

# SERIES EBV • Electrically Actuated Ball Valves



Lightweight and rugged, this all-thermoplastic enclosure is designed to meet NEMA 4 standards

### Features:

- Direct manual override with visual position indication.
- Position and motor running lights.
- Thermally protected motor withstands stall torque.
- Pre-powered limit switch connection.
- Easy field attachment to ball valve.
- CSA approved (120 volt models).

*Each actuator is 100% individually inspected and tested prior to shipment.*

### Installation and Actuation Signal:

Series EBV mounts easily to the mounting lugs on the True Blue ball valve body, using supplied hardware. Wiring diagrams are included; all wiring should conform to local codes. Motor must receive a continuous signal for a minimum of 8 seconds. For applications where a momentary signal or one of less than 8 seconds is supplied, a time delay relay can be used; consult factory.

### Duty Cycle and Thermal Overload:

Duty cycle is defined as the percentage of motor on time to the motor off plus motor on time. The EBV-65 has a duty cycle of 50% with a motor run time of 6 seconds at 60 Hz AC; required off time is 6 seconds. The EBV-104 has a duty cycle of 20% with a motor run time of 5 seconds at 60 Hz AC; required off time is 20 seconds. For voltages at 50 Hz, motor run time is 7 seconds. These duty cycles are at an ambient temperature of 70°F (21°C). A special gear motor can be supplied if a greater duty cycle is required. Increases in temperature will result in a reduced duty cycle.

If duty cycles are exceeded, temperature will rise in the housing and the thermal overload protection will open the electrical circuit when the coil temperature reaches 220°F (105°C). It will automatically close when the temperature drops to an acceptable level. The maximum recommended ambient temperature for Series EBV is 120°F (49°C), but duty cycle is diminished considerably at this temperature.

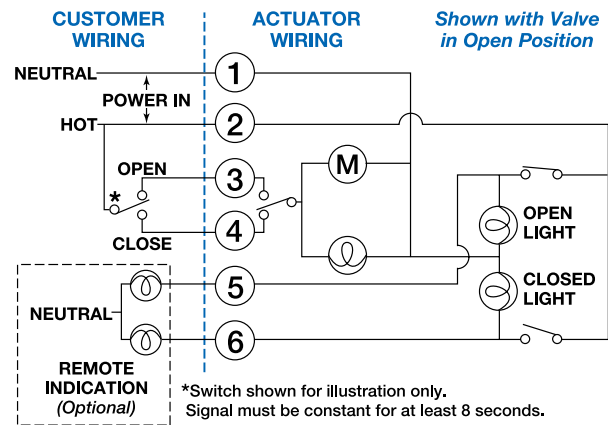
### Manual Override:

A manual override is directly linked via a one-way clutch to the valve shaft, allowing positive and rapid positioning of the valve. This eliminates slow manual actuation through actuator gearing, and if the gear train is jammed, the manual override will still function properly.

### Materials of Construction:

Actuator motor is totally contained within a glass-filled polyester housing designed to meet NEMA 4. Housing screws are stainless steel, seals are Buna-N, and override wheel bearings are Teflon®. For optional materials, please consult factory.

### Wiring Diagram:



| SPECIFICATIONS             |  |  |
|----------------------------|--|--|
| Type                       | EBV - 65                                     | EBV - 104                                      |
| Ball Valve Size            | 1/2", 3/4", & 1"                             | 1 1/2" & 2"                                    |
| Voltage AC                 | 24, 120, 220, 230, 240V – (50 or 60 Hz)      |  |
| Duty Cycle                 | 50% @ 70°F                                   | 20% @ 70°F                                     |
| Motor Run Time             | 6 seconds @ 60 Hz AC<br>7 seconds @ 50 Hz AC | 5 seconds @ 60 Hz AC<br>7 seconds @ 50 Hz AC   |
| Motor Off Time             | 6 seconds @ 60 Hz AC<br>7 seconds @ 50 Hz AC | 20 seconds @ 60 Hz AC<br>28 seconds @ 50 Hz AC |
| Continuous Signal Required | 8 seconds                                    |  |

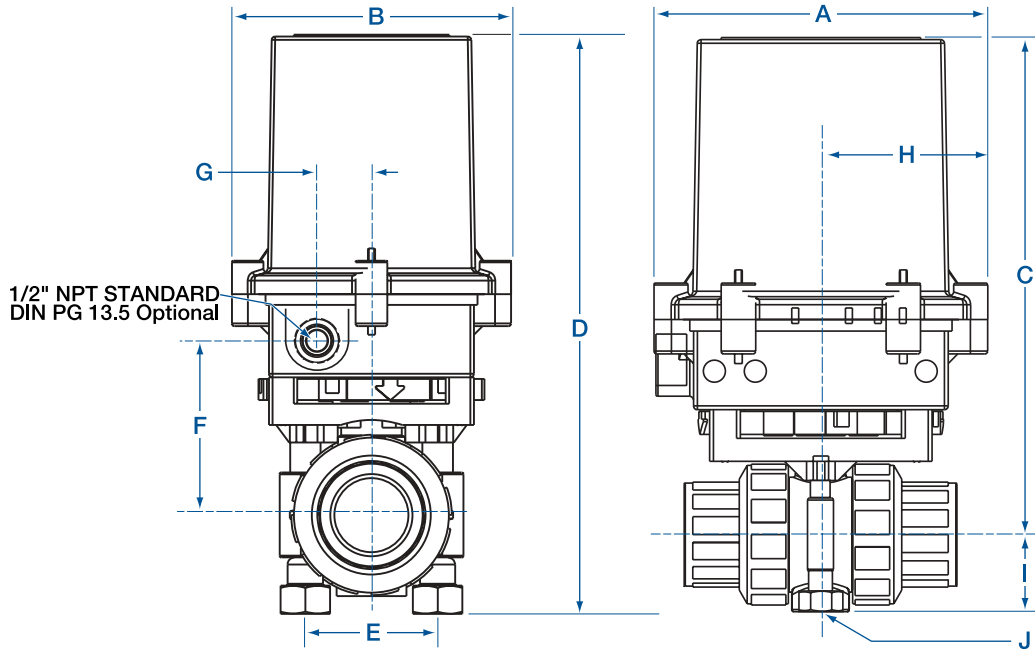
| MODEL NUMBERS, WEIGHTS & ELECTRICAL REQUIREMENTS |                           |        |      |             |      |
|--|---------------------------|--------|------|-------------|------|
| Model Number                                     | Valve Size                | Weight |      | Voltage AC* | Amps |
|  |                           | Lbs.   | Kg   |             |      |
| EBV-65<br>Actuator<br>Only                       | 1/2", 3/4",<br>and 1"     | 5      | 2.27 | 24          | 3.0  |
|  |                           |        |      | 120         | 0.6  |
|  |                           |        |      | 220         | 0.3  |
|  |                           |        |      | 240         | 0.3  |
| EBV-104<br>Actuator<br>Only                      | 1 1/4", 1 1/2",<br>and 2" | 7      | 3.16 | 24          | 10.0 |
|  |                           |        |      | 120         | 2.0  |
|  |                           |        |      | 220         | 1.1  |
|  |                           |        |      | 240         | 1.0  |

\* AC Voltage and cycles (50 or 60 Hz) must be specified with order. Consult factory for DC applications.

| Approximate Flow Rates at 1.0 PSI (0,07 Bar) Pressure Drop |     |     |    |       |       |     |
|--|-----|-----|----|-------|-------|-----|
| Valve Sizes  | 1/2 | 3/4 | 1  | 1 1/4 | 1 1/2 | 2   |
| Cv Factor  | 10  | 20  | 40 | 80    | 100   | 120 |



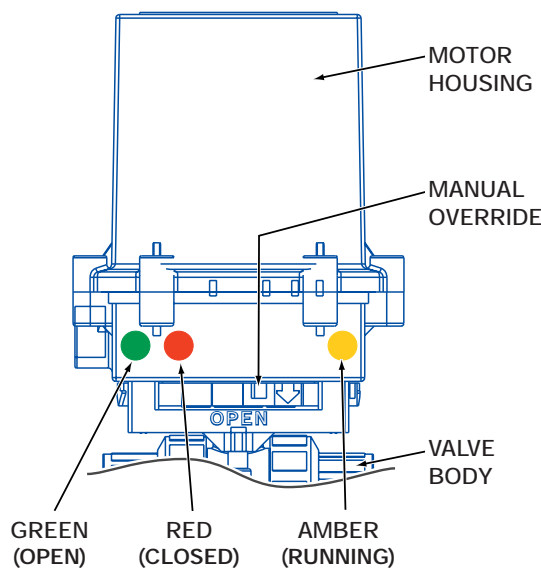
CSA ENCL. 3  
ENCL. 5



| J Threaded Size  | Max. Thread Depth |
|------------------|-------------------|
| EBV-65 1/4 - 20  | .44 in. 11.2 mm   |
| EBV-104 3/8 - 16 | .56 in. 14.2 mm   |

| VALVE & ACTUATOR ASSEMBLY - MODEL NUMBERS & DIMENSIONS |                                |      |       |      |       |      |       |       |       |      |      |      |       |      |      |      |      |     |      |
|--|--------------------------------|------|-------|------|-------|------|-------|-------|-------|------|------|------|-------|------|------|------|------|-----|------|
| Pipe Size  | Actuator* with Valve Model No. | A    |       | B    |       | C    |       | D     |       | E    |      | F    |       | G    |      | H    |      | I   |      |
|  |                                | IN   | MM    | IN   | MM    | IN   | MM    | IN    | MM    | IN   | MM   | IN   | MM    | IN   | MM   | IN   | MM   | IN  | MM   |
| 1/2"   | EBV-050 -                      | 5.44 | 138.2 | 4.94 | 125.5 | 7.81 | 198.8 | 9.31  | 236.5 | 1.75 | 44.4 | 2.62 | 66.7  | 0.94 | 23.8 | 2.72 | 69.1 | 1.2 | 32.0 |
| 3/4"   | EBV-075 -                      | 5.44 | 138.2 | 4.94 | 125.5 | 8.19 | 208.0 | 10.12 | 257.2 | 2.34 | 59.4 | 3.00 | 76.2  | 0.94 | 23.8 | 2.72 | 69.1 | 1.5 | 38.0 |
| 1"   | EBV-100 -                      | 5.44 | 138.2 | 4.94 | 125.5 | 8.37 | 212.7 | 10.12 | 257.2 | 2.34 | 59.4 | 3.25 | 82.5  | 0.94 | 23.8 | 2.72 | 69.1 | 1.9 | 48.0 |
| 1 1/4"   | EBV-125 -                      | 7.47 | 189.7 | 5.63 | 143.0 | 9.44 | 239.7 | 11.50 | 292.1 | 3.37 | 85.7 | 4.25 | 107.9 | 1.19 | 30.2 | 3.74 | 94.9 | 2.5 | 63.5 |
| 1 1/2"   | EBV-150 -                      | 7.47 | 189.7 | 5.63 | 143.0 | 9.44 | 239.7 | 11.50 | 292.1 | 3.37 | 85.7 | 4.25 | 107.9 | 1.19 | 30.2 | 3.74 | 94.9 | 2.5 | 63.5 |
| 2"   | EBV-200 -                      | 7.47 | 189.7 | 5.63 | 143.0 | 9.44 | 239.7 | 11.50 | 292.1 | 3.37 | 85.7 | 4.25 | 107.9 | 1.19 | 30.2 | 3.74 | 94.9 | 2.5 | 63.5 |

\* To complete the Model Numbers refer to the ordering chart below. Voltage must be specified with model number.



### Ordering Information

Order by part number and specify exact chemicals, temperatures and pressures. To arrive at the proper part number, please consult diagram below. The letters and numbers used in this part number are for example only!

|  |   |   |
|--|---|---|
| <p><b>EBV</b>      <b>075</b></p> <p><b>ELECTRIC BALL VALVE</b></p> <p><b>VALVE PIPE SIZE</b></p> <p>050 1/2" NPT &amp; BSP Thd. or Amer Socket<br/>         075 3/4" NPT &amp; BSP Thd. or Amer Socket<br/>         100 1" NPT &amp; BSP Thd. or Amer Socket<br/>         125 1 1/4" NPT &amp; BSP Thd. or Amer Socket<br/>         150 1 1/2" NPT &amp; BSP Thd. or Amer Socket<br/>         200 2" NPT &amp; BSP Thd. or Amer Socket<br/>         20 20 millimeters, sockets only<br/>         25 25 millimeters, sockets only<br/>         32 32 millimeters, sockets only<br/>         40 40 millimeters, sockets only<br/>         50 50 millimeters, sockets only<br/>         63 63 millimeters, sockets only</p> <p><b>VENTED BALL</b> —<br/>         Add "Z-EBV-VENT" for sodium hypochlorite.</p> | <p><b>X</b></p> <p><b>SEAL MATERIAL</b></p> <p>V Viton<br/>         EP Ethylene Propylene (EPDM)</p> <p><b>CONNECTIONS</b></p> <p>S Socket Ends<br/>         T Threaded Ends<br/>         F Flanges*</p> <p>*Flanges are not usually needed with true-union ball valves.</p> <p><b>SPECIAL DESIGNATION</b></p> <p>When "X" appears in this spot, it designates BSP threads or millimeter sockets.</p> | <p><b>T</b>      <b>-PV</b></p> <p><b>BODY MATERIAL</b></p> <p>-PV Polyvinyl Chloride (PVC)<br/>         -CP Chlorinated Polyvinyl Chloride (CPVC)<br/>         -PP Virgin Polypro<br/>         -PF Kynar® (PVDF)</p> |
|--|---|---|