ELECTRIC ACTUATOR CATALOG

TORQUES THROUGH 5,300 IN/LBS
120VAC, 220V, 24VAC, 12VDC AND 24VDC VOLTAGES
ON-OFF, MODULATING OR JOG SERVICE

ANYTHING’S POSSIBLE… JUST ASK!
WWW.BITORQ.COM
**BI-100-E**

### 115VAC Actuator Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>BI-100-E Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Torque</td>
<td>100 inch pounds</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>2.5 sec/90°</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>75%</td>
</tr>
<tr>
<td>Standard Motor</td>
<td>115VAC/60Hz/1ph</td>
</tr>
<tr>
<td>Standard Enclosure</td>
<td>NEMA 4</td>
</tr>
<tr>
<td>Enclosure Material</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Enclosure Coating</td>
<td>Thermal bonding polyester powder</td>
</tr>
<tr>
<td>Temperature Rating**</td>
<td>-40°F to +150°F</td>
</tr>
<tr>
<td>Thermal Overload Protection</td>
<td>Standard  (omit on NEMA 7)</td>
</tr>
<tr>
<td>Manual Override</td>
<td>Standard</td>
</tr>
<tr>
<td>Lock Rotor Current</td>
<td>0.55 amps</td>
</tr>
<tr>
<td>Switches</td>
<td>15A, 1/2 HP 125</td>
</tr>
<tr>
<td>Weight</td>
<td>5 pounds</td>
</tr>
</tbody>
</table>

**<br>**

**heater required below 0°F**

**BI-200 AND 300-E**

### 115VAC Actuator Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>BI-200 AND 300-E Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Torque</td>
<td>200 or 300 inch pounds</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>5 sec/90°</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>25%</td>
</tr>
<tr>
<td>Standard Motor</td>
<td>115VAC/60Hz/1ph</td>
</tr>
<tr>
<td>Standard Enclosure</td>
<td>NEMA 4</td>
</tr>
<tr>
<td>Enclosure Material</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Enclosure Coating</td>
<td>Thermal bonding polyester powder</td>
</tr>
<tr>
<td>Temperature Rating**</td>
<td>-40°F to +150°F</td>
</tr>
<tr>
<td>Thermal Overload Protection</td>
<td>Standard  (omit on NEMA 7)</td>
</tr>
<tr>
<td>Manual Override</td>
<td>Standard</td>
</tr>
<tr>
<td>Lock Rotor Current</td>
<td>0.75 amps</td>
</tr>
<tr>
<td>Switches</td>
<td>15A, 1/2 HP 125</td>
</tr>
<tr>
<td>Weight</td>
<td>7 pounds</td>
</tr>
</tbody>
</table>

**<br>**

**<br>**

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www.bitorq.com
**BI- 400-E THRU 1500-E**

#### 115VAC ACTUATOR SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>BI-400...400 inch pounds</th>
<th>BI-675...675 inch pounds</th>
<th>BI-1000...1000 inch pounds</th>
<th>BI-1500...1500 inch pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Torque</td>
<td>BI-400...400 inch pounds</td>
<td>BI-675...675 inch pounds</td>
<td>BI-1000...1000 inch pounds</td>
<td>BI-1500...1500 inch pounds</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>BI-400...10 sec/90°</td>
<td>BI-675...15 sec/90°</td>
<td>BI-1000...30 sec/90°</td>
<td></td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>25%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Motor</td>
<td>115VAC/60Hz/1ph</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Enclosure</td>
<td>NEMA 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure Material</td>
<td>Aluminum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure Coating</td>
<td>Thermal bonding polyester powder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature Rating**</td>
<td>-40° F to +150° F</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal Overload Protection</td>
<td>Standard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual Override</td>
<td>Standard declutchable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lock Rotor Current</td>
<td>BI-400/675...0.75 amps</td>
<td>BI-1000/1500...1.1 amps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switches</td>
<td>15A, 1/2 HP 125</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>13 pounds</td>
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**heater required below 0°F**

#### BI-2000-E AND 3800-E

#### 115VAC ACTUATOR SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>BI-2000...2000 inch pounds</th>
<th>BI-3800...3800 inch pounds</th>
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<tbody>
<tr>
<td>Output Torque</td>
<td>BI-2000...2000 inch pounds</td>
<td>BI-3800...3800 inch pounds</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>BI-2000...12 sec/90°</td>
<td>BI-3800...14 sec/90°</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Standard Motor</td>
<td>115VAC/60Hz/1ph</td>
<td></td>
</tr>
<tr>
<td>Standard Enclosure</td>
<td>NEMA 4</td>
<td></td>
</tr>
<tr>
<td>Enclosure Material</td>
<td>Aluminum</td>
<td></td>
</tr>
<tr>
<td>Enclosure Coating</td>
<td>Thermal bonding polyester powder</td>
<td></td>
</tr>
<tr>
<td>Temperature Rating**</td>
<td>-40° F to +150° F</td>
<td></td>
</tr>
<tr>
<td>Thermal Overload Protection</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Manual Override</td>
<td>Standard Declutchable</td>
<td></td>
</tr>
<tr>
<td>Lock Rotor Current</td>
<td>BI-2000...2.6 amps</td>
<td>BI-3800...2.9 amps</td>
</tr>
<tr>
<td>Switches</td>
<td>15A, 1/2 HP 125</td>
<td>250VAC/0.5A/125VDC</td>
</tr>
<tr>
<td>Weight</td>
<td>30 pounds</td>
<td></td>
</tr>
</tbody>
</table>

**heater required below 0°F**

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**www.bitorq.com**
**BI-200 AND 300 NEMA 7**

### SPECIFICATIONS FOR 115VAC ACTUATOR

<table>
<thead>
<tr>
<th>Specification</th>
<th>BI-200...200 inch pounds</th>
<th>BI-300...300 inch pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Torque</td>
<td>BI-200...200 inch pounds</td>
<td>BI-300...300 inch pounds</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>BI-200...5 sec/90°</td>
<td>BI-300...5 sec/90°</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Standard Motor</td>
<td>115VAC/60Hz/1ph</td>
<td></td>
</tr>
<tr>
<td>Standard Enclosure</td>
<td>NEMA 7</td>
<td></td>
</tr>
<tr>
<td>Enclosure Material</td>
<td>Aluminum</td>
<td></td>
</tr>
<tr>
<td>Enclosure Coating</td>
<td>Thermal bonding polyester powder</td>
<td></td>
</tr>
<tr>
<td>Temperature Rating**</td>
<td>-40°F to +150°F</td>
<td></td>
</tr>
<tr>
<td>Thermal Overload</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Manual Override</td>
<td>Optional</td>
<td></td>
</tr>
<tr>
<td>Lock Rotor Current</td>
<td>BI-200...0.75 amps</td>
<td>BI-300...1.1 amps</td>
</tr>
<tr>
<td>Switches</td>
<td>15A, 1/2 HP 125</td>
<td>250VAC/0.5A/125VDC</td>
</tr>
<tr>
<td>Weight</td>
<td>9 pounds</td>
<td></td>
</tr>
</tbody>
</table>

**heater required below 0°F**

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**FAIL SAFE ELECTRIC ACTUATOR OPTIONS**

**SPRING RETURN ELECTRIC ACTUATORS**

BI-TORQ offers a variety of electric spring return actuator for fail safe applications requiring closure upon loss of power. On-off or modulating service is available in actuators with torque output to 2300 inch pounds. For more information, please consult or sales staff.

**BATTERY BACKUP SYSTEM**

The uninterruptible power system (UPS) as a stand alone unit allows operation of the actuator 2-4 times even after loss of power. The system can be used with any of the BI-TORQ electric actuator series and is ideal for critical applications. We also offer an internal battery version to go inside our BI series - available with NEMA 4 or 7 enclosures.
BI-TORQ's electric actuator series features durable construction for long-lasting performance. Our electric actuators are ideal for quarter-turn applications using ball, plug or butterfly valves. BI-TORQ also is pleased to offer a wide range of options for our electric actuators. Please consult our sales personnel for available combinations or additional options not listed below.

<table>
<thead>
<tr>
<th><strong>Standard Features</strong></th>
<th><strong>Optional Features</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heavy Duty Gears</strong></td>
<td><strong>Auxiliary Switches</strong></td>
</tr>
<tr>
<td>To withstand stall conditions, reducing potential down time due to gear failure</td>
<td>Dry contact switches for position indication or control of peripheral equipment.</td>
</tr>
<tr>
<td><strong>Permanent Lubrication</strong></td>
<td><strong>Electronic Positioner</strong></td>
</tr>
<tr>
<td>Reduces the need for maintenance</td>
<td>On-board positioner for precise control applications that use analog signals (4-20mA, 0-10VDC)</td>
</tr>
<tr>
<td><strong>NEMA 4 Enclosures</strong></td>
<td><strong>Feedback Potentiometer</strong></td>
</tr>
<tr>
<td>The standard enclosure protects against splashing, seepage, hose-downs and external applications. Powder coating and stainless steel fasteners provide maximum corrosion protection</td>
<td>Resistive position feedback for control applications</td>
</tr>
<tr>
<td><strong>Limit Switches</strong></td>
<td><strong>Heater and Thermostat</strong></td>
</tr>
<tr>
<td>SPDT limit switches allow for independent fine tuning of the open and closed positions. Quick adjust cams permit easy adjustments in the field.</td>
<td>For prevention of moisture in low temperature or high humidity environments</td>
</tr>
<tr>
<td><strong>Universal Mounting</strong></td>
<td><strong>Feedback Transmitter</strong></td>
</tr>
<tr>
<td>Actuators can be mounted and operated in any position. ISO 5211 mounting and a double star output are available on most models.</td>
<td>For 4-20mA position feedback</td>
</tr>
<tr>
<td><strong>Reversing Motors</strong></td>
<td><strong>Power Brakes</strong></td>
</tr>
<tr>
<td>Actuators can be used on a wide range of applications and valve types</td>
<td>For butterfly valve automation or modulating service applications requiring secure holding power</td>
</tr>
<tr>
<td><strong>Thermal Overload Protection</strong></td>
<td><strong>Speed Controls and Timers</strong></td>
</tr>
<tr>
<td>To protect the motor in stall conditions</td>
<td>For applications requiring slower cycle times or to repeat cycle applications at specific times</td>
</tr>
<tr>
<td><strong>Terminal Strip</strong></td>
<td><strong>Torque Sensor</strong></td>
</tr>
<tr>
<td>Allows for quick and easy field installation</td>
<td>To shut the actuator off in stall conditions</td>
</tr>
<tr>
<td><strong>Enclosures</strong></td>
<td></td>
</tr>
<tr>
<td>NEMA 4X and NEMA 7 available</td>
<td></td>
</tr>
</tbody>
</table>

WIRING DIAGRAMS AVAILABLE AT WWW.BITORQ.COM/ELECTRIC_ACTUATOR.HTML
BI-TORQ® offers the high quality Peaktronics on-board controller used for proportional positioning of split phase AC motors. An external command signal of 0-10VDC, 1-5VDC or 4-20mA can be used to compare a feedback signal from a potentiometer. This can make any of BI-TORQ®’s electric actuators into the ideal unit for applications requiring precise control, including:

- **filling applications**
- **mixing operations**
- **HVAC control**
- **batch processing**
- **cooling towers**
- **and much more**

**Features**

- on-board red and green LED indicators for on-off signals
- easy wiring to removable terminal strips
- deadband and non-interactive zero and span for easy field calibration
- multiple units can be easily connected in parallel to a common command signal
- built-in 24VDC utility power supply for 4-20mA input or output signal, or feedback potentiometer
- no external motor resistors are required

**Specifications**

**Power Requirements**

- 117VAC +/-10%, 50/60hZ

**Command Signal Input**

- 0-10VDC, 1-5VDC or 4-20mA

**Environmental Conditions**

- Operating temperature range: 0° to 60° C
- Storage temperature range: -40° to 85° C
- Relative humidity range: 0-90% (non-condensing)

**Control Adjustments**

- Zero Adjustment: adjustable throughout feedback signal range
- Span Adjustment: adjustable throughout command signal range
- Deadband: adjustable from 0.12% to 2.4% of span

The modulating service option includes an upgrade to 75% duty cycle motor. Power brakes are available for modulating service with butterfly valves.
# Electric Actuators

## Performance Ratings for BI-TORQ® Electric Actuators

### BI-100 Series

<table>
<thead>
<tr>
<th>Voltage</th>
<th>115VAC</th>
<th>24VDC</th>
<th>24VAC</th>
<th>12VDC</th>
<th>220VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>BI-100-A-4</td>
<td>BI-100-B-4</td>
<td>BI-100-C-4</td>
<td>BI-100-F-4</td>
<td>BI-100-H-4</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>2.5 SECONDS</td>
<td>3 SECONDS</td>
<td>3 SECONDS</td>
<td>3 SECONDS</td>
<td>2.5 SECONDS</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
</tr>
<tr>
<td>Amp Draw</td>
<td>0.55</td>
<td>2.44/0.4</td>
<td>2.44/0.4</td>
<td>2.89/0.6</td>
<td>0.38</td>
</tr>
</tbody>
</table>

### BI-200 and 300 Series

<table>
<thead>
<tr>
<th>Voltage</th>
<th>115VAC</th>
<th>24VDC</th>
<th>24VAC</th>
<th>12VDC</th>
<th>220VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>BI-***-A-4</td>
<td>BI-***-B-4</td>
<td>BI-***-C-4</td>
<td>BI-***-F-4</td>
<td>BI-***-H-4</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>5 SECONDS</td>
<td>9 SECONDS</td>
<td>9 SECONDS</td>
<td>9 SECONDS</td>
<td>5 SECONDS</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>25%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>Amp Draw</td>
<td>0.75</td>
<td>3.2/0.8</td>
<td>3.2/0.8</td>
<td>4.0/1.4</td>
<td>0.38</td>
</tr>
</tbody>
</table>

### BI-400 Series

<table>
<thead>
<tr>
<th>Voltage</th>
<th>115VAC</th>
<th>24VDC</th>
<th>24VAC</th>
<th>12VDC</th>
<th>220VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>BI-400-A-4</td>
<td>BI-400-B-4</td>
<td>BI-400-C-4</td>
<td>BI-400-F-4</td>
<td>BI-400-H-4</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>10 SECONDS</td>
<td>20 SECONDS</td>
<td>20 SECONDS</td>
<td>20 SECONDS</td>
<td>10 SECONDS</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>25%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>Amp Draw</td>
<td>0.75</td>
<td>3.2/0.8</td>
<td>3.2/0.8</td>
<td>4.0/1.4</td>
<td>0.38</td>
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### BI-675 and 1000 Series

<table>
<thead>
<tr>
<th>Voltage</th>
<th>115VAC</th>
<th>24VDC</th>
<th>24VAC</th>
<th>12VDC</th>
<th>220VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>BI-***-A-4</td>
<td>BI-***-B-4</td>
<td>BI-***-C-4</td>
<td>BI-***-F-4</td>
<td>BI-***-H-4</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>15 SECONDS</td>
<td>30 SECONDS</td>
<td>30 SECONDS</td>
<td>30 SECONDS</td>
<td>15 SECONDS</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>25%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>Amp Draw</td>
<td>1.10</td>
<td>3.2/0.8</td>
<td>3.2/0.8</td>
<td>4.0/1.4</td>
<td>0.38</td>
</tr>
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</table>

### BI-1500 Series

<table>
<thead>
<tr>
<th>Voltage</th>
<th>115VAC</th>
<th>24VDC</th>
<th>24VAC</th>
<th>12VDC</th>
<th>220VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>BI-1500-A-4</td>
<td>BI-1500-B-4</td>
<td>BI-1500-C-4</td>
<td>BI-1500-F-4</td>
<td>BI-1500-H-4</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>30 SECONDS</td>
<td>60 SECONDS</td>
<td>60 SECONDS</td>
<td>60 SECONDS</td>
<td>30 SECONDS</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>25%</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>25%</td>
</tr>
<tr>
<td>Amp Draw</td>
<td>1.10</td>
<td>3.2/0.8</td>
<td>3.2/0.8</td>
<td>4.0/1.4</td>
<td>0.38</td>
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### BI-2000 Series

<table>
<thead>
<tr>
<th>Voltage</th>
<th>115VAC</th>
<th>24VDC</th>
<th>24VAC</th>
<th>12VDC</th>
<th>220VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle Time</td>
<td>12 SECONDS</td>
<td>12 SECONDS</td>
<td>12 SECONDS</td>
<td>12 SECONDS</td>
<td>12 SECONDS</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Amp Draw</td>
<td>2.60/0.98</td>
<td>14/20</td>
<td>14/20</td>
<td>14</td>
<td>2.80/1.30</td>
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### BI-3800 Series

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<th>Voltage</th>
<th>115VAC</th>
<th>24VDC</th>
<th>24VAC</th>
<th>12VDC</th>
<th>220VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>BI-3800-A-4</td>
<td>BI-3800-B-4</td>
<td>BI-3800-C-4</td>
<td>BI-3800-F-4</td>
<td>BI-3800-H-4</td>
</tr>
<tr>
<td>Cycle Time</td>
<td>14 SECONDS</td>
<td>14 SECONDS</td>
<td>14 SECONDS</td>
<td>14 SECONDS</td>
<td>14 SECONDS</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Amp Draw</td>
<td>2.90/1.12</td>
<td>14/20</td>
<td>14/20</td>
<td>14</td>
<td>2.80/1.30</td>
</tr>
</tbody>
</table>

*Extended duty cycle motors available on most models with AC motors (doubles cycle time)*
OTHER QUALITY VALVE AUTOMATION PRODUCTS...

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