# B317, 3-Way, Characterized Control Valve
## Stainless Steel Ball and Stem

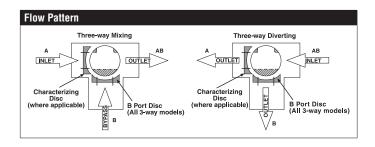**BELIMO®**

## Application
This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable or constant flow.
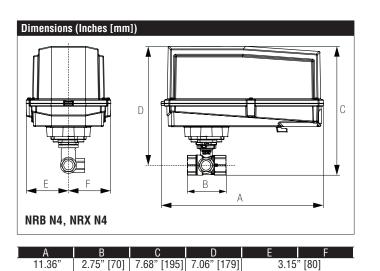
### Suitable Actuators

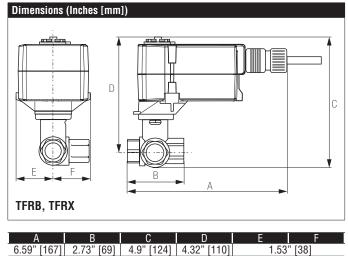|  | Non-Spring | Spring |
|---|---|---|
| B317 | TR, LR, NRB(X) | TFB(X), LF |

### Dimensions (Inches [mm])

**LRB, LRX**

| A | B | C | D | E | F | H1 | H2 |
|---|---|---|---|---|---|---|---|
| 8.5" [216] | 2.73" [69] | 5.79" [147] | 5.09" [129] | 1.3" [33] | 1.47" [37] | 1.18" [30] | 1" [25] |

### Technical Data

| | |
|---|---|
| Service | chilled, hot water, up to 60% glycol |
| Flow Characteristic | A-port equal percentage, B-port modified for constant common port flow |
| Controllable Flow Range | 75° |
| Size [mm] | 0.75" [20] |
| End Fitting | NPT female ends |
| Body | forged brass, nickel plated |
| Ball | stainless steel |
| Stem | stainless steel |
| Stem Packing | EPDM (lubricated) |
| Seat | Teflon® PTFE |
| Seat O-ring | EPDM (lubricated) |
| Characterized Disc | TEFZEL® |
| Body Pressure Rating [psi] | 600 |
| Media Temperature Range (Water) | 0°F to 250°F [-18°C to 120°C] |
| Max Differential Pressure (Water) | 50 psi (345 kPa) |
| Close-Off Pressure | 200 psi |
| Cv | 4.7 |
| Weight | 0.9 lb [0.4 kg] |
| Leakage | 0% for A to AB, <2.0% for B to AB |
| Servicing | maintenance free |

### Flow Pattern

## Dimensions (Inches [mm])



**NRB N4, NRX N4**

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 11.36" [289] | 2.75" [70] | 7.68" [195] | 7.06" [179] | 3.15" [80] | |

## Dimensions (Inches [mm])



**TFRB, TFRX**

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 6.59" [167] | 2.73" [69] | 4.9" [124] | 4.32" [110] | 1.53" [38] | |

## Dimensions (Inches [mm])



**LRQB, LRQX**

| A | B | C | D | E | F | H1 | H2 |
|---|---|---|---|---|---|---|---|
| 8.9" [226] | 2.73" [69] | 6.34" [161] | 5.64" [143] | 1.58" [40] | | 1.18" [30] | 1.3" [33] |

## Dimensions (Inches [mm])



**LF**

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 8.58" [218] | 2.73" [69] | 6.27" [159] | 5.57" [141] | 1.82" [46] | 1.89" [48] |

## Dimensions (Inches [mm])



**TR**

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 3.72" [95] | 2.73" [69] | 4.79" [122] | 4.21" [107] | 1.25" [32] | 1.2" [31] |

| C | D |
|---|---|
| 7.68" [195] | 7.06" [179] |

# LF120-S US, Valve Actuator
## On/Off, Spring Return, 120 VAC, Auxiliary Switch



| Technical Data | |
|---|---|
| Power Supply | 120 VAC, ±10%, 50/60 Hz |
| Power Consumption Running | 5.5 W |
| Power Consumption Holding | 3.5 W |
| Transformer Sizing | 7.5 VA |
| Electrical Connection | (2) 3ft [1m], 18 GA appliance cables with 1/2" conduit connectors |
| Overload Protection | electronic throughout 0° to 95° rotation |
| Operating Range Y | on/off |
| Angle of Rotation | 90° |
| Direction of Rotation (Motor) | reversible with built-in switch |
| Direction of Rotation (Fail-Safe) | reversible with CW/CCW mounting |
| Position Indication | visual indicator, 0° to 95°  (0° is full spring return position) |
| Running Time (Motor) | 40...75 sec |
| Running Time (Fail-Safe) | <25 sec @ -4°F to 122°F [-20°C to 50°C], <60 sec @ -22°F [-30°C] |
| Ambient Temperature Range | -22...122 °F [-30...50 °C] |
| Storage Temperature Range | -40...176 °F [-40...80 °C] |
| Housing | IP54, NEMA 2 |
| Agency Listings† | cULus acc. To UL 873 and CAN/CSA C22.2 No. 24-93 |
| Noise Level (Motor) | <50 dB (A) |
| Noise Level (Fail-Safe) | <62 dB (A) |
| Servicing | maintenance free |
| Quality Standard | ISO 9001 |
| Auxiliary switch | 1 x SPDT, 3A resistive (0.5A inductive) @ 250 VAC, adjustable 0° to 95° |

†Rated Impulse Voltage 800V, Type of action 1.AA, Control Pollution Degree 3

**Wiring Diagrams**

## ⚒ INSTALLATION NOTES

(A)  Actuators with appliance cables are numbered.

⚠1  Provide overload protection and disconnect as required.

⚠11  Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.

⚠44  One built-in auxiliary switch (1x SPDT), for end position indication, interlock control, fan startup, etc.

⚡  Apply only AC line voltage or only UL-Class 2 voltage to the terminals of auxiliary switches. Mixed or combined operation of line voltage/safety extra low voltage is not allowed.

◆  Meets cULus requirements without the need of an electrical ground connection.

## ⚠ WARNING! LIVE ELECTRICAL COMPONENTS!

During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



**Line Volts**

Wht N — Wht (1) Neutral
Blk H — Blk (2) Hot

◆ (A) ⚠1 ⚠11

**On/Off**



◆ ⚡ ⚠1 ⚠44

S1
S2 — NC
S3 — NO    0° to 95°

**Auxiliary Switches**