

# B3 Series, 3-Way, Characterized Control Valve Chrome Plated Brass Ball and Brass Stem

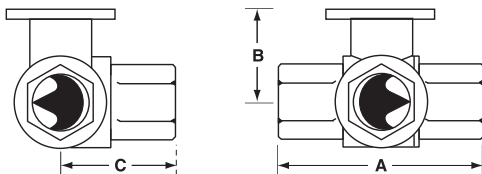


## Technical Data

Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage B-port modified for constant common port flow
Controllable Flow Range	75°
Sizes	1/2", 3/4"
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
Body pressure rating	600 psi
Media temp. range	0°F to 250°F [-18°C to 120°C]
Close off pressure	200 psi
Maximum differential pressure (ΔP)	50 psi for typical applications
Leakage	0% for A to AB <2.0% for B to AB
External leakage	according to EN 12266-1:2003
C <sub>v</sub> rating	A-port: see product chart for values B-port: 70% of A to AB C <sub>v</sub>

Tefzel® is a registered trademark of DuPont

## Dimensions

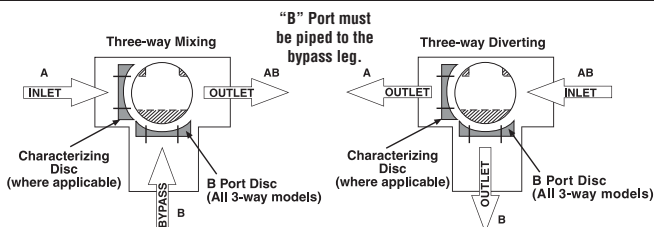


3WayValve-B307-B320

### Valve Nominal Size      Dimensions (Inches [mm])

Valve Body	Inches	DN [mm]	A	B	C
B307B-B311B	1/2"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312B-B316B	1/2"	15	2.38" [60.4]	1.78" [45.2]	1.29" [32.8]
B317B-B321B	3/4"	20	2.73" [69.3]	1.87" [47.4]	1.47" [37.3]

## Flow Patterns



## 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 or constant flow.

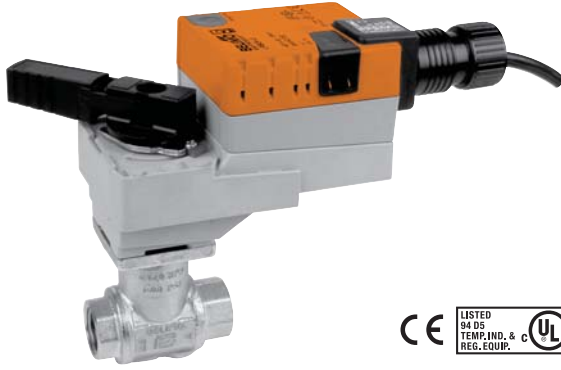
**\* (Not for use in change over applications)**

C <sub>v</sub>	Valve Nominal Size		Type	Suitable Actuators			
	Inches	DN [mm]	3-way NPT	Non-Spring		Spring	
0.3	1/2	15	B307B	TR Series	LR Series	TF Series	LF Series
0.46	1/2	15	B308B				
0.8	1/2	15	B309B				
1.2	1/2	15	B310B				
1.9	1/2	15	B311B				
3	1/2	15	B312B				
4.7	1/2	15	B313B				
10	1/2	15	B315B				
16	1/2	15	B316B				
4.7	3/4	20	B317B				
7.4	3/4	20	B318B				
14	3/4	20	B320B				
24	3/4	20	B321B				

\*Models without characterizing disc

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# LR...24-3 Actuators, On/Off, Floating Point



## Models

LRB24-3-T	LRX24-3-T	w/Terminal Block
LRB24-3	LRX24-3	w/3 ft. cable
LRB24-3-S	LRX24-3-S	w/built-in Aux. Switch

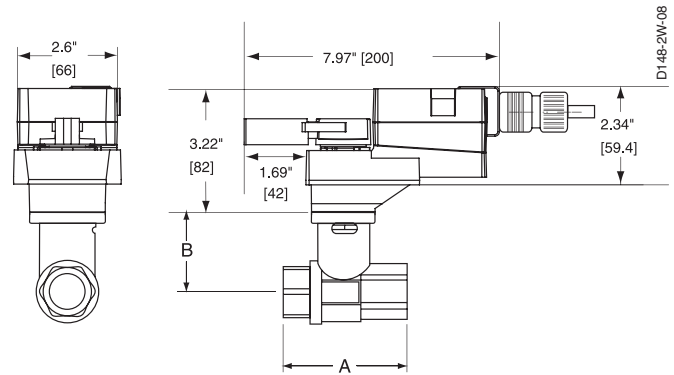
Technical Data	
Control	on/off, floating point
Power supply	24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption	running 1.5 W holding 0.2 W
Transformer sizing	2 VA (class 2 power source)
Electrical connection	1/2" conduit connector 18 GA, plenum rated cable
LRB24-3 LRX24-3	3 ft [1m] 3 ft [1m], 10 ft [3m], 16 ft [5m]
Overload protection	electronic throughout 0° to 95° rotation
Input impedance	600 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	90 seconds, constant independent of load 150, 95, 60, 45, 35 seconds, constant independent of load
LRB24-3 LRX24-3	
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 type	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	less than 35 dB (A)
Quality standard	ISO 9001

LR...24-3-T	
Electrical connection	screw terminal (for 26 to 14 GA wire) protected (NEMA 2, IP20)

LR...24-3-S	
Auxiliary switch	1 SPDT, 3A (0.5A) @ 250 VAC, UL Listed, adjustable 0° to 100°

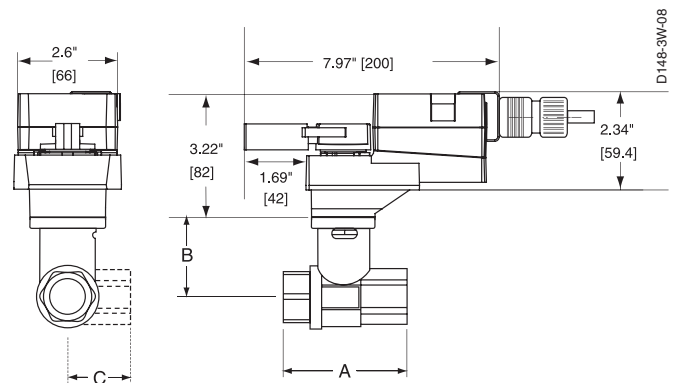
† Rated impulse voltage 800V, Control pollution degree 3, Type of action 1 (1.B for -S models)

## 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	1.39" [35.2]	1.39" [35.2]
B212(B)-B215(B)	1/2"	15	1.78" [45.2]	1.78" [45.2]
B217(B)-B221(B)	3/4"	20	1.87" [47.4]	1.87" [47.4]
B222-B225	1"	25	1.87" [47.4]	1.87" [47.4]
B229-B231	1 1/4"	32	1.87" [47.4]	1.87" [47.4]

## 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]	1.78" [45.2]	1.29" [32.8]
B317(B)-B321(B)	3/4"	20	2.73" [69.3]	1.87" [47.4]	1.47" [37.3]
B322-B325	1"	25	3.09" [78.4]	1.87" [47.4]	1.59" [40.3]

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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.



Actuators are provided with color coded wires.

Wire numbers are provided for reference.



Actuators may also be powered by 24 VDC.



#### APPLICATION NOTES



Meets cULus or UL and CSA 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.

