

# B254, 2-Way, Characterized Control Valve

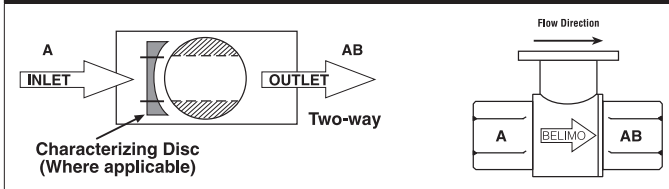
## Stainless Steel Ball and Stem



### Technical Data

|                                   |                                      |
|-----------------------------------|--------------------------------------|
| Service                           | chilled, hot water, up to 60% glycol |
| Flow Characteristic               | equal percentage                     |
| Controllable Flow Range           | 75°                                  |
| Size [mm]                         | 2" [50]                              |
| 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                | No Disc (full flow)                  |
| Body Pressure Rating [psi]        | 400                                  |
| 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                                | 240                                  |
| Weight                            | 5.3 lb [2.4 kg]                      |
| Leakage                           | 0% for A to AB                       |
| Servicing                         | maintenance free                     |

### Flow Pattern



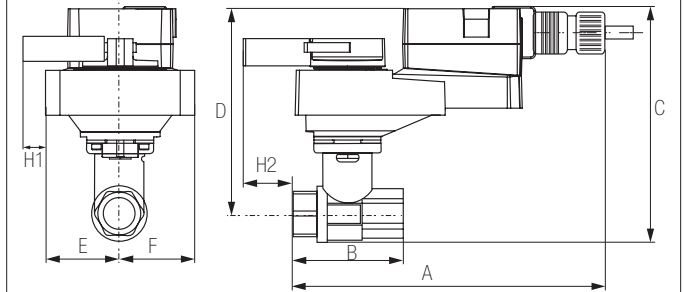
### Application

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 flow.

### Suitable Actuators

|      | Non-Spring | Spring  |
|------|------------|---------|
| B254 | ARB(X)     | AFRB(X) |

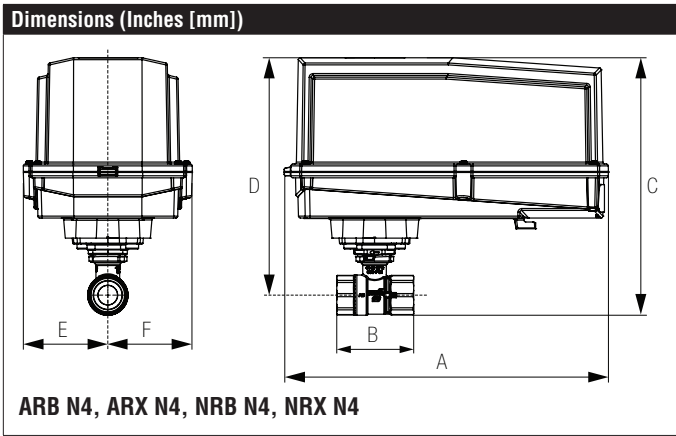
### Dimensions (Inches [mm])



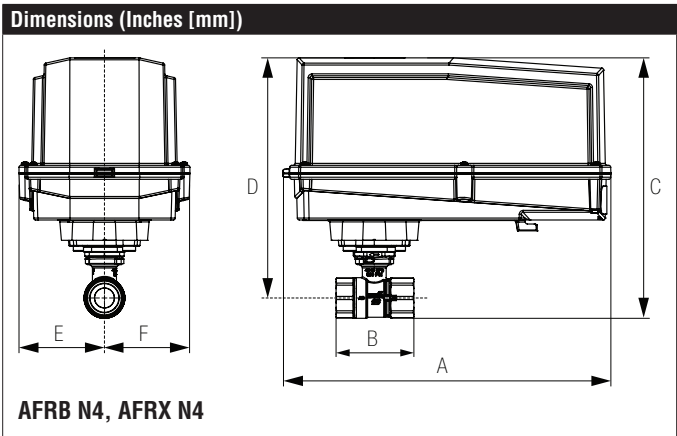
### ARB, ARX

| A      | B     | C     | D     | E          | F | H1         |
|--------|-------|-------|-------|------------|---|------------|
| 10.25" | 4.93" | 7.68" | 5.98" | 1.73" [44] |   | 1.18" [30] |
| [260]  | [125] | [195] | [152] |            |   |            |

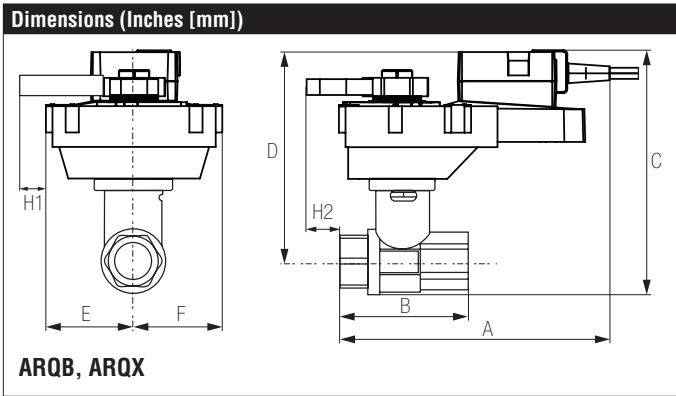
**B254, 2-Way, Characterized Control Valve**  
Stainless Steel Ball and Stem



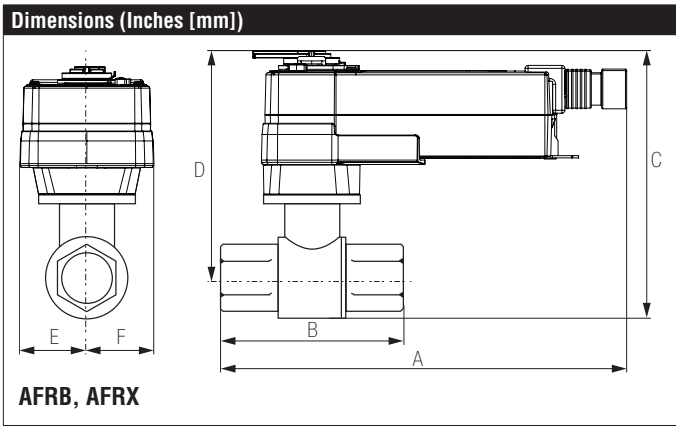
| A               | B           | C          | D           | E          | F |
|-----------------|-------------|------------|-------------|------------|---|
| 11.36"<br>[289] | 4.21" [107] | 9.8" [249] | 7.55" [192] | 3.15" [80] |   |



| A               | B           | C               | D           | E          | F |
|-----------------|-------------|-----------------|-------------|------------|---|
| 12.98"<br>[330] | 4.93" [125] | 10.29"<br>[261] | 9.24" [235] | 3.39" [86] |   |



| A             | B           | C              | D              | E          | F | H1            | H2        |
|---------------|-------------|----------------|----------------|------------|---|---------------|-----------|
| 9.9"<br>[251] | 4.21" [107] | 7.45"<br>[190] | 6.11"<br>[155] | 2.28" [58] |   | 0.75"<br>[20] | 0.5" [15] |



| A               | B           | C               | D           | E          | F |
|-----------------|-------------|-----------------|-------------|------------|---|
| 11.27"<br>[286] | 4.93" [125] | 10.56"<br>[268] | 8.86" [225] | 2.02" [51] |   |

# AFRXUP N4

## NEMA 4, On/Off, Spring Return, 24 to 240 VAC



| Technical Data                          |  |
|---|--|
| Power Supply                            | 24...240 VAC, -20% / +10%, 50/60 Hz, 24...125 VDC, ±10%  |
| Power consumption in operation          | 7 W  |
| Power consumption in rest position      | 3.5 W  |
| Transformer sizing                      | 7 VA @ 24 VAC (class 2 power source), 8.5 VA @ 120 VAC, 18 VA @ 240 VAC / heater 25 VA @ 120 VAC |
| Electrical Connection                   | 3ft [1m], 18 GA appliance cable with 1/2" conduit connector                                      |
| Overload Protection                     | electronic throughout 0° to 95° rotation   |
| Angle of rotation                       | 90°  |
| direction of rotation motor             | reversible with CW/CCW mounting  |
| direction of rotation spring-return     | reversible with CW/CCW mounting  |
| Position indication                     | visual indicator, 0° to 95° (0° is full spring return position)                                  |
| Manual override                         | 5 mm hex crank (3/16" Allen), supplied   |
| Running time motor                      | <75 sec  |
| Running time emergency control position | <20 sec  |
| Ambient humidity                        | 5 to 95% RH non condensing (EN 60730-1)  |
| Ambient temperature                     | -22...122 °F [-30...50 °C]   |
| Non-operating temperature               | -40...176 °F [-40...80 °C]   |
| Degree of Protection                    | IP66, NEMA 4X, UL Enclosure Type 4X  |
| Agency Listing                          | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC       |
| Noise level, motor                      | <45 dB (A)   |
| Noise Level (Fail-Safe)                 | <62 dB (A)   |
| Maintenance                             | maintenance free   |
| Quality Standard                        | ISO 9001   |
| Weight                                  | 9.7 lbs (4.4 kg); 10 lbs (4.5 kg) with switches  |

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

Wiring Diagrams

**INSTALLATION NOTES**

- (A)** Actuators with appliance cables are numbered.
- (UP)** Universal Power Supply (UP) models can be supplied with 24 VAC up to 240 VAC, or 24 VDC up to 125 VDC.
- 1** Provide overload protection and disconnect as required.
- 45** Actuators may be powered in parallel. Power consumption must be observed.
- 48** Parallel wiring required for piggy-back applications.
- ◆** 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.

