BELIMO

# Technical data sheet B209

2-way, Characterized Control Valve, Stainless Steel Ball and Stem



Picture may differ from product

5-year warranty

## Type overview

| Type | DN |
|---|---|
| B209 | 1/2" [15] |

## Technical data

| | | |
|---|---|---|
| **Functional data** | Valve size [mm] | 0.5" [15] |
| | Fluid | chilled or hot water, up to 60% glycol |
| | Fluid Temp Range (water) | 0...250°F [-18...120°C] |
| | Body Pressure Rating | 600 psi |
| | Close-off pressure Δps | 200 psi |
| | Flow characteristic | equal percentage |
| | Leakage rate | 0% for A–AB |
| | Pipe connection | Internal thread<br>NPT (female) |
| | Servicing | maintenance-free |
| | Flow Pattern | 2-way |
| | Controllable flow range | 75° |
| | Cv | 0.8 |
| **Materials** | Valve body | Nickel-plated brass body |
| | Stem | stainless steel |
| | Stem seal | EPDM (lubricated) |
| | Seat | PTFE |
| | Characterized disc | TEFZEL® |
| | O-ring | EPDM (lubricated) |
| | Ball | stainless steel |
| **Suitable actuators** | Non Fail-Safe | TR<br>LRB(X)<br>LRQB(X)<br>NRB(X) N4 |
| | Spring | TFRB(X)<br>LF |

## Safety notes

- WARNING: This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to www.p65warnings.ca.gov

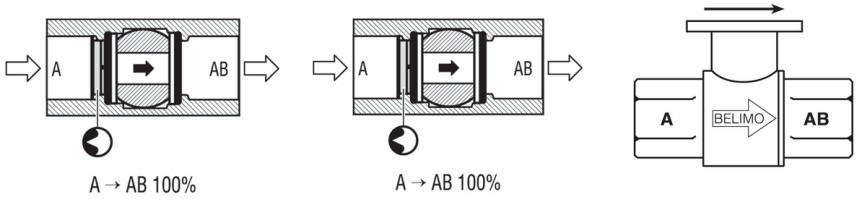
## Product features

**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.

**Flow/Mounting details**

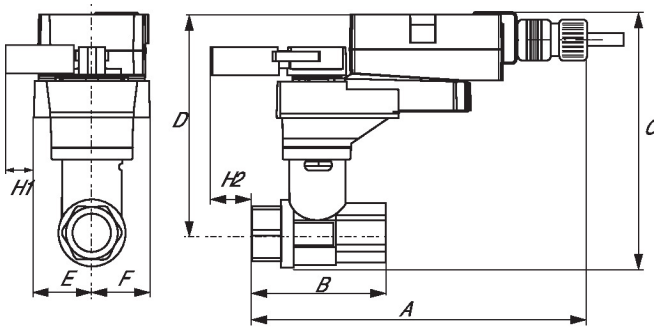
Two-way valves should be installed with the disc upstream.




## Dimensions

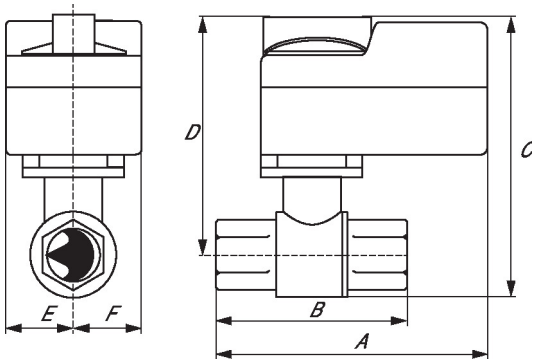
| Type | DN | Weight |
|---|---|---|
| B209 | 1/2" [15] | 0.50 lb [0.23 kg] |

LRB, LRX



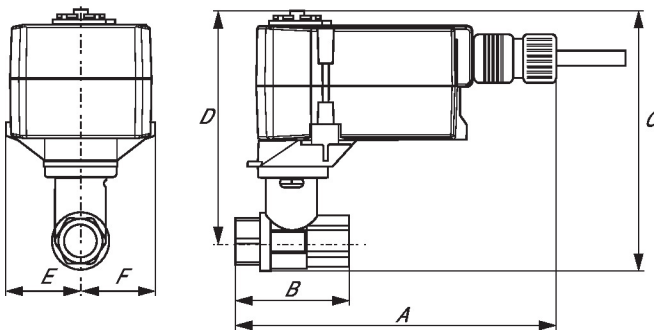

| A | B | C | D | E | F | H1 | H2 |
|---|---|---|---|---|---|---|---|
| 9.4" [239] | 2.4" [60] | 5.2" [132] | 4.6" [117] | 1.3" [33] | 1.3" [33] | 1.2" [30] | 1.1" [28] |

TR




| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 3.7" [95] | 2.4" [60] | 4.8" [122] | 4.2" [107] | 1.3" [33] | 1.3" [33] |

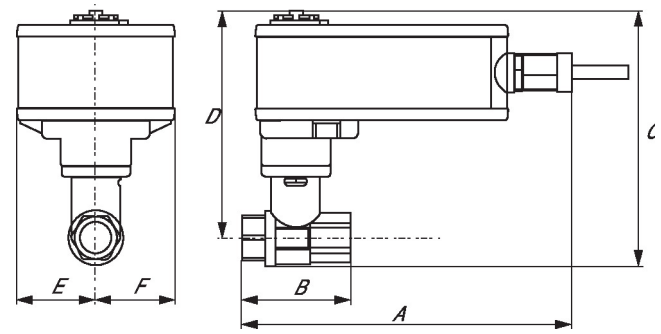
TFRB, TFRX




| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 6.6" [167] | 2.4" [60] | 4.9" [124] | 4.3" [110] | 1.5" [39] | 1.5" [39] |

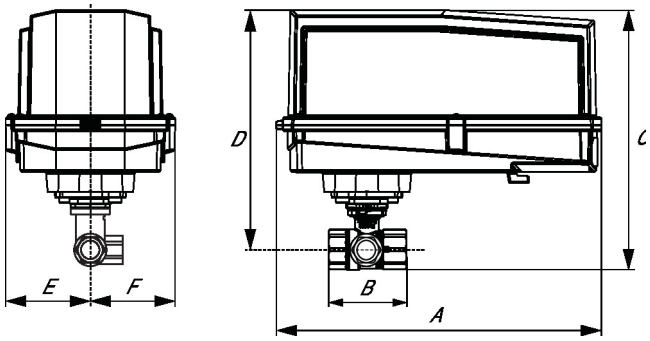
## Dimensions

LF




| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 7.91" [200] | 2.4" [60] | 5.7" [146] | 5.1" [129] | 1.8" [46] | 1.8" [46] |

ARB N4, ARX N4




| A | B | C | D | E | F |
|---|---|---|---|---|---|
| 11.4" [289] | 2.4" [60] | 7.7" [196] | 7.0" [179] | 3.1" [80] | 3.1" [80] |

On/Off, Non fail-safe, 24 V



Picture may differ from product

5-year warranty

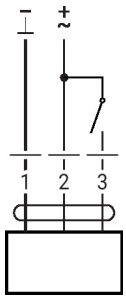
## Technical data

| | | |
|---|---|---|
| **Electrical data** | Nominal voltage | AC 24 V |
| | Nominal voltage frequency | 50/60 Hz |
| | Nominal voltage range | AC 19.2...28.8 V |
| | Power consumption in operation | 1 W |
| | Transformer sizing | 1 VA |
| | Electrical Connection | 18 AWG plenum cable, 5 m |
| | Overload Protection | electronic throughout full rotation |
| **Functional data** | Manual override | push down handle |
| | Angle of rotation | 90° |
| | Running Time (Motor) | 90 s / 90° |
| | Sound power level, motor | 35 dB(A) |
| | Position indication | integrated into handle |
| **Safety data** | Power source UL | Class 2 Supply |
| | Degree of protection IEC/EN | IP40 |
| | Degree of protection NEMA/UL | NEMA 1 |
| | Housing | UL Enclosure Type 1 |
| | Agency Listing | cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02<br>CE acc. to 2014/30/EU and 2014/35/EU |
| | Quality Standard | ISO 9001 |
| | UL 2043 Compliant | Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC |
| | Ambient humidity | Max. 95% RH, non-condensing |
| | Ambient temperature | -22...122°F [-30...50°C] |
| | Storage temperature | -40...176°F [-40...80°C] |
| | Servicing | maintenance-free |
| **Weight** | Weight | [] |

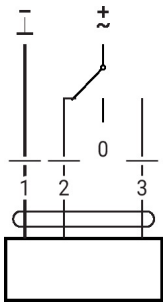
## Electrical installation

**Wire colors:**
1 = black
2 = red
3 = white

AC/DC 24 V, on/off




AC/DC 24 V, 3-point




| 1 | 2 | 3 | |
|---|---|---|---|
| | | | A - AB = 0% |
| | | | A - AB = 100% |
| | | | stop |
| | | | A - AB = 100% |