Engineered Performance

Electra actuators can be found controlling today’s valves in a wide range of applications, from industrial process to temperature control. The proven design is manufactured by the latest technology. The entire enclosure is die cast then machined on precision CNC machining centers. Electra actuators time tested products are balanced by our continued investment in research and development. Through innovation and cutting edge technology the Electra quarter turn actuator leads the valve automation industry today.

- Modular Construction
  Truly modular design allows the actuator to be easily field modified and serviced.

- High Strength Transmission
  One piece worm gear and segment are precision machined for efficient energy transfer, quiet operation and long service life.

- Guaranteed Minimum Torques
  All actuators are torque tested under load before shipment. We guarantee that the output torque meet the rating on the tag.

- NEMA 4 Enclosure
  Actuators contain o-rings to ensure no ingress of moisture. The ceramic heater is standard and protects the actuator against condensation.

- Extended Duty Cycle
  Electra actuators are rated for extended duty service with extended performance of starts and stops per hour.
Model 600 Features

1. Enclosure
Die cast high grade aluminum alloy housing is light, compact and durable. The housing is hard anodized inside and out, then polyester powder coated on the exterior for superior corrosion protection in all environments. The die cast housing is engineered with a lip where the actuator is joined. This lip allows the water to shed off and not enter the housing. The rugged sealed watertight enclosure is rated NEMA 4, 4x, protected from ingress of any dirt or moisture.

2. Motors
Motors are engineered for high-torque, low current draw and high duty cycle ratings. Single phase, squirrel cage capacitor run motors are F class insulated and protected from overload by a thermostat with automatic reset.

3. Capacitors
The capacitor is custom engineered for each single phase motor. Each capacitor is peak motor voltage rated for maximum service life.

4. Self Locking Gearing
Precision machined cut alloy gearing is self locking and will not back drive. All gearing is greased and lubricated for life.

5. Position Indicator
The position indicator is mechanically driven by the output drive shaft for reliable opening and closing status of the valve. The movement of the valve can be easily viewed from the top of the actuator. The lens is permanently sealed to guard against moisture.

6. Heater
Guards against condensation, see page 4 for details.

7. Actuator Mounting
Drilling is in accordance with ISO 5211 allowing easy installation of the actuator directly to small ISO ball valves.

8. Output Drive
The female output drive allows for direct mounting to the shaft of small ball valves. The star drive is machined to conform to DIN 3337 standard.

9. Terminal Strip
Highly visible labeling for every connection to help avoid wiring mistakes. Maximum 12 points are standard. Spring loaded terminal strip is proven reliable to keep a tight wiring connection.

10. Dual Conduit Entrance
Allows full electrical code access of all wiring through two entrances. Conduit entrances come standard with seal tight, watertight conduit fittings.

11. Captive Bolts
Cover bolts are specifically designed to prevent loss during servicing of the actuator. All external captive bolts are stainless steel for corrosion protection.

12. Weather Seal
Seals actuator housing against water and debris.

13. Manual Override
For manually cycling the valve, see page 4 for details.

14. Travel Limit Switch
SPDT switches with adjustable cams, see page 4 for details.
Model 600 Features

Manual Operation
Allows the valve to be rotated when power is not present. First look at the indicator to determine if the valve is open or closed. To move the valve manually to the open position from the closed position rotate the knob counter clockwise. To move the valve manually to the closed position from the open position rotate the knob clockwise. Once power is applied the actuator will return to the original position. Keep manual override knob clear, when power is applied the knob rotates. The manual override is easy to turn and requires very low effort to operate.

Travel Limit Switch
The 600 series actuator comes standard with (2) SPDT travel limit switches open/closed and (2) auxiliary switches open/closed. The (2) travel limit switches are used to shut the motor down at end of travel. The (2) auxiliary switches are used to communicate with other appliances. Cams for each of the four switches are intermittently adjustable by hand with an allen wrench. Each cam is labeled for simple field calibration. Once the cam is set it locks in place and is engineered to withstand plant induced vibration.

Heater and Thermostat
The pre-wired space heater is installed in every actuator to prevent damage caused by condensation collecting inside the actuator. The heater is equipped with a thermostat to prevent overheating.

- On/Off actuators need to be wired to supply power to the heater and thermostat.
- Modulating actuators are pre-jumpered so when power is hooked up to the actuator the heater and thermostat will function properly.

Outline Dimensions
Note: Allow 3.5" for cover removal

Modulating Actuators
Model 600 Construction

Performance
Sample model number: 600-02 (120 VAC Electric, Output Torque of 600 IN-LB)

<table>
<thead>
<tr>
<th>Torque</th>
<th>Model / Amp Draw</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Lb</td>
<td>NM</td>
</tr>
<tr>
<td>600</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>02</td>
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<tr>
<td></td>
<td>12</td>
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<tr>
<td></td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>8</td>
</tr>
</tbody>
</table>

Specification

- Enclosure: Weatherproof enclosure rated NEMA 4, 4X, (IP67)
- Power supply (600): 120 VAC, Single phase 50 / 60 Hertz, ± 10%
- Power Supply (610): 24 VAC, Single phase 50 / 60 Hertz, ± 10%
- Power Supply (615): 24 VDC, Single phase 50 / 60 Hertz, ± 10%
- Duty cycle: 70%
- Motor: Reversible motor
- Limit switches: 2 SPDT open and closed, 250 VAC 3 Amp rating
- Auxiliary switches: 2 SPDT open and closed, 250 VAC 3 Amp rating
- Space heater: 3 Watt (115/220 VAC) anti-condensation
- Manual override: Handwheel hexagon design
- Conduit entries: Two Hubble type seal tight fittings
- Motor Reversible motor
- Limit switches: 2 SPDT open and closed, 250 VAC 3 Amp rating
- Auxiliary switches: 2 SPDT open and closed, 250 VAC 3 Amp rating
- Space heater: 3 Watt (115/220 VAC) anti-condensation
- Manual override: Handwheel hexagon design
- Conduit entries: Two Hubble type seal tight fittings
- Rotation: 320° ±10° (0°-330°)
- Operating temperature: -4°F to 158°F (on/off) -4°F to 140°F (modulating actuators)
- External coating: Polyester powder coating
- Mounting orientation: Can be mounted in any orientation
- Modulating control (Optional): Proportional control board 0-10 VDC or 4-20 MA input
- Feedback current (Optional): Current position transmitter 0-10 VDC or 4-20 MA output
- Application (Optional): Ball Valves

Model 600 Electrical

![Diagram of Actuator Wiring](image-url)
Model 600-02
Modulating

120 VAC

WIRING TO ACTUATOR

J2 Neutral, L1 Line, Earth Gnd.
+ Signal Gnd.
Black
White
Red

+ 10 Volt
6
+ 24 Volt
7
- 20.6-10 Volt
5

J1

J2 + CUSTOMER INCOMING POWER / SIGNAL

Notes:
1. Field Wiring is shown as reference and not supplied with the actuator.
2. Always verify specific actuator model to correct wiring diagram.
3. Rotation as viewed from above actuator.
4. Wiring as shown in full counterclockwise position (CCW).
5. Each actuator must be powered through its own individual switch or relay contact(s) to prevent cross-connections. Equipment must be damaged if parallel wired. This voids the manufacturer’s warranty.
6. Seal tight water tight conduit connections must be used to maintain NEMA 4 rating.
7. All grounds must be isolated from each other in the customers equipment.
8. Take care in selecting the correct equipment.
9. Modulating PCB Card use a 6.3 Amp slow blow fuse.

Electra Actuators

On/Off

Model 600-02

Model 600-02

Model 610-02

On/Off

Model 610-02

On/Off

Model 615-02

On/Off

Model 615-02

24 VAC

CUSTOMER INCOMING POWER (24 VAC)

AUX CONTACT 2 EXTRA SWITCHES MAX. 250VAC 5A

SUGGESTED CUSTOMER’S WIRING

ACTUATOR WIRING

Control Board

Auxiliary Switch Detail

Optional Log Rate Feedback

2 EXTRA SWITCHES

AUX. CONTACT

MAX. 250VAC 5A

Notes:
1. Field Wiring is shown as reference and not supplied with the actuator.
2. Always verify specific actuator model to correct wiring diagram.
3. Rotation as viewed from above actuator.
4. Wiring as shown in full counterclockwise position (CCW).
5. Each actuator must be powered through its own individual switch or relay contact(s) to prevent cross-connections. Equipment must be damaged if parallel wired. This voids the manufacturer’s warranty.
6. Seal tight water tight conduit connections must be used to maintain NEMA 4 rating.
7. All grounds must be isolated from each other in the customers equipment.
8. Take care in selecting the correct equipment.
9. Modulating PCB Card use a 6.3 Amp slow blow fuse.

4575 Damascus Rd, Memphis, TN 38118  F (901)363-1123 | P (901)794-5790  www.valveteck.com
Model 700 Features

Electrical

1. Enclosure
Die cast aluminum alloy housing is light, compact and durable. The housing is hard anodized inside and out, then polyester powder coated on the exterior for superior corrosion protection in all environments. The housing is engineered with overlaying lips that form a barrier ring that allows the water to shed off and not enter the housing. The housing is rated NEMA 4 for protection from ingress of dirt or moisture.

2. Motor
Motors are engineered for high-torque, low current draw, and high duty cycle ratings. Single phase squirrel cage capacitor run motors are F class insulated, and protected by overload by a thermostat with automatic reset.

3. Capacitor (700-00)
The capacitor is custom engineered for each single phase motor. Each capacitor is peak motor voltage rated for maximum service life.

4. Electra Tag
UL approved label, details electrical ratings and enclosure type.

5. Terminal Strip
Highly visible labeling for every connection to help avoid wiring mistakes. Maximum 25 points are standard. Spring loaded terminal strip is proven reliable to keep a tight wiring connection.

6. Dual Conduit Entrance
Allows full electrical code access of all wiring through (2) entrances. Conduit entrances are 3/4" NPT connections.

7. Weather Seals
Elastomer o-ring seals prevents the ingress of moisture and debris.

8. Heater
Anti-condensation heater guards against condensation.

9. Travel Limit
(2) - SPDT Switches with adjustable cams.

10. Torque Switch
(2) - Fixed torque sensing switches.
1. **Self Locking Gearing**
High efficiency, self locking double reduction gearing consists of a worm and segment gear output mechanism. Precision cut steel worm wheel and bronze segment are engineered to withstand locked rotor conditions. When electrical power is off, the gearing provides exact and stable positioning of the actuator without a brake. All gearing is greased and lubricated for life.

2. **Position Indicator**
The position indicator is mechanically driven by the output drive shaft for reliable opening and closing status of the valve. The movement of the valve can be easily viewed from the top of the actuator. The lens is permanently sealed to guard against condensation.

3. **Disc Springs**
Located at each end of the main worm wheel these “Belleville washers” detect axial torque movement in either the open or the closed location and translate the movement to the torque switch for motor protection.

4. **Actuator Mounting**
Drilling is in accordance with ISO 5211 allowing easy mechanical installation of the actuator directly to other ISO flanged valves. Each actuator is supplied with a blank drive insert, machining by others.

5. **Mechanical Travel Stops**
Externally adjustable stainless steel mechanical travel stops are provided to permit precise travel adjustment of the actuator movement. The settings of the mechanical stops provides travel limitation for both electrical and manual operation in the open and closed position.

6. **Declutching Override**
For manual positioning of the valve when power is off.

7. **High Cycle Mechanical Bearing**
Located under the motor to allow smooth energy transfer from the motor to the gear train.
Model 700 Features

Manual Operation
Allows the valve to be rotated when power is not present. The hand/auto declutch lever makes manual valve operation simple, no cheater bar is needed even for tightly sealed valves. With very low effort the lever pulls towards the handwheel and locks perpendicular. The casting marks on the handwheel show the rotation direction of handwheel. Once power is restored to the actuator, the internal clutch mechanism automatically returns to the original position. The clutch ensures that the handwheel can not be rotated by the motor. The hand lever can be locked out and tagged out for safety.

Torque Limit Switches
Two torque switches are factory installed and calibrated with each actuator. Torque switches will stop the travel of the valve in either the open or close position. If the output torque of the actuator exceeds the preset torque limit, the switches sense the axial movement of the worm shaft and interrupt electrical power to the motor. The torque switches create protection for both the valve and actuator.

Heater and Thermostat
The pre-wired space heater is installed in every actuator to prevent damage caused by condensation. The heater is equipped with a thermostat to prevent overheating.

- On/Off actuators need to be wired to supply power to the heater and thermostat.
- Modulating actuators are pre-jumpered so when power is supplied to the actuator, the heater and thermostat will function properly.

Travel Limit Switch
The 700 series actuator comes standard with (2) SPDT travel limit switches and (2) SPDT auxiliary switches for the open/closed positions. The (2) travel limit switches are used to shut the motor down at end of travel. The (2) auxiliary switches are used to communicate with other appliances. Cams for each of the four switches are intermittently adjustable by hand with an allen wrench. Each cam is labeled for simple field calibration. Once the cam is set it locks in place and is engineered to withstand plant induced vibration.
Local Control Station

- Light and compact integrated design
- Enclosure: powder coated, double sealed to keep out moisture and corrosion
- Power supply: single phase 115 VAC
- LED display shows conditions: power / remote / fault / opening / closing
- Digital display shows local or remote, position bar graph, numerical open/close percent
- Stainless steel captive bolts
- Designed to withstand high vibration environments
- Switch can be padlocked in any position

Local Power Disconnect

- Selector switch cuts off incoming power supply.
- Non-intrusive method to allow the handwheel clutch to engage to use the manual override.
- Power supply: 115 VAC
- LED indication: power/manual
- Enclosure powder coated and sealed to keep out moisture.
- Compact design.
Cycle Timer
The repeat cycle timer is a compact module that extends the operating time of AC actuators by pulsing the motor on and off. Extending the cycle time of an actuator can avoid problems associated with water hammer and control system instabilities. The on time is adjustable 0.1 to 1 seconds, and the off time is adjustable from 0.5 to 10 seconds. The onboard LED indicator aids in setting the on/off times by turning on and off with the load.

Log Rate Controller
The log rate controller (LRC) is designed for continuous modulating applications. The LRC extends the actuator life by averaging the rapidly changing input signals, thus reducing unnecessary hunting for valve position. The LRC includes a red LED indicator for the open output and a green LED indicator for the closed output, with an onboard fuse for protection. With loss of command signal in the 1-5V or the 4-20ma input range, options are fail in place, fail open or fail close. All input and output signals are easily field configurable with jumper plugs. The log rate feature can be turned off by a jumper. Set points are easily calibrated with zero and span pots.

Digital Servo Card
The digital high resolution controller is a high performance digital positioner intended to control AC actuators. The digital controller provides 450 points of resolution, the highest resolution on the market today. The simple three button control is used to configure all parameters and allows the open and closed positions to be easily set for direct or reverse acting without rewiring. The buttons allow for simple set up of all command types and default positions on loss of signal. The controller comes standard with a stall detection feature that acts like an electronic torque switch. The electronic brake feature provides highly accurate braking to the motor. The duty cycle control feature acts as a governor to protect the actuator from untuned control loops.

Feedback Transmitter
The compact transmitter achieves long distance transmission of either a 0-10 VDC or 4-20 ma fixed output signal. The modular design allows for easy field mounting inside the Electra actuator compartment.

Two Wire Control
Relays provide a means of opening and closing a valve with a variety of standard AC or DC maintained control signals. The relays can be used in a fail open or fail closed application upon loss of the control signal. The spring loaded relay is continuously energized and maintains the open signal to the actuator. When the signal is removed, the coil releases, causing the actuator to close.
Model 700 Construction

Performance
Sample model number: 700-01 (115 VAC Electric, Output Torque of 1416 IN-LB)

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<th>Torque (In-Lb)</th>
<th>Model / Amp Draw</th>
<th>Single Phase</th>
<th>Number of Actuator</th>
<th>Speed of Actuator 60Hz</th>
<th>Number of Handwheel Turns 90°</th>
<th>Duty Cycle 30 min. Thermal Protection</th>
<th>Weight lbs.</th>
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<td>90</td>
<td>149</td>
<td>39</td>
<td>70%</td>
</tr>
</tbody>
</table>

Specification

- Enclosure: Weather proof enclosure rated NEMA 4, 4X and 6 (IP67)
- Power supply (700): 115 VAC, single phase 50/60 Hz ±10%
- Power supply (705): 220 VAC, single phase 50/60 Hz ±10%
- Power supply (710): 24 VAC, single phase 50/60 Hz ±10%
- Power supply (715): 24 VDC, single phase 50/60 Hz ±10%
- Approval (700): ETL Third Party Approval File # 3102145 / CE
- Motor: Squirrel caged induction motor
- Motor (710/715): Advanced brushless extended duty DC motor
- Limit switches: 2 SPDT open and closed, 250 VAC 10 Amp rating
- Auxiliary limit switches: 2 SPDT open and closed, 250 VAC 10 Amp rating
- Torque switches: Open / close, SPDT, 250 VAC 10 Amp rating (Except for 00)
- Thermal overload protection: Open 302°F ±40°F / close 206°F ±59°F
- Rotation: 90° ±10° (0° - 110°)
- Indicator: Continuous position indicator
- Manual override: Declutching mechanism with handwheel
- Self locking gears: Provided by double reduction worm gearing
- Mechanical stop: (2) external adjustable hex head bolts
- Space heater: 5-7 Watt for anti-condensation
- Conduit entries: (2) 3/4" NPT tapped entrances
- Lubrication: Grease moly (EP type)
- Terminal strip: Spring loaded push lever type
- Operating temperature: -4°F to +158°F (on/off) -4°F to + 140°F (modulating)
- Humidity: 90% RH maximum non-condensing
- Anti vibration: X Y Z 10g, 0.2-34 Hz, 30 minute
- External coating: Anodized treated, and polyester powder coated
- Log rate control board (optional): For continuous modulating applications
- Digital control board (optional): High performance, high resolution modulating board
- Cycle timer module (optional): Extends cycle time to eliminate water hammer
- Feedback current (optional): 4-20 MA or 0-10 VDC position feedback
- Standard local control station (optional): Single phase on/off or modulating local control box
- Power Disconnect (optional): Power kill external box
### Model 700 Dimensions

#### Models: 700-00, 01, 02, 03, 06, 08, 12

| Model | Torque IN-LB | ISO 5211 | A | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | X | Y | Z |
| 700-00| 885          | F07      | M8 | 0.87| 3.46| 0.12| 1.46| 1.85| 6.30| 2.01| 4.02| 2.76| 7.56| 2.09| 1.57| 2.36| 4.92| 10.16| 6.77| 9.65 |
| 700-01| 1,416        | F07/F10  | M8/M10 | 0.98| 4.92| 0.12| 2.24| 2.99| 7.76| 2.56| 5.71| 3.31| 8.54| 2.64| 2.24| 3.07| 5.51| 13.31| 9.02| 11.18|
| 700-02| 2,124        | F07/F10  | M8/M10 | 0.98| 4.92| 0.12| 2.24| 2.99| 7.76| 2.56| 5.71| 3.31| 8.54| 2.64| 2.24| 3.07| 5.51| 13.31| 9.02| 11.18|
| 700-03| 3,098        | F10/F12  | M10/M12 | 1.57| 5.83| 0.12| 2.44| 3.07| 8.43| 2.56| 6.30| 3.31| 9.65| 2.68| 2.64| 3.54| 6.69| 14.06| 9.61| 12.32|
| 700-06| 5,311        | F10/F12  | M10/M12 | 1.57| 5.83| 0.12| 2.44| 3.07| 8.43| 2.56| 6.30| 3.31| 9.65| 2.68| 2.64| 3.54| 6.69| 14.06| 9.61| 12.32|
| 700-08| 7,081        | F12/F14  | M12/M16 | 1.89| 7.01| 0.12| 2.64| 3.46| 8.94| 2.56| 7.05| 4.13| 10.43| 2.87| 3.19| 4.33| 7.68| 14.96| 11.18| 13.31|
| 700-12| 10,621       | F12/F14  | M12/M16 | 1.89| 7.01| 0.12| 2.64| 3.46| 8.94| 2.56| 7.05| 4.13| 10.43| 2.87| 3.19| 4.33| 7.68| 14.96| 11.18| 13.31|
| 700-20| 17,702       | F16      | M20     | 2.95| 8.90| 0.20| 3.54| 4.06| 10.71| 2.56| 9.09| 5.67| 11.81| 12.60| 4.29| 5.31| 8.86| 17.32| 14.76| 20.91 |
| 700-30| 26,553       | F16      | M20     | 2.95| 8.90| 0.20| 3.54| 4.06| 10.71| 2.56| 9.09| 5.67| 11.81| 12.60| 4.29| 5.31| 8.86| 17.32| 14.76| 20.91 |
| 700-60| 53,106       | F25/F30  | M16/M20 | 4.72| 13.78| 0.20| 5.71| 4.06| 10.71| 2.56| 9.09| 7.32| 11.81| 14.49| - | 5.31| 8.86| 20.31| 16.42| 26.30|

**Notes:**
1. The “D” dimension is the maximum allowable bore that can be machined into the insert.
2. The machining is done by others, as the standard insert is blank.
3. 700 = 120 VAC
Model 705 / 710 / 715 Dimensions

Models: 705, 710, 715

Notes:
1. The "D" dimension is the maximum allowable bore that can be machined into the insert.
2. The machining is done by others, as the standard insert is blank.
3. 705 = 220 VAC / 710 = 24 VAC / 715 = 24 VDC

| Model | Torque IN-LB | ISO 5211 | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | X | Y | Z |
| 705-01 | 1,416 | F07/F10 | M8/M10 | 0.98 | 4.92 | 0.12 | 2.24 | 2.99 | 7.76 | 2.55 | 5.71 | 8.54 | 2.64 | 2.24 | 3.07 | 5.51 | 13.31 | 9.02 | 11.18 |
| 710-01 | 2.76/4.02 | 14/17 |
| 715-01 | |
| 705-02 | 2,124 | F07/F10 | M8/M10 | 0.98 | 4.92 | 0.12 | 2.24 | 2.99 | 7.76 | 2.55 | 5.71 | 8.54 | 2.64 | 2.24 | 3.07 | 5.51 | 13.31 | 9.02 | 11.18 |
| 710-02 | 2.76/4.02 | 14/17 |
| 715-02 | |
| 705-03 | 3,098 | F10/F12 | M10/M12 | 1.57 | 5.82 | 0.12 | 2.44 | 3.07 | 8.43 | 2.55 | 6.30 | 3.31 | 9.65 | 2.68 | 2.64 | 3.54 | 6.69 | 14.06 | 9.61 | 12.32 |
| 710-03 | 4.02/4.92 | 17/21 |
| 715-03 | |
| 705-06 | 5,311 | F10/F12 | M10/M12 | 1.57 | 5.82 | 0.12 | 2.44 | 3.07 | 8.43 | 2.55 | 6.30 | 3.31 | 9.65 | 2.68 | 2.64 | 3.54 | 6.69 | 14.06 | 9.61 | 12.32 |
| 710-06 | 4.02/4.92 | 17/21 |
| 715-06 | |
### A. Warranty
The seller warrants its product against defects in material or workmanship, under normal conditions of use, for a period of one year from the date of original shipment. The seller’s obligation under this warranty is limited to repair or replacement at seller’s option. Shipping charges are prepaid to factory and all goods must have a return authorization number.

### B. Storage
The actuator must be stored in a clean, dry, temperature controlled area. The unit shall be stored with the cover installed and with the conduit openings sealed. Storage must be off the floor, covered with an unsealed dust protector that will allow side and bottom ventilation. Care must be taken to guard the actuator from condensation in extreme temperature variations. If actuators sit for an extended period of time it is recommended that the heaters be hooked up.

### C. Moisture Warning
Electra actuators are rated NEMA 4. The only way moisture can enter the actuator is through the conduit entrance. Extra precaution should be used to stop moisture from entering the actuator. Seal tight fittings as well as drip legs and potting compounds should be installed to protect the actuator against condensation. If moisture migrates up the conduit entrance and damages components, the parts are not covered under warranty.

### Item Codes and Descriptions

#### Item Codes

<table>
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<td>1 610</td>
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<td>1 615</td>
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#### Enclosure

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<tr>
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<td>NEMA 4, 4x, 6 (IP67) Housing</td>
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#### Control

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<td>Open / Close Operation</td>
</tr>
<tr>
<td>E</td>
<td>Log Rate Board</td>
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<td>D</td>
<td>High Resolution Board</td>
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#### Accessories

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<td>Local/Remote Control Station</td>
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<tr>
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<td>Power Disconnect Station</td>
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<td>F</td>
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<td>K</td>
<td>1k pot feedback</td>
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<tr>
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<td>Cycle Timer</td>
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<td>Two wire relay</td>
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### Part Numbers

<table>
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<th>Accessories</th>
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Model 700 / 705 Electrical

### 120 VAC

**NOTES**
1. Field wiring is shown as reference and not supplied with the actuator.
2. Always verify specific actuator model to correct wiring diagram.
3. Rotation as viewed from above actuators.
4. Wiring as shown is full counterclockwise position (CCW).
5. Each actuator must be powered through its own individual switch or relay contacts, to prevent cross electrical bleed. Actuators could be damaged if paralleled, thus voiding the manufacturer’s warranty.
6. Seal tight water tight conduit connectors must be used to maintain NEMA 4 rating.
7. All grounds must be isolated from each other in the customer’s equipment.
8. Take care in selecting the correct gauge wire, based on actuator AMP draw and the run on the line.
9. The motors are rated 120 VAC or 220 VAC and are not dual voltage, check the electrical tag on the actuator before applying power.

### 120/220 VAC

**NOTES**
1. Field wiring is shown as reference and not supplied with the actuator.
2. Always verify specific actuator model to correct wiring diagram.
3. Rotation as viewed from above actuators.
4. Wiring as shown is full counterclockwise position (CCW).
5. Each actuator must be powered through its own individual switch or relay contacts, to prevent cross electrical bleed. Actuators could be damaged if paralleled, thus voiding the manufacturer’s warranty.
6. Seal tight water tight conduit connectors must be used to maintain NEMA 4 rating.
7. All grounds must be isolated from each other in the customer’s equipment.
8. Take care in selecting the correct gauge wire, based on actuator AMP draw and the run on the line.
9. The motors are rated 120 VAC or 220 VAC and are not dual voltage, check the electrical tag on the actuator before applying power.

### 120 / 220 VAC

**NOTES**
1. Field wiring is shown as reference and not supplied with the actuator.
2. Always verify specific actuator model to correct wiring diagram.
3. Rotation as viewed from above actuators.
4. Wiring as shown is full counterclockwise position (CCW).
5. Each actuator must be powered through its own individual switch or relay contacts, to prevent cross electrical bleed. Actuators could be damaged if paralleled, thus voiding the manufacturer’s warranty.
6. Seal tight water tight conduit connectors must be used to maintain NEMA 4 rating.
7. All grounds must be isolated from each other in the customer’s equipment.
8. Take care in selecting the correct gauge wire, based on actuator AMP draw and the run on the line.
9. The motors are rated 120 VAC or 220 VAC and are not dual voltage, check the electrical tag on the actuator before applying power.

### Auxiliary Switch Detail

**NOTES**
1. Field wiring is shown as reference and not supplied with the actuator.
2. Always verify specific actuator model to correct wiring diagram.
3. Rotation as viewed from above actuators.
4. Wiring as shown is full counterclockwise position (CCW).
5. Each actuator must be powered through its own individual switch or relay contacts, to prevent cross electrical bleed. Actuators could be damaged if paralleled, thus voiding the manufacturer’s warranty.
6. Seal tight water tight conduit connectors must be used to maintain NEMA 4 rating.
7. All grounds must be isolated from each other in the customer’s equipment.
8. Take care in selecting the correct gauge wire, based on actuator AMP draw and the run on the line.
9. The motors are rated 120 VAC or 220 VAC and are not dual voltage, check the electrical tag on the actuator before applying power.
Model 710 Electrical

24 VAC

Customer
Incoming
Power / Signal

<table>
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</thead>
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</tbody>
</table>

24 VAC (Steady)

Actuator Healer

Electra Terminal Strip

SWITCH LOCATIONS

NOTES
1. Field Wiring is shown as reference and not supplied with the actuator.
2. Always verify specific actuator model to correct wiring diagram.
3. Rotation as viewed from above actuator.
4. Wiring as shown in full counterclockwise position. (CCW)
5. Each actuator must be powered through its own individual switch or relay contacts, to prevent cross electrical bleed. Actuators could be damaged if parallel wired, thus voiding the manufacturer’s warranty.
6. Sealed tight water tight conduit connectors must be used to maintain NEMA 4 rating.
7. All grounds must be isolated from each other in the customer’s equipment.
8. Take care in selecting the correct gauge wire, based on actuator AMP draw and the run on the line.
9. Voltage Converter use 8 Amp quick blow ceramic fuse P/N 314008P.
10. Modulating PCB use 6.3 Amp slow blow ceramic fuse P/N 314036P.

On/Off

DRAWING NO.
EA-710-OA

24 VAC

Customer
Incoming
Power / Signal

<table>
<thead>
<tr>
<th>J2</th>
<th>J1</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

Wiring diagram for Log Rate Servo Board

Auxiliary Switch Detail

NOTES
1. Field Wiring is shown as reference and not supplied with the actuator.
2. Always verify specific actuator model to correct wiring diagram.
3. Rotation as viewed from above actuator.
4. Wiring as shown in full counterclockwise position. (CCW)
5. Each actuator must be powered through its own individual switch or relay contacts, to prevent cross electrical bleed. Actuators could be damaged if parallel wired, thus voiding the manufacturer’s warranty.
6. Sealed tight water tight conduit connectors must be used to maintain NEMA 4 rating.
7. All grounds must be isolated from each other in the customer’s equipment.
8. Take care in selecting the correct gauge wire, based on actuator AMP draw and the run on the line.
9. Voltage Converter use 8 Amp quick blow ceramic fuse P/N 314008P.
10. Modulating PCB use 6.3 Amp slow blow ceramic fuse.

Modulating

DRAWING NO.
EA-710-MA

4575 Damascus Rd, Memphis, TN 38118
www.valveetek.com
Model 715 Electrical

SWITCH LOCATIONS

NOTES
1. Field Wiring is shown as reference and not supplied with the actuator.
2. Always verify specific actuator model to correct wiring diagram.
3. Rotation as viewed from above actuator.
4. Wiring as shown in full counterclockwise position (CCW)
5. Each actuator must be powered through its own individual switch or relay contacts, to prevent cross electrical bleed. Actuators could be damaged if parallel wired, thus voiding the manufacturers warranty.
6. Seal tight water tight conduit connectors must be used to maintain NEMA 4 rating.
7. All grounds must be isolated from each other in the customers equipment.
8. Take care in selecting the correct gauge wire, based on actuator AMP draw and the run on the line.
9. Modulating PCB use 6.3 Amp slow blow fuse.

On/Off
DRAWING NO.
EA-715-OA

Wiring diagram for Log Rate Servo Board

Modulating
DRAWING NO.
EA-715-MA