

### Features

- Industrial quality miniature actuator
- Full Port Industrial grade 3-way PVC ball valve
- Visual valve position indicator
- Rugged aluminum Type 4X and IP67 weatherproof enclosure
- Heavy duty motor with overload protection
- Manual override
- Two auxiliary limit switches used to confirm valve position
- Energized PTFE ball seats for lower torque and longer life
- Union nut locking device prevents back-off
- Actuator approvals by CSA and CE
- Valve certified safe per NSF61 for potable/drinking water

### Applications

Electric actuated 3-way full port PVC ball valves are typically used as a diverter valve to control the flow of water and other media compatible with the materials of construction (not suitable for air or gas). Ideal for industrial applications and where NSF approved construction is required for potable drinking water. Actuator designed for 60% duty cycle.

### Operation

Electric actuated valve uses power-to-open (Pos. 2) and power-to-close (Pos.1), stays in the last known position with power failure. On receipt of a continuous voltage signal, the motor runs and via a rugged all metal gear drive rotates the ball 90°. The motor is automatically stopped by internal cams striking limit switches. On receipt of a reversing continuous signal, the motor turns in the opposite direction reversing the valve position. Electrical connection by prewired cable with flying leads (3 meter/9.8 feet)

### Construction

|  |  |
|--|--|
| <b>Valve Body</b>                      | PVC cell class 12454 per ASTM D1784 (dark gray)    |
| <b>Ball/Stem</b>                       | PVC cell class 12454 per ASTM D1784                |
| <b>Ball Seats</b>                      | PTFE (Teflon) energized with EPDM                  |
| <b>Stem Seals</b>                      | Dual EPDM seals                                    |
| <b>Gear Drive</b>                      | Rugged all metal flat and worm gears, self locking |
| <b>Actuator Enclosure</b>              | Anti-corrosive aluminum alloy, Rated Type 4X/ IP67 |
| <b>Visual Valve Position Indicator</b> | Yellow indicator with transparent clear cover      |
| <b>Fasteners</b>                       | Stainless Steel                                    |
| <b>Auxiliary Limit Switches</b>        | 2 x SPST (3A@125/250VAC,30VDC resistive load       |



### Description

Electrically operated Full Port 3-way T-type flow pattern ball valve has four PTFE ball seats allowing for full pressure at any port. Energized PTFE ball seats are used to extended cycle life, compensate for wear and lower the operating torque. Rugged Type 4X and IP67 corrosion resistant actuator includes a manual override, position confirm limit switches and overload protection.

### Approvals

#### Actuators

- Actuators certified by CSA and CE
  - CSA models certified to UL429, CSA C22.2 and UL50E Type 4X enclosure
  - CE models include ISO5211 mounting and IP67 enclosure

#### Valves

- NSF International certified to:
  - NSF/ANSI 61G & NSF372 Drinking Water
- ANSI B1.20.1, ASTM D1784



### Construction Features

Rugged aluminum corrosion resistant Type 4X/IP67 weatherproof enclosure

Heavy duty integral motor design significantly reduces physical size of actuator

Electrical connection by prewired cable (3 meter)

Leak free dual stem seal design with fully machined ball and stem connection

Four Energized PTFE ball seats for reduced torque and extended cycle life, allows for full pressure at any port

Auxiliary Limit Switches (2) for confirming valve position

Self-locking all metal gear drive, no additional brake required

Manual Override with protective cover

Union nut locking devices prevent back-off from vibration or thermal cycling

Full Port design for unrestricted flow and NSF certified for use with potable/ drinking water



Visual Valve Position Indicator

### Pressure-Temperature\*

**Valve Pressure Rating:** 232 PSI (16 Bar) at 73°F (23°C)

Vacuum 29inHg

**Valve Temperature Rating:** 32 to 140° F (0 to 60° C)

**Actuator Temperature Rating:** -13 to +131° F (-25 to 55° C)

\*See P/T chart

### Pressure/Temperature Charts

| P/T Chart (PSI/°F) |     |     |     |     |     |     |     |
|--------------------|-----|-----|-----|-----|-----|-----|-----|
| PSI                | 232 | 232 | 232 | 180 | 150 | 100 | 35  |
| °F                 | 32  | 50  | 70  | 90  | 110 | 120 | 140 |

| P/T Chart (Bar/°C) |    |    |    |    |    |    |     |
|--------------------|----|----|----|----|----|----|-----|
| Bar                | 16 | 16 | 16 | 12 | 10 | 7  | 2.4 |
| °C                 | 0  | 10 | 21 | 32 | 43 | 49 | 60  |

## Specifications: On-Off Valves (English units)

| Stock Number  | Pipe Size (NPT)** | Pipe O.D. (inch) | Cv Flow Factor | Pressure Max. (PSI)* | Cycle Time /90° (seconds) | Voltage       | Current (amps) | Agency Approvals | Electrical Drawing |
|---|-------------------|------------------|----------------|----------------------|---------------------------|---------------|----------------|------------------|--------------------|
| <b>110 VAC ELECTRIC ACTUATED 3-WAY PVC BALL VALVE PTFE/EPDM: T-PORT</b> |                   |                  |                |                      |                           |               |                |                  |                    |
| <b>566404</b>   | 1/2               | 0.84             | 4.6            | 232                  | 12                        | AC110 50/60Hz | 0.3            | CSA, CE          | B                  |
| <b>566406</b>   | 3/4               | 1.05             | 10             | 232                  | 12                        | AC110 50/60Hz | 0.3            | CSA, CE          | B                  |
| <b>566408</b>   | 1                 | 1.32             | 17             | 232                  | 12                        | AC110 50/60Hz | 0.3            | CSA, CE          | B                  |
| <b>24 VAC ELECTRIC ACTUATED 3-WAY PVC BALL VALVE PTFE/EPDM: T-PORT</b>  |                   |                  |                |                      |                           |               |                |                  |                    |
| <b>566415</b>   | 1/2               | 0.84             | 4.6            | 232                  | 12                        | AC24 50/60Hz  | 1.7            | CSA, CE          | B                  |
| <b>566416</b>   | 3/4               | 1.05             | 10             | 232                  | 12                        | AC24 50/60Hz  | 1.7            | CSA, CE          | B                  |
| <b>566417</b>   | 1                 | 1.32             | 17             | 232                  | 12                        | AC24 50/60Hz  | 1.7            | CSA, CE          | B                  |
| <b>24 VDC ELECTRIC ACTUATED 3-WAY PVC BALL VALVE PTFE/EPDM: T-PORT</b>  |                   |                  |                |                      |                           |               |                |                  |                    |
| <b>566446</b>   | 1/2               | 0.84             | 4.6            | 232                  | 11                        | DC24          | 0.7            | CSA, CE          | G                  |
| <b>566447</b>   | 3/4               | 1.05             | 10             | 232                  | 11                        | DC24          | 0.7            | CSA, CE          | G                  |
| <b>566449</b>   | 1                 | 1.32             | 17             | 232                  | 11                        | DC24          | 0.7            | CSA, CE          | G                  |

\* Maximum pressure at 73°F, pressure decreases as temperature increases (see P/T chart)

Cv is the GPM of water at 60°F that will pass through the valve with 1 PSI pressure drop

\*\* Valves include both IPS glue sockets and NPT end connectors

Voltage Tolerance: AC +/- 10%, DC +/- 5%, Duty Cycle: 60%

## Electric Actuated 3-Way T-port Valves

Valworx electric actuated 3-way T-Port valves use power-to-open (pos.2) and power-to-close (pos.1), stays in the last known position with loss of power. The actuator will rotate the output drive 90° to change the position of the ball valve. Limit switches automatically stop the motor/gear drive in either position 1 or position 2 as required.

Two auxiliary limit switches are provided as standard to confirm valve position.

Rugged gear drive system is made of all metal, self-locking, no motor brake required. A manual override is provided for use in setup or power failure situations.

A manual override is provided for use in setup or power failure situations. The override is operated with a standard hex wrench (included).

Robust aluminium alloy housing is corrosion-resistant and weatherproof. The enclosure is rated Type 4X and IP67. Heavy duty motor is integral to the actuator housing providing a small physical size to power ratio.

Electrical wiring is by prewired cable with flying leads (3 meters/ 9.8 feet).

## Specifications: On-Off Valves (Metric units)

| Stock Number  | Pipe Size (NPT)** | Pipe O.D. (mm) | Kv Flow Factor | Pressure Max. (Bar)* | Cycle Time /90° (seconds) | Voltage       | Current (amps) | Agency Approvals | Electrical Drawing |
|---|-------------------|----------------|----------------|----------------------|---------------------------|---------------|----------------|------------------|--------------------|
| <b>110 VAC ELECTRIC ACTUATED 3-WAY PVC BALL VALVE PTFE/EPDM: T-PORT</b> |                   |                |                |                      |                           |               |                |                  |                    |
| <b>566404</b>   | 1/2               | 21.34          | 4              | 16                   | 12                        | AC110 50/60Hz | 0.3            | CSA, CE          | B                  |
| <b>566406</b>   | 3/4               | 26.67          | 8.6            | 16                   | 12                        | AC110 50/60Hz | 0.3            | CSA, CE          | B                  |
| <b>566408</b>   | 1                 | 33.53          | 15             | 16                   | 12                        | AC110 50/60Hz | 0.3            | CSA, CE          | B                  |
| <b>24 VAC ELECTRIC ACTUATED 3-WAY PVC BALL VALVE PTFE/EPDM: T-PORT</b>  |                   |                |                |                      |                           |               |                |                  |                    |
| <b>566415</b>   | 1/2               | 21.34          | 4              | 16                   | 12                        | AC24 50/60Hz  | 1.7            | CSA, CE          | B                  |
| <b>566416</b>   | 3/4               | 26.67          | 8.6            | 16                   | 12                        | AC24 50/60Hz  | 1.7            | CSA, CE          | B                  |
| <b>566417</b>   | 1                 | 33.53          | 15             | 16                   | 12                        | AC24 50/60Hz  | 1.7            | CSA, CE          | B                  |
| <b>24 VDC ELECTRIC ACTUATED 3-WAY PVC BALL VALVE PTFE/EPDM: T-PORT</b>  |                   |                |                |                      |                           |               |                |                  |                    |
| <b>566446</b>   | 1/2               | 21.34          | 4              | 16                   | 11                        | DC24          | 0.7            | CSA, CE          | G                  |
| <b>566447</b>   | 3/4               | 26.67          | 8.6            | 16                   | 11                        | DC24          | 0.7            | CSA, CE          | G                  |
| <b>566449</b>   | 1                 | 33.53          | 15             | 16                   | 11                        | DC24          | 0.7            | CSA, CE          | G                  |

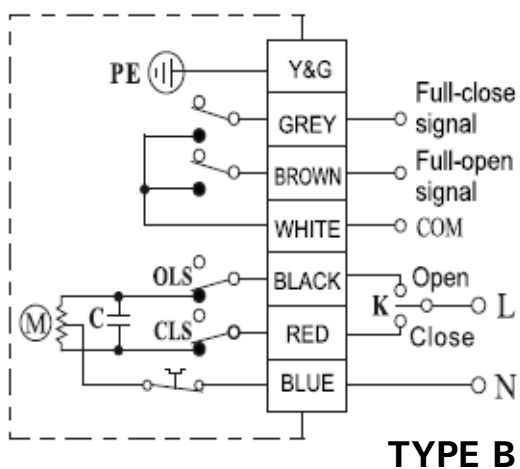
\* Maximum pressure at 23°C, pressure decreases as temperature increases (see P/T chart)

\*\* Valves include both inch size IPS glue sockets and NPT end connectors

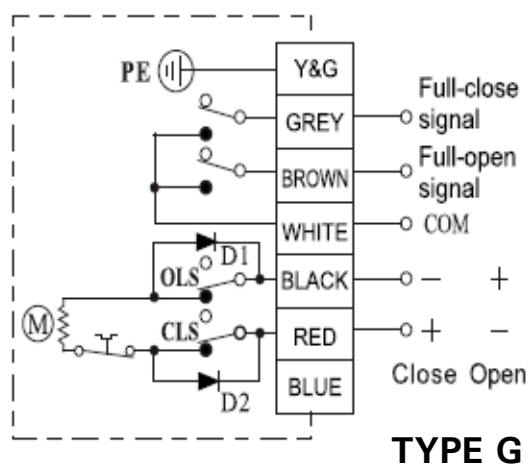
Voltage Tolerance: AC +/- 10%, DC +/- 5%, Duty Cycle: 60%

## Electrical Wiring Diagrams

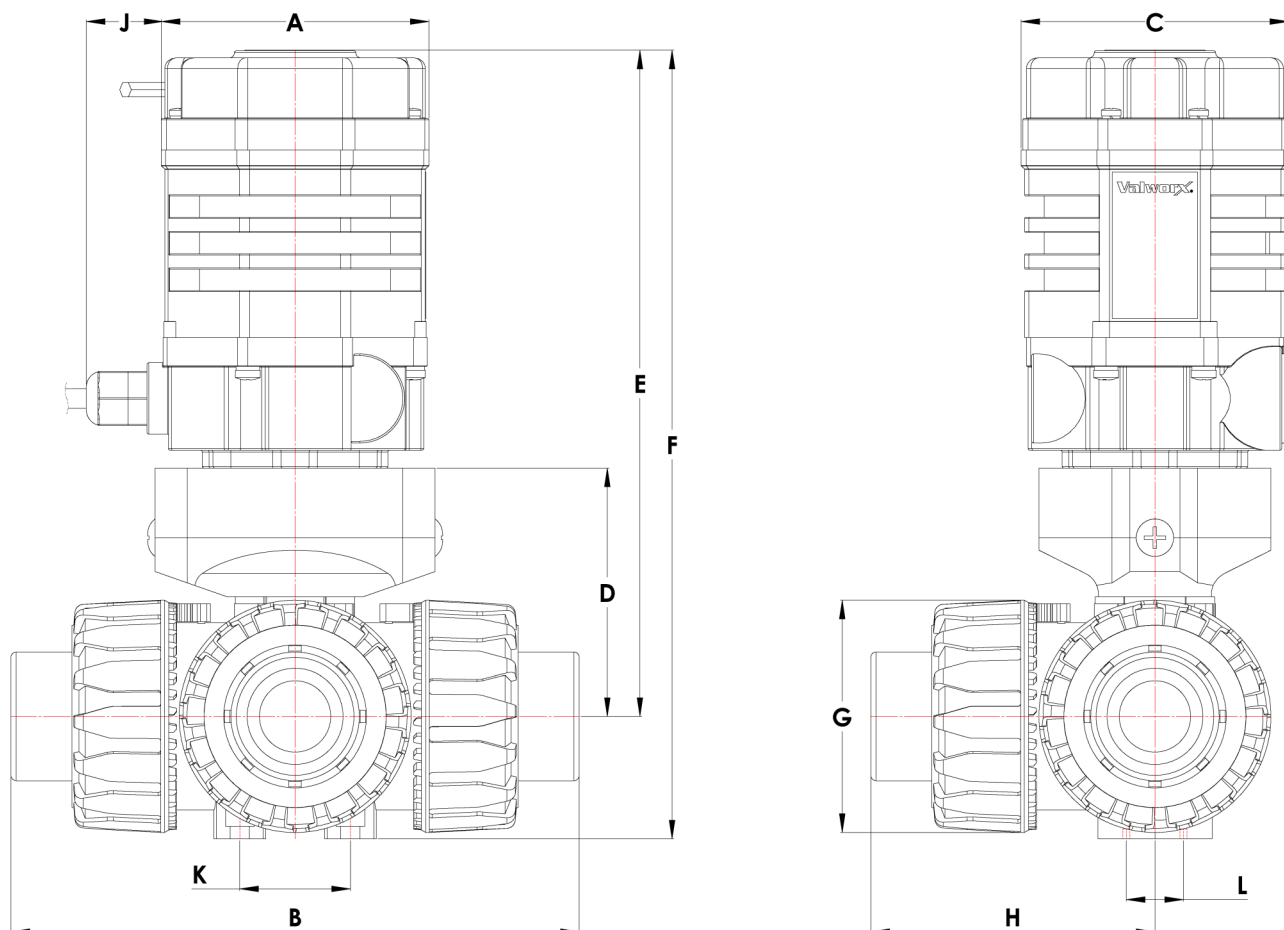
### AC Voltages



### DC Voltages



## Dimensions



| Pipe Size (NPT) |      | A    | B     | C    | D    | E     | F     | G    | H    | J    | K    | L    | Weight  |
|-----------------|------|------|-------|------|------|-------|-------|------|------|------|------|------|---------|
| 1/2"            | inch | 2.95 | 5.2   | 2.95 | 2.28 | 6.89  | 8.03  | 2.12 | 2.60 | 0.85 | 1.22 | 0.79 | 3.6 lb  |
|                 | mm   | 75   | 132.3 | 75   | 57.9 | 174.9 | 203.9 | 53.9 | 66   | 21.5 | 31   | 20   | 1.63 kg |
| 3/4"            | inch | 2.95 | 6.27  | 2.95 | 2.74 | 7.34  | 8.69  | 2.56 | 3.14 | 0.85 | 1.22 | 0.79 | 4.2 lb  |
|                 | mm   | 75   | 159.2 | 75   | 69.5 | 186.5 | 220.8 | 65   | 80   | 21.5 | 31   | 20   | 1.91 kg |
| 1"              | inch | 2.95 | 6.63  | 2.95 | 2.91 | 7.52  | 9.06  | 2.87 | 3.31 | 0.85 | 1.22 | 0.79 | 4.65 lb |
|                 | mm   | 75   | 168.4 | 75   | 74   | 191   | 230   | 73   | 84.2 | 21.5 | 31   | 20   | 2.11 kg |