



## 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.

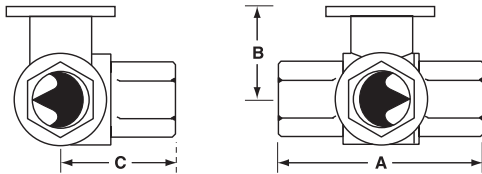
Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage B-port modified for constant common port flow
Action	90° rotation
Sizes	½", ¾"
Type of end fitting	NPT female ends
Materials:	
Body	forged brass, nickel plated
Ball	chrome plated brass
Stem	nickel plated brass
Seats	PTFE
Characterizing disc	Tefzel®
Packing	2 EPDM O-rings, lubricated
Pressure rating	600 psi
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 <2.0% for B to AB
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

C <sub>v</sub>	Valve Nominal Size		Type	Suitable Return Actuators			
	Inches	DN [mm]	3-way NPT	Non-Spring		Spring	
0.3	½"	15	B307B	TR Series	LR Series	TF Series	LF Series
0.46	½"	15	B308B				
0.8	½"	15	B309B				
1.2	½"	15	B310B				
1.9	½"	15	B311B				
3	½"	15	B312B				
4.7	½"	15	B313B				
10	½"	15	B315B*				
4.7	¾"	20	B317B				
7.4	¾"	20	B318B				
24	¾"	20	B320B*				

\*Models without characterizing disc

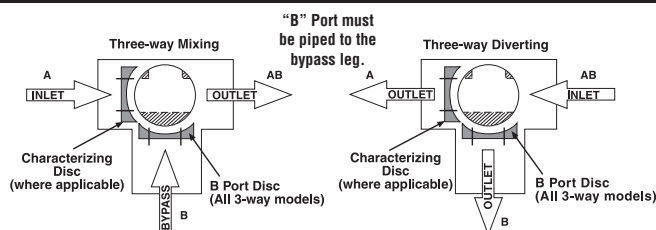
## Dimensions

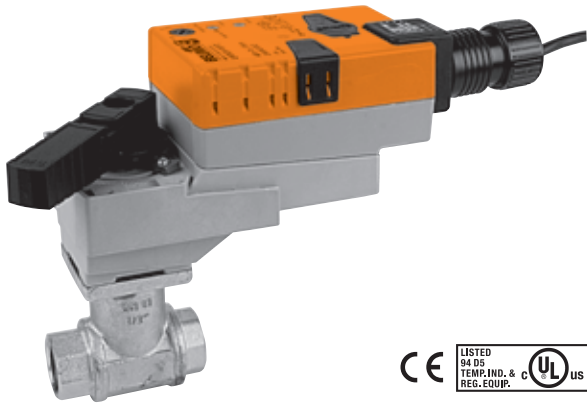


3Way/Valve-B307-B320

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
B307B-B311B	½"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312B-B315B	½"	15	2.38" [60.4]	1.72" [43.7]	1.26" [32.1]
B317B-B320B	¾"	20	2.73" [69.3]	1.81" [45.9]	1.45" [36.8]

## Flow Patterns





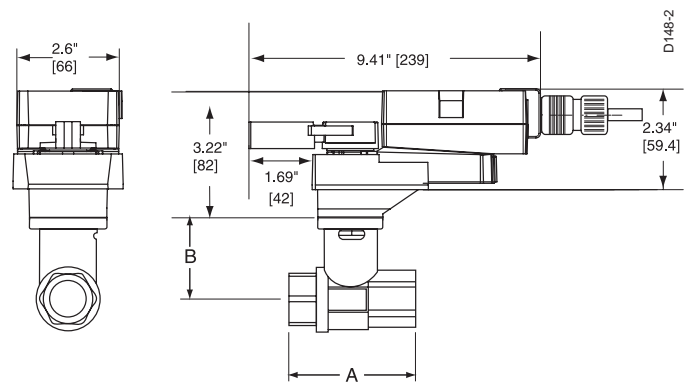
## Models

LRB120-SR  
LRX120-SR

Technical Data	
Power supply	100 to 240 VAC, 50/60 Hz (nominal) 85 to 265 VAC, 50/60 Hz (tolerance)
Power consumption	running 2.5 W holding 1 W
Transformer sizing	4 VA (class 2 power source)
Electrical connection	1/2" conduit connector 18 GA, plenum rated cable 3 ft [1m] LRB120-SR LRX120-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
LRB120-SR	95 seconds
LRX120-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 acc. to UL 60730-1A/-2-14, CAN/CSA E60730-1, CSA C22.2 No. 24-93, CE acc. to 89/336/EEC (and 2006/95/EC for line voltage and/or -S versions)
Noise level	<35 dB(A)
Quality standard	ISO 9001

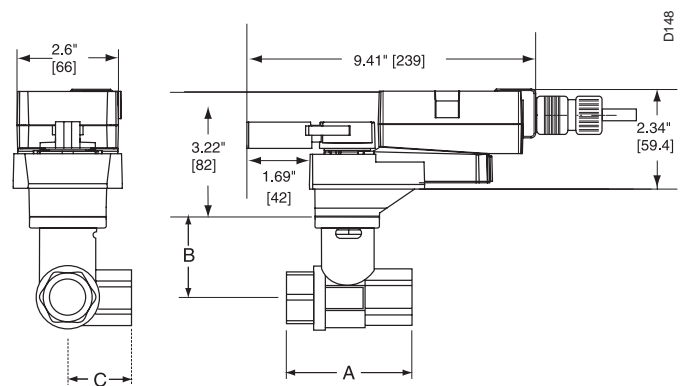
† Rated impulse voltage 4kV, Control pollution degree 3, Type of action 1

## 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-B311	1/2"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312-B315	1/2"	15	2.38" [60.4]	1.72" [43.7]	1.26" [32.1]
B317-B320	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]

K20903 - 04/08 - Subject to change. © Belimo Aircontrols (USA), Inc.

### Wiring Diagrams

#### ✂️ INSTALLATION NOTES



#### **CAUTION** Equipment damage!

Actuators may be connected in parallel.  
Power consumption and input impedance must be observed.



Only connect common to neg. (-) leg of control circuits.



#### APPLICATION NOTES



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.



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.

