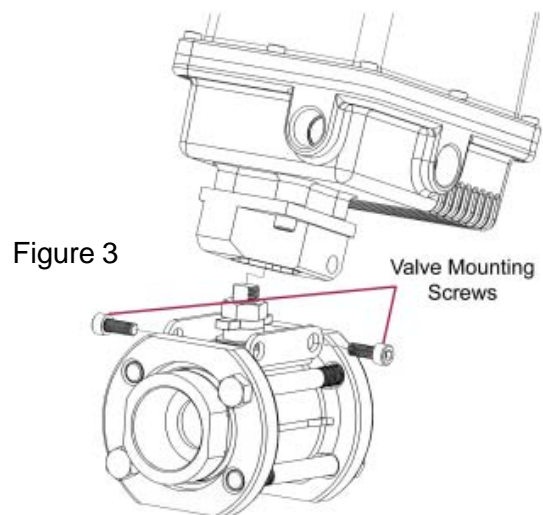


Figure 2

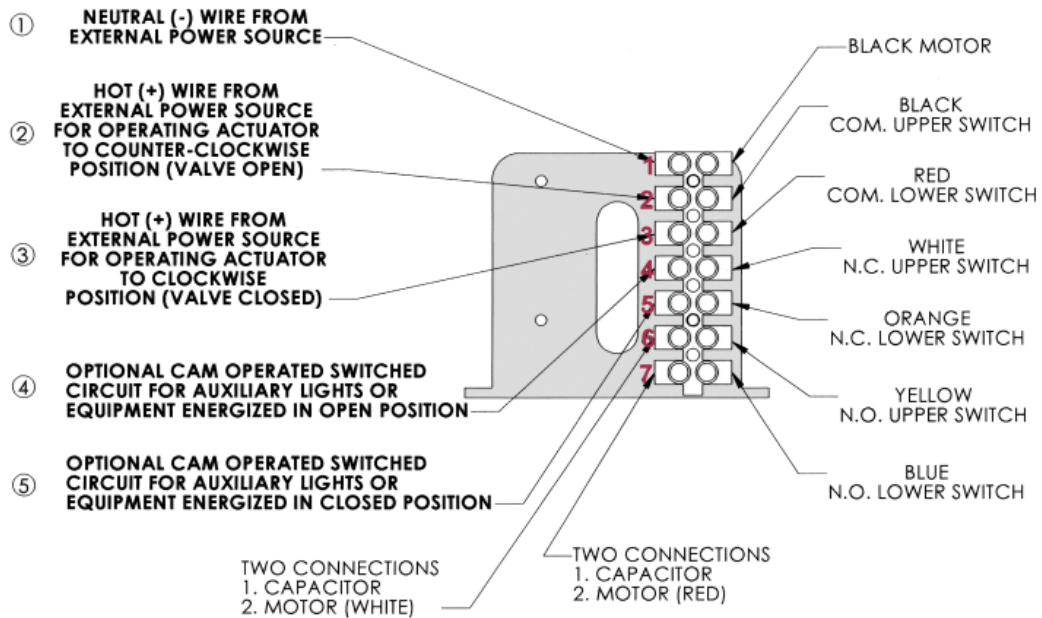
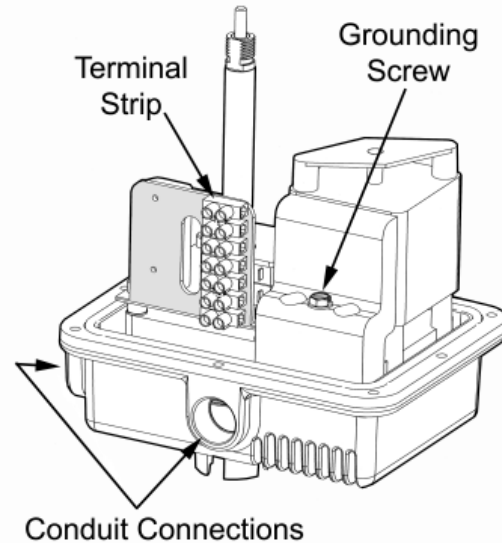


## WIRING INSTRUCTIONS - AC MODELS

These instructions detail the procedure for wiring Gemini 600 Series AC model electric actuators.

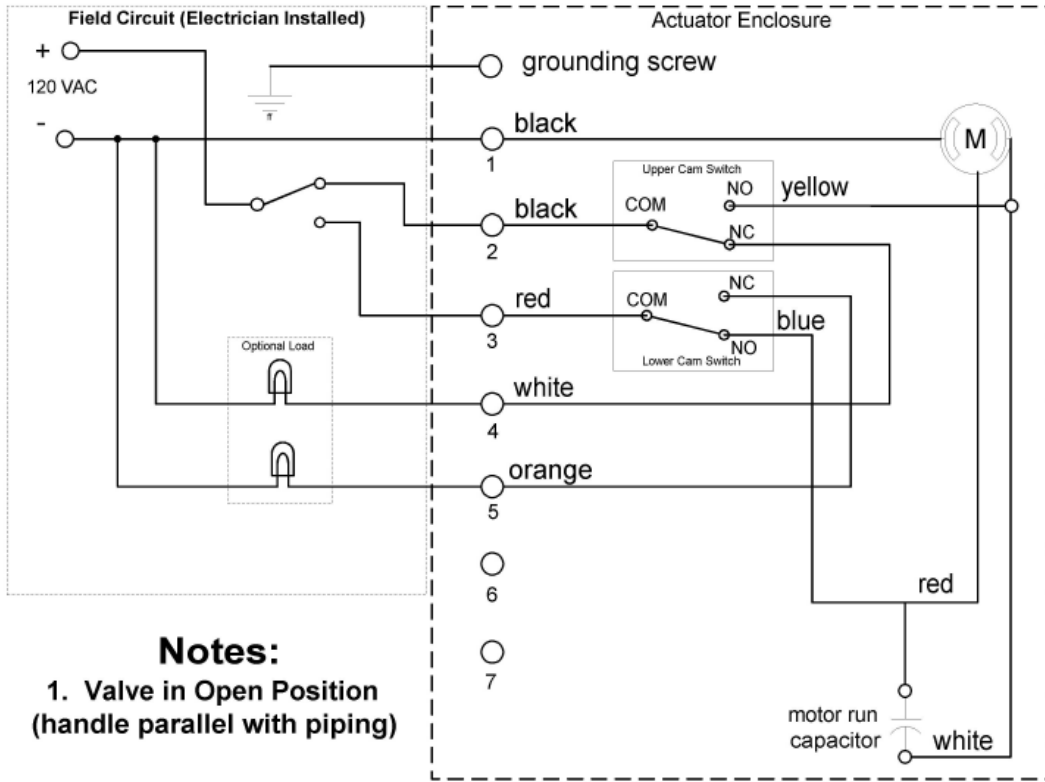
1. Unlatch and open the override handle to access the handle nut. Remove nut with 3/4" wrench.
2. Remove eight (8) socket head screws with 3mm hex wrench. Remove cover by pulling straight up.
3. Route the wire to be terminated through conduit hub and up through the access space to the terminal block. Strip insulation back 1/4", insert the stripped ends directly into the proper terminal clamps and tighten screws. All internal connections are labeled in the diagram below.

4. Attach grounding wire to green screw that is located on top of conduction bar.
5. Verify that cover o-ring is properly seated in groove. Replace cover and screws.



Connections ① through ⑤ are to be made by field electrician

# 120AC Wiring Schematic



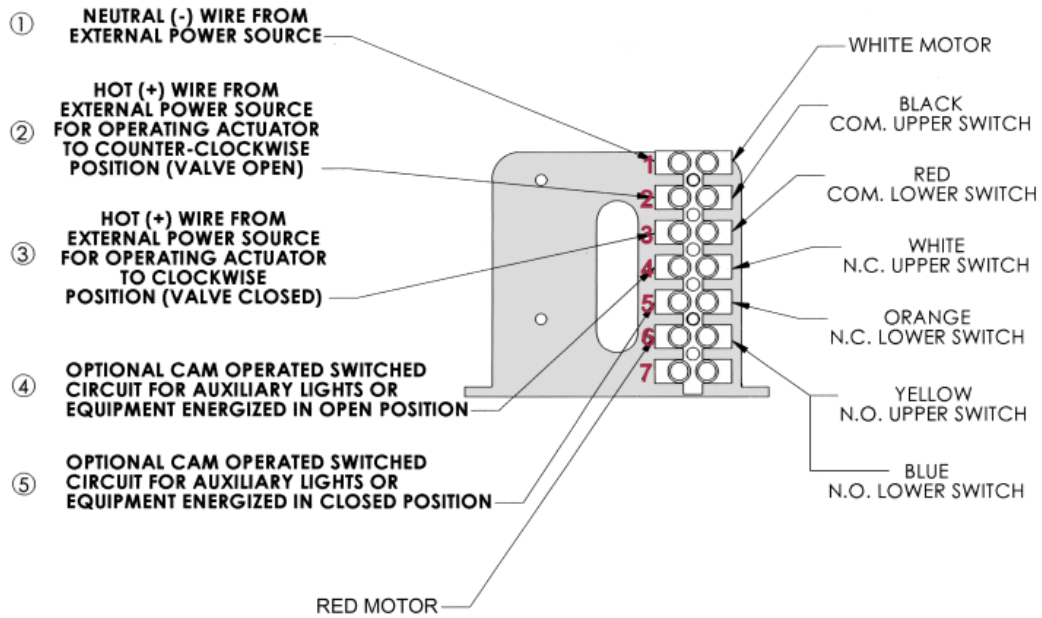
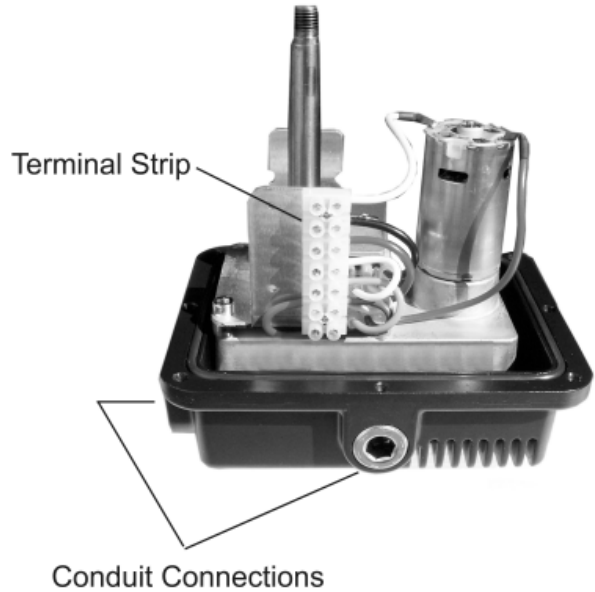
**Notes:**  
1. Valve in Open Position  
(handle parallel with piping)

## WIRING INSTRUCTIONS - DC MODELS

These instructions detail the procedure for wiring Gemini 600 Series DC model electric actuators.

1. Unlatch and open the override handle to access the handle nut. Remove nut with 3/4" wrench.
2. Remove eight (8) socket head screws with 3mm hex wrench. Remove cover by pulling straight up.
3. Route the wire to be terminated through conduit hub and up through the access space to the terminal block. Strip insulation back 1/4", insert the stripped ends directly into the proper terminal clamps and tighten screws. All internal connections are labeled in the diagram below.

4. Verify that cover o-ring is properly seated in groove. Replace cover and screws.



Connections ① through ⑤ are to be made by field electrician



# 12/24VDC Wiring Schematic

