

# B2 Series, 2-Way, Characterized Control Valve Chrome Plated Brass Ball and Brass Stem



## 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.

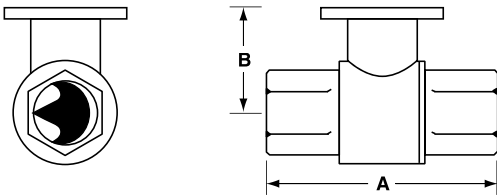
Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage
Action	90° rotation
Sizes	½", ¾"
Type of end fitting	NPT female ends
Materials:	
Body	forged brass, nickel plated
Ball	chrome plated brass
Stem	nickel plated brass
Seats	PTFE
Characterizing disc	Tefzel®
Packing	2 EPDM O-rings, lubricated
Pressure rating	600 psi per EN 12266-1:2003
Media temp. range	0°F to 212°F [-18°C to 100°C]
Close off pressure	200 psi
Maximum differential pressure (ΔP)	30 psi for typical applications
Leakage	0% for A to AB
C <sub>v</sub> rating	A-port: see product chart for values

Tefzel® is a registered trademark of DuPont

C <sub>v</sub>	Valve Nominal Size		Type	Suitable Actuators			
	Inches	DN [mm]	2-way NPT	Non-Spring		Spring	
0.3	½"	15	B207B	TR Series	LR Series	TF Series	LF Series
0.46	½"	15	B208B				
0.8	½"	15	B209B				
1.2	½"	15	B210B				
1.9	½"	15	B211B				
3	½"	15	B212B				
4.7	½"	15	B213B				
7.4	½"	15	B214B				
10	½"	15	B215B*				
4.7	¾"	20	B217B				
7.4	¾"	20	B218B				
10	¾"	20	B219B				
24	¾"	20	B220B*				

\*Models without characterizing disc

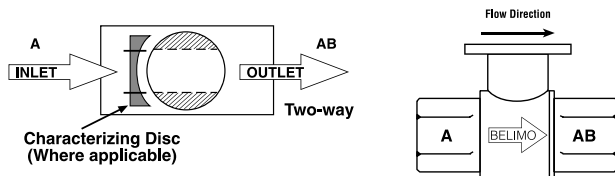
## Dimensions



2Way Valve-B207-B220

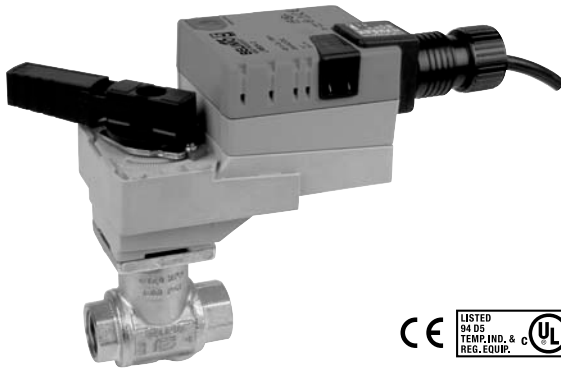
Valve Body	Valve Nominal Size		Dimensions (Inches [mm])	
	Inches	DN [mm]	A	B
B207B-B211B	½"	15	2.41" [61.1]	1.39" [35.2]
B212B-B215B	½"	15	2.38" [60.4]	1.72" [43.7]
B217B-B220B	¾"	20	2.73" [69.3]	1.81" [45.9]

## Flow Patterns



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# LR...24-SR Actuators, Proportional



## Models

LRB24-SR-T	LRX24-SR-T	w/Terminal Block
LRB24-SR	LRX24-SR	w/3ft. cable

## Technical Data

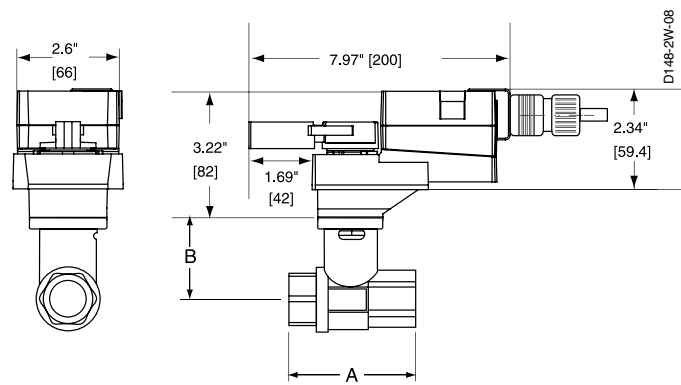
Power supply	24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption	running 1.5 W holding 0.4 W
Transformer sizing	3 VA (class 2 power source)
Electrical connection	1/2" conduit connector 18 GA, plenum rated cable 3 ft [1m] LRB24-SR LRX24-SR □ 3 ft [1m] □ 10 ft [3m] □ 16 ft [5m]
Overload protection	electronic throughout 0° to 95° rotation
Operating range Y	2 to 10 VDC, 4 to 20 mA
Feedback output U	1 to 10 VDC, max 0.5 mA
Input impedance	100 kΩ (0.1 mA), 500 Ω
Angle of rotation	90°, adjustable with mechanical stop
Direction of rotation	reversible with protected  switch
Position indication	handle
Manual override	external push button
Running time	constant independent of load
LRB24-SR	90 seconds
LRX24-SR	□ 150 □ 95 □ 60 □ 45 □ 35 seconds
Humidity	5 to 95% RH non-condensing (EN 60730-1)
Ambient temperature	-22°F to 122°F [-30°C to 50°C]
Storage temperature	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA 2/IP54
Housing material	UL94-5VA
Agency listings†	cULus according to UL 60730-1A/-2-14, CAN/CSA E60730-1:02, CE according to 2004/108/EC and 2006/95/EC for line voltage and/or -S versions
Noise level	<35 dB(A)
Quality standard	ISO 9001

## LR...24-SR-T

Electrical connection	screw terminal (for 26 to 14 GA wire) protected (NEMA 2/IP20)
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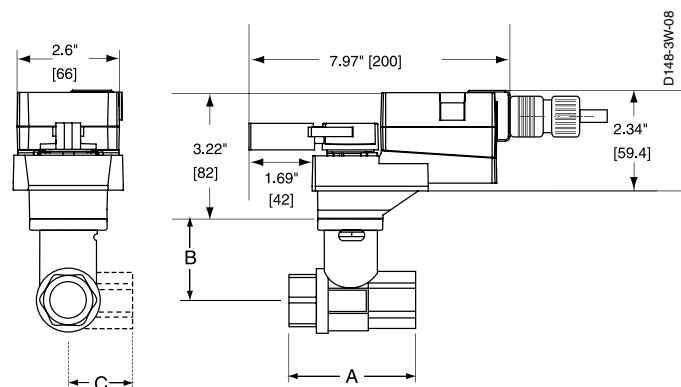
† Rated impulse voltage 800V, Control pollution degree 3, Type of action 1  
(1.B for -S models)

## Dimensions with 2-Way Valve



Valve Body	Valve Nominal Size		Dimensions (Inches [mm])	
	Inches	DN [mm]	A	B
B207(B)-B211(B)	1/2"	15	2.41" [61.1]	1.39" [35.2]
B212(B)-B215(B)	1/2"	15	2.38" [60.4]	1.72" [43.7]
B217(B)-B220(B)	3/4"	20	2.73" [69.3]	1.81" [45.9]
B222-B225	1"	25	3.09" [78.4]	1.81" [45.9]
B229-B230	1 1/4"	32	3.72" [94.6]	1.81" [45.9]

## Dimensions with 3-Way Valve



Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
B307(B)-B311(B)	1/2"	15	2.06" [52.2]	1.39" [35.2]	1.20" [30.6]
B312(B)-B315(B)	1/2"	15	2.38" [60.4]	1.72" [43.7]	1.26" [32.1]
B317(B)-B320(B)	3/4"	20	2.73" [69.3]	1.81" [45.9]	1.45" [36.8]
B322-B325	1"	25	3.09" [78.4]	1.81" [45.9]	1.56" [39.8]

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### Wiring Diagrams

#### ✂️ INSTALLATION NOTES

- ⚠️ **CAUTION Equipment damage!**  
Actuators may be connected in parallel.  
Power consumption and input impedance must be observed.
- ⚠️ **3** Actuators may also be powered by 24 VDC.
- ⚠️ **5** Only connect common to neg. (-) leg of control circuits.

#### 📄 APPLICATION NOTES

- ◆ Meets cULus or UL and CSA requirements without the need of an electrical ground connection.
- ◆ The ZG-R01 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC, up to 2 actuators may be connected in parallel.

⚠️ **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.

