

B278, 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] | 3" [80] |
| 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] | 400 |
| Media Temperature Range (Water) | 0°F to 212°F [-18°C to 100°C] |
| Max Differential Pressure (Water) | 30 psi |
| Close-Off Pressure | 100 psi |
| Cv | 130 |
| Weight | 9 lb [4.1 kg] |
| Leakage | 0% for A to AB |
| Servicing | maintenance free |



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 |
|------|------------|---------|
| B278 | ARB(X) | AFRB(X) |

Dimensions (Inches [mm])



| A | B | C | D | E | F | H1 | H2 |
|-------|-------|-------|-------|-------|------|-------|-------|
| 11" | 5.82" | 8.48" | 5.95" | 2.78" | [71] | 2.07" | 0.75" |
| [280] | [148] | [217] | [152] | | | [53] | [20] |

Date created, 10/27/2017 - Subject to change. © Belimo Aircontrols (USA), Inc.

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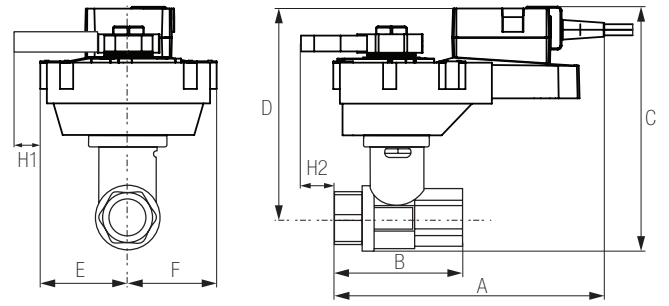
Dimensions (Inches [mm])



AFRB, AFRX

| A | B | C | D | E | F |
|-----------------|-------------|-------------|-------------|------------|---|
| 11.77" [299] | 5.82" [148] | 9.11" [231] | 6.61" [168] | 2.02" [51] | |

Dimensions (Inches [mm])



ARQB, ARQX

| A | B | C | D | E | F | H1 | H2 |
|---------------|----------------|----------------|----------------|------------|---|---------------|-----------|
| 9.9" [251] | 4.21" [107] | 8.61" [220] | 6.11" [155] | 2.28" [58] | | 0.75" [20] | 0.5" [15] |

Dimensions (Inches [mm])



AFRB N4, AFRX N4

| A | B | C | D | E | F |
|-----------------|-------------|-----------------|-------------|------------|---|
| 12.98" [330] | 5.82" [148] | 10.29" [261] | 9.24" [235] | 3.39" [86] | |

Dimensions (Inches [mm])



ARB N4, ARX N4, NRB N4, NRX N4

| A | B | C | D | E | F |
|-----------------|-------------|-----------------|-------------|------------|---|
| 11.36" [289] | 5.82" [148] | 10.74" [274] | 8.01" [204] | 3.15" [80] | |

ARX24-PC

Modulating, Non-Spring Return, 24 V, 0 to 20 V Phasecut



| Technical Data | |
|-------------------------------|--|
| Power Supply | 24 VAC, ±20%, 50/60 Hz, 24 VDC, ±10% |
| Power Consumption Running | 3.5 W |
| Power Consumption Holding | 1.3 W |
| Transformer Sizing | 5.5 VA (class 2 power source) |
| Electrical Connection | cable with conduit connector |
| Overload Protection | electronic throughout 0° to 90° rotation |
| Operating Range Y | 0 TO 20 V phasecut control is only for the positive part of the sine wave (max. of 10 volts) |
| Input Impedance | 8000 Ω (50mW) |
| Feedback Output U | 2 to 10 VDC |
| Angle of Rotation | 90° |
| Direction of Rotation (Motor) | reversible with built-in switch |
| Position Indication | integrated into handle |
| Manual Override | external push button |
| Running Time (Motor) | 90 sec |
| Ambient Humidity | 5 to 95% RH non condensing (EN 60730-1) |
| Ambient Temperature Range | -22°F to 122°F [-30°C to 50°C] |
| Storage Temperature Range | -40°F to 176°F [-40°C to 80°C] |
| Housing | NEMA 2, IP54 |
| Housing Material | UL94-5VA |
| Agency Listings† | 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) | max. 45 dB (A) |
| Servicing | maintenance free |
| Quality Standard | ISO 9001 |
| Weight | 2.2 lb [1 kg] |

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

Wiring Diagrams
INSTALLATION NOTES

- Provide overload protection and disconnect as required.
- Actuators may also be powered by 24 VDC.
- Only connect common to negative (-) leg of control circuits.
- Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
- 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.

