

# Electrically Actuated 3-Way Ball Valve

## Type 125/128



### General

- **Size:** 3/8"–2"
- **Material:** PVC, CPVC
- **Seat:** PTFE
- **Seals:** EPDM, FPM
- **End Connection:** Solvent cement socket, threaded, flanged
- **Actuator Housing:** Glass-filled PP
- **Voltage:** 100-230VAC
- **Manual Override:** Integrated
- **Position Indicator:** Optical, integrated

### Key Valve Certifications

- **FDA CFR 21 177.2600:** EPDM and FPM
- **FDA CFR 21 177.1550:** PTFE

### Material Specification

PVC valves shall meet ASTM D1784 cell classification 12454 standards. CPVC valves shall meet ASTM D1784 cell classification 23447-B standards. Valves of all materials shall be RoHS compliant.

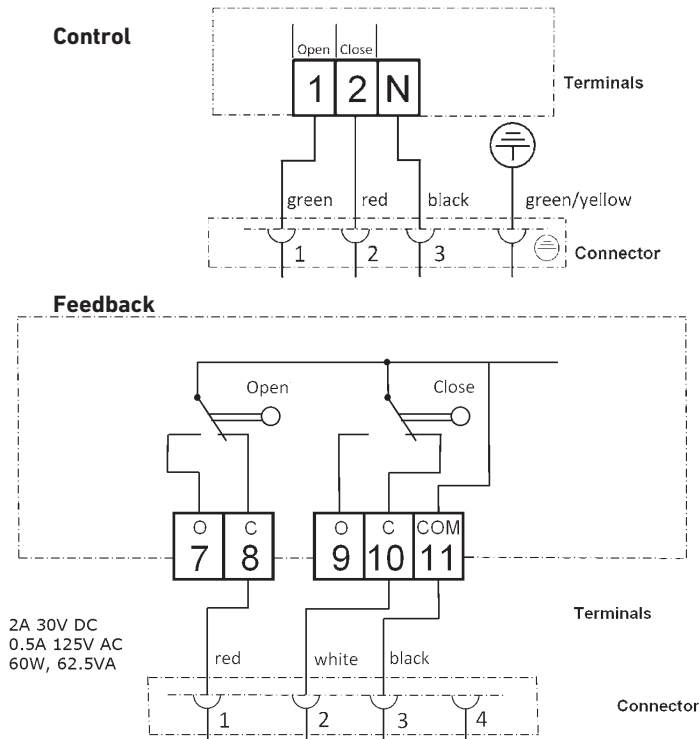
### Sample Specification

The Type 125/128 3-way Ball Valve shall be used in open/close applications. The actuator shall be a Type EA15. The ball valve shall be true union and utilize a floating ball design. The ball shall be fully molded and full port with two way blocking capability. The stem shall be blowout proof, utilizing a double o-ring seal and a predetermined break point opposite the media side of the stem seals. The seat carrier shall be adjustable and reverse threaded. The valve nut threads shall be of buttress type. Ball seats shall have an elastomeric backing o-ring and all elastomeric seals shall be of like material. ANSI flanged versions shall meet ANSI B16.5 150lb standards. All valves shall be tested in accordance to ISO9393 and designed to ISO16135 standards. All valves shall be manufactured under ISO9001 for Quality and ISO14001 for Environmental Management. Following manual assembly, every valve shall be tested and certified bubble tight exceeding Class VI standards. Following actuated assembly, every valve shall be tested to confirm functionality.

## Key Actuator Certifications

- Machinery Directive 2006/42/EC, Annex II B
- EMV Directive CE 2004/108/CE
- EMV VDE 0843 Section 20
- Low Voltage Directive CE 2006/95/CE
- Vibration Testing EN 60068-2-6
- Interface ISO 5211
- Actuators for Industrial Valves EN 15714-2

## Wiring Diagrams



## Actuator Technical Data

|                                  | EA 15                                                                            |
|----------------------------------|----------------------------------------------------------------------------------|
| <b>Cycle Time</b>                | 5s/90°                                                                           |
| <b>Cycles at 70°F</b>            | 150,000                                                                          |
| <b>Housing Material</b>          | Glass-filled PP                                                                  |
| <b>Position Indicator</b>        | Optical, integrated LED for visual communication of position and actuator status |
| <b>Emergency Manual Override</b> | Integrated                                                                       |
| <b>Rated Voltage</b>             | 100–230VAC, 50/60 Hz                                                             |
| <b>Rated Voltage Tolerance</b>   | +/- 15%                                                                          |
| <b>Nominal Output</b>            | 35VA                                                                             |
| <b>Calculated Current Draw</b>   | 0.3A @ 100VAC<br>0.13A @ 230VAC                                                  |
| <b>Duty Cycle</b>                | 40%                                                                              |
| <b>Position Feedback</b>         | Bi-stable, 250V, 2A                                                              |
| <b>Protection Class</b>          | IP67 per EN 60529, UL/CSA: For interior use, NEMA 4X                             |
| <b>Ambient Temperature</b>       | 14°F to 122°F (2)                                                                |
| <b>Allowable Humidity</b>        | 90% relative humidity, non condensing                                            |

(1) Overload protection of the motor is dimensioned so that the motor and the power supply board are protected. As soon as the load is within the torque range, the actuator will begin operating again.

(2) At temperatures below 14°F and if there is condensation, the heating element should be activated.

## Definition of Valve Style



Horizontal



Vertical

## Definition of Valve Type

- **Type 125:** PVC/CPVC horizontal
- **Type 128:** PVC vertical

## Material Availability

| Material | Horizontal | Vertical  |
|----------|------------|-----------|
| PVC      | All Sizes  | All Sizes |
| CPVC     | All Sizes  | -         |

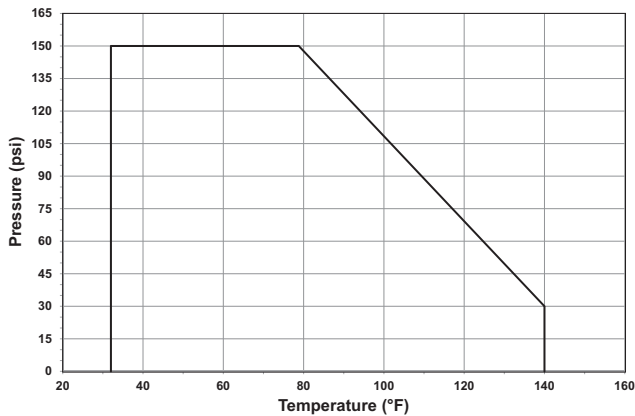
## Components



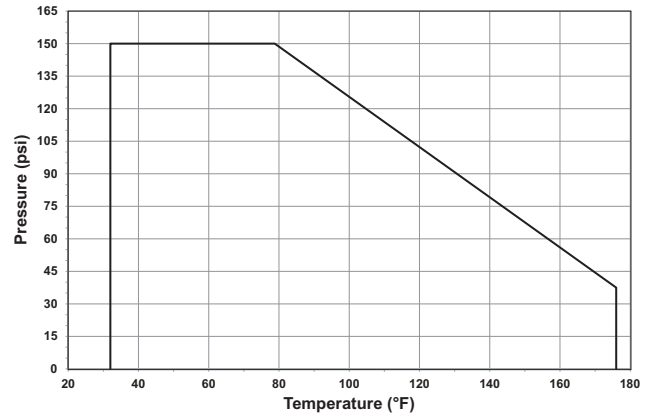
## Pressure Temperature Curves

The following graphs are based on a 25 year lifetime water or similar media application

### PVC



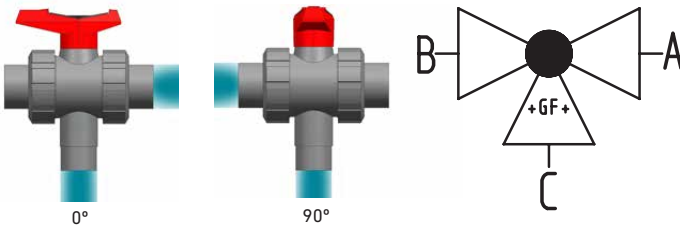
### CPVC



## Flow

Porting options shown turning the valve rotating clockwise. Redundant and intermediate positions not shown.

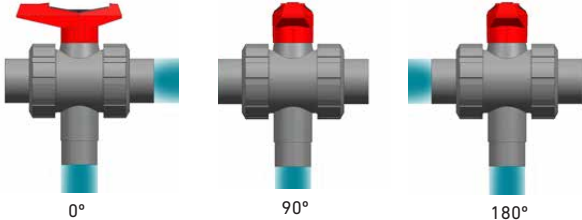
### Vertical Diverter



### Vertical: Cv Value (gal/min)

| Size (inch) | d (mm) | A-C or B-C |
|-------------|--------|------------|
| 3/8         | 16     | 3.5        |
| 1/2         | 20     | 5.3        |
| 3/4         | 25     | 10.5       |
| 1           | 32     | 19.6       |
| 1 1/4       | 40     | 33.6       |
| 1 1/2       | 50     | 43.4       |
| 2           | 63     | 86.1       |

### Vertical L-port



### Horizontal L-port: Cv Value (gal/min)

| Size (inch) | d (mm) | A-B  | C-B or C-A | B-C or A-C |
|-------------|--------|------|------------|------------|
| 3/8         | 16     | 0.7  | 3.5        | 3.5        |
| 1/2         | 20     | 1.1  | 4.5        | 4.5        |
| 3/4         | 25     | 2.1  | 10.5       | 10.5       |
| 1           | 32     | 3.5  | 19.6       | 19.6       |
| 1 1/4       | 40     | 6.3  | 33.6       | 33.6       |
| 1 1/2       | 50     | 7.7  | 43.4       | 43.4       |
| 2           | 63     | 15.4 | 86.1       | 86.1       |

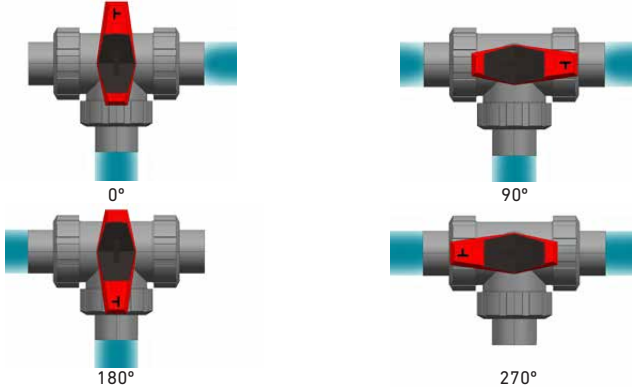
### Horizontal L-port



### Horizontal T-port: Cv Value (gal/min)

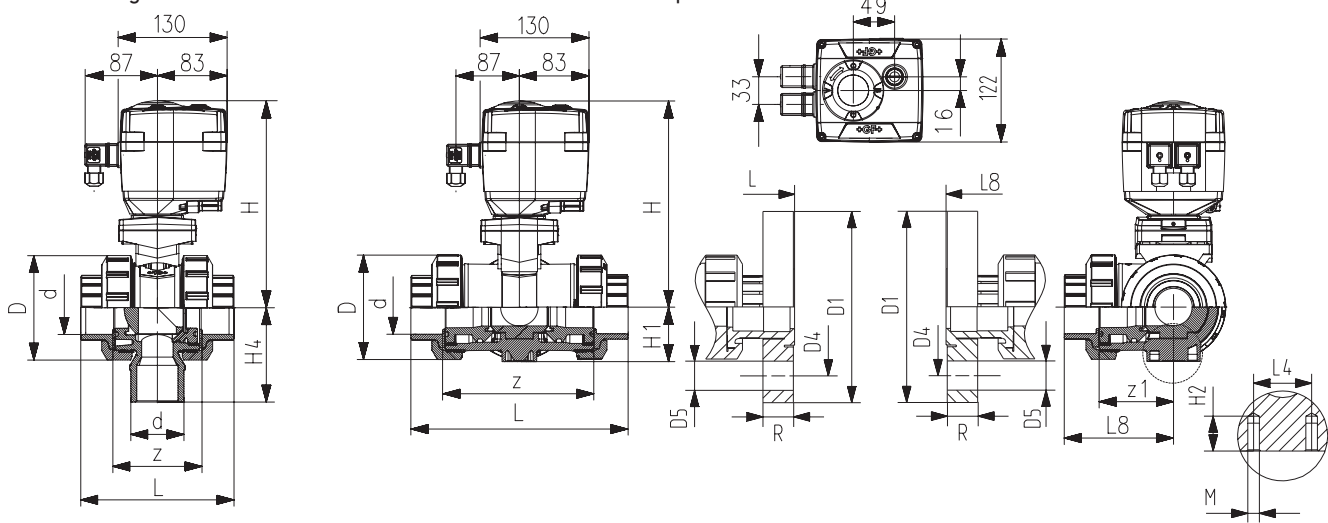
| Size (inch) | d (mm) | A-B   | C-B or C-A | B-C or A-C |
|-------------|--------|-------|------------|------------|
| 3/8         | 16     | 9.8   | 2.5        | 2.8        |
| 1/2         | 20     | 14    | 3.5        | 4.9        |
| 3/4         | 25     | 32.9  | 9.1        | 10.5       |
| 1           | 32     | 55.5  | 14         | 17.5       |
| 1 1/4       | 40     | 90.3  | 26.6       | 32.9       |
| 1 1/2       | 50     | 133.7 | 32.9       | 42         |
| 2           | 63     | 217   | 62.3       | 84.7       |

### Horizontal T-port



# Dimensions

The following tables are shown in millimeters unless otherwise specified



**Type 125/128: All Configurations**

| Size (inch) | d (mm) | D   | H   | H1 | H2 | H3 | H4  | L4 | M  |
|-------------|--------|-----|-----|----|----|----|-----|----|----|
| 3/8         | 16     | 50  | 201 | 28 | 8  | 28 | 62  | 25 | M6 |
| 1/2         | 20     | 50  | 201 | 28 | 8  | 28 | 62  | 25 | M6 |
| 3/4         | 25     | 58  | 210 | 32 | 8  | 32 | 71  | 25 | M6 |
| 1           | 32     | 68  | 210 | 36 | 8  | 36 | 77  | 25 | M6 |
| 1 1/4       | 40     | 84  | 221 | 45 | 9  | 45 | 87  | 45 | M8 |
| 1 1/2       | 50     | 97  | 221 | 51 | 9  | 51 | 97  | 45 | M8 |
| 2           | 63     | 124 | 243 | 65 | 9  | 65 | 112 | 45 | M8 |

**Type 128: PVC**

| Size (inch) | IPS Socket |     | Threaded NPT |     | ANSI Flanged |           |           |           |          |
|-------------|------------|-----|--------------|-----|--------------|-----------|-----------|-----------|----------|
|             | L          | z   | L            | z   | L            | D1 (inch) | D4 (inch) | D5 (inch) | R (inch) |
| 3/8         | 106        | 67  | 98           | 70  | -            | -         | -         | -         | -        |
| 1/2         | 105        | 61  | 98           | 64  | 149          | 3.5       | 2.38      | 0.63      | 0.57     |
| 3/4         | 121        | 70  | 112          | 76  | 165          | 3.88      | 2.75      | 0.63      | 0.58     |
| 1           | 133        | 76  | 127          | 83  | 184          | 4.25      | 3.13      | 0.63      | 0.66     |
| 1 1/4       | 152        | 90  | 146          | 99  | 206          | 4.63      | 3.5       | 0.63      | 0.69     |
| 1 1/2       | 165        | 94  | 157          | 111 | 221          | 5         | 3.88      | 0.63      | 0.76     |
| 2           | 183        | 107 | 183          | 135 | 251          | 6         | 4.75      | 0.63      | 0.82     |

**Type 125: PVC/CPVC**

| Size  | IPS Socket |     |     |    | Threaded NPT |     |     |     | ANSI Flanged |     |           |           |           |          |
|-------|------------|-----|-----|----|--------------|-----|-----|-----|--------------|-----|-----------|-----------|-----------|----------|
|       | L          | L8  | z   | z1 | L            | L8  | z   | z1  | L            | L1  | D1 (inch) | D4 (inch) | D5 (inch) | R (inch) |
| 3/8   | 123        | 61  | 85  | 42 | 115          | 57  | 87  | 43  | -            | -   | -         | -         | -         | -        |
| 1/2   | 122        | 61  | 77  | 38 | 114          | 57  | 81  | 40  | 161          | 80  | 3.5       | 2.38      | 0.50      | 0.57     |
| 3/4   | 141        | 71  | 92  | 46 | 131          | 66  | 96  | 48  | 182          | 91  | 3.88      | 2.75      | 0.50      | 0.58     |
| 1     | 161        | 81  | 105 | 53 | 155          | 78  | 111 | 56  | 208          | 104 | 4.25      | 3.13      | 0.50      | 0.66     |
| 1 1/4 | 187        | 93  | 126 | 63 | 181          | 90  | 134 | 67  | 238          | 119 | 4.63      | 3.5       | 0.50      | 0.69     |
| 1 1/2 | 213        | 107 | 143 | 72 | 205          | 103 | 159 | 80  | 265          | 133 | 5         | 3.88      | 0.50      | 0.76     |
| 2     | 261        | 130 | 185 | 92 | 261          | 130 | 213 | 106 | 323          | 161 | 6         | 4.75      | 0.63      | 0.82     |