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

B251, **2-Way, Characterized Control Valve** Stainless Steel Ball and Stem







| WARRANT |
|---------|
| |

| 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 | stainless steel |
| Body Pressure Rating [psi] | 400 |
| Media Temperature Range | 0°F to 250°F [-18°C to 120°C] |
| (Water) | |
| Max Differential Pressure (Water) | 50 psi (345 kPa) |
| Close-Off Pressure | 200 psi |
| Cv | 65 |
| Weight | 5.3 lb [2.4 kg] |
| Leakage | 0% for A to AB |
| Servicing | maintenance free |

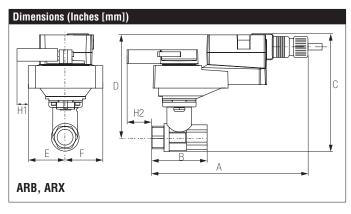


Application

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 | | | |
|------|------------|---------|--|--|--|
| B251 | ARB(X) | AFRB(X) | | | |

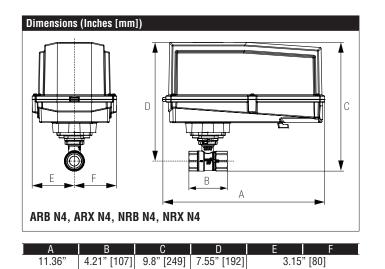


| А | В | С | D | E | F | H1 |
|--------|-------|-------|-------|------|--------|------------|
| 10.25" | 4.93" | 7.68" | 5.98" | 1.73 | " [44] | 1.18" [30] |
| [260] | [125] | [195] | [152] | | | |

[289]

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3.39" [86]



| AFRB N4, AFRX N4 | A A |
|------------------|-----|

10.29"

[261]

9.24" [235]

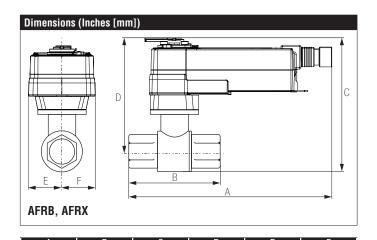
4.93" [125]

12.98'

[330]

| Dimensions (Inches [mm]) | |
|--------------------------|------|
| HI | D H2 |
| ARQB, ARQX | - |

| Α | В | С | D | Е | F | H1 | H2 |
|-------|-------|-------|-------|------|--------|-------|-----------|
| 9.9" | 4.21" | 7.45" | 6.11" | 2.28 | " [58] | 0.75" | 0.5" [15] |
| [251] | [107] | [190] | [155] | | | [20] | |



8.86" [225]

2.02" [51]

10.56

[268]

4.93" [125]

11.27"

[286]

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





| ned-Edoji. |
|---|
| |
| 24 VAC, ±20%, 50/60 Hz, 24 VDC, ±10% |
| 3.5 W |
| 1.3 W |
| 5.5 VA (class 2 power source) |
| cable with conduit connector |
| electronic thoughout 0° to 90° rotation |
| 0 TO 20 V phasecut control is only for the |
| positive part of the sine wave (max. of 10 volts) |
| 8000 Ω (50mW) |
| 2 to 10 VDC |
| 90° |
| reversible with built-in switch |
| integrated into handle |
| external push button |
| 90 sec |
| 5 to 95% RH non condensing (EN 60730-1) |
| -22°F to 122°F [-30°C to 50°C] |
| -40°F to 176°F [-40°C to 80°C] |
| NEMA 2, IP54 |
| UL94-5VA |
| cULus acc. to UL60730-1A/-2-14, CAN/CSA |
| E60730-1:02, CE acc. to 2004/108/EC and |
| 2006/95/EC |
| max. 45 dB (A) |
| maintenance free |
| ISO 9001 |
| 2.2 lb [1 kg] |
| |



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

Wiring Diagrams



X 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.

