

B3 Series, Three Way, Characterized Control Valve Stainless Steel Ball and Stem

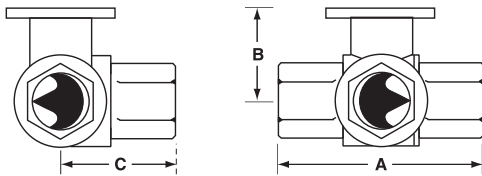


Technical Data

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	½", ¾", 1", 1¼", 1½", 2"
Type of end fitting	NPT female ends
Materials:	
Body	forged brass, nickel plated
Ball	stainless steel
Stem	stainless steel
Seats	PTFE
Characterizing disc	Tefzel®
Packing	2 EPDM O-rings, lubricated
Body pressure rating	
600 psi	½" - 1"
400 psi	1¼" - 2"
Media temp. range	0°F to 250°F [-18°C to 120°C]
Close off pressure	
200 psi	½" - 2"
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 _v rating	A-port: see product chart for values B-port: 70% of A to AB C _v

Tefzel® is a registered trademark of DuPont

Dimensions



3Way Valve-B307-B320

Valve Nominal Size			Dimensions (Inches [mm])		
Valve Body	Inches	DN [mm]	A	B	C
B307-B311	½"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312-B316	½"	15	2.38" [60.4]	1.78" [45.2]	1.29" [32.8]
B317-B321	¾"	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]
B329-B331	1¼"	32	3.96" [100.6]	2.27" [57.7]	2.14" [54.3]
B338-B341	1½"	40	4.39" [111.6]	2.51" [63.7]	2.40" [61.1]
B347-B352	2"	50	4.90" [124.5]	2.73" [69.5]	2.74" [69.7]

Application

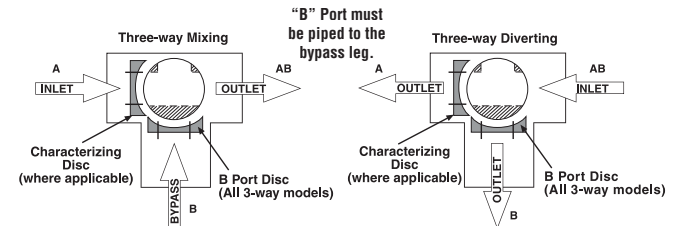
This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable or constant flow.

* (Not for use in change over applications)

Valve Nominal Size			Type	Suitable Actuators	
C _v	Inches	DN [mm]	3-Way NPT	Non-Spring	Spring
0.3	½"	15	B307	TR Series	LR Series NR...N4 Series TF Series LF Series
0.46	½"	15	B308		
0.8	½"	15	B309		
1.2	½"	15	B310		
1.9	½"	15	B311		
3	½"	15	B312		
4.7	½"	15	B313		
10	½"	15	B315		
16	½"	15	B316		
4.7	¾"	20	B317		
7.4	¾"	20	B318	AR Series AR...N4 Series	AF Series
14	¾"	20	B320		
24	¾"	20	B321		
7.4	1"	25	B322		
10	1"	25	B323		
30	1"	25	B325*		
10	1¼"	32	B329		
19	1¼"	32	B330		
25	1¼"	32	B331		
19	1½"	40	B338		
29	1½"	40	B339	AR...N4 Series	AF Series
37	1½"	40	B340		
46	1½"	40	B341		
29	2"	50	B347		
37	2"	50	B348		
46	2"	50	B349		
57	2"	50	B350		
68	2"	50	B351		
83	2"	50	B352		

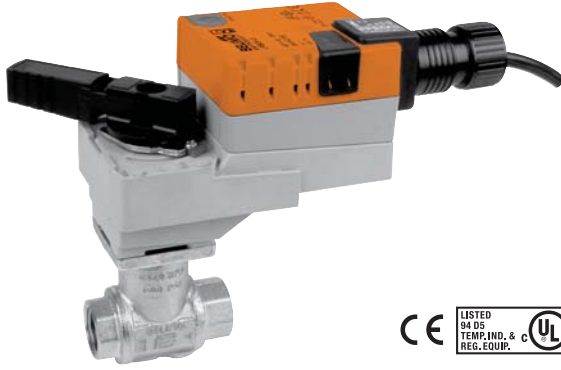
*Models without characterizing disc

Flow Patterns



P10419 - 09/13 - Subject to change. © Belimo Aircontrols (USA), Inc.

LR...24-SR Actuators, Proportional



Models

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

Technical Data

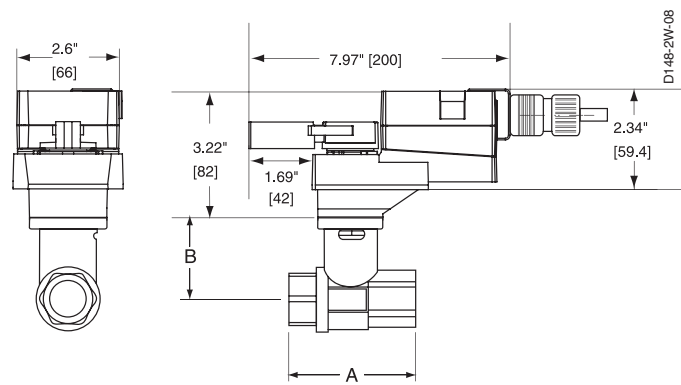
Power supply	24 VAC $\pm$ 20% 50/60 Hz 24 VDC $\pm$ 10%
Power consumption	running 1.5 W holding 0.4 W
Transformer sizing	3 VA (class 2 power source)
Electrical connection	1/2" conduit connector 18 GA, plenum rated cable LRB24-SR 3 ft [1m] LRX24-SR 3 ft [1m], 10 ft [3m], 16 ft [5m]
Overload protection	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 k Ω (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)
-----------------------	--

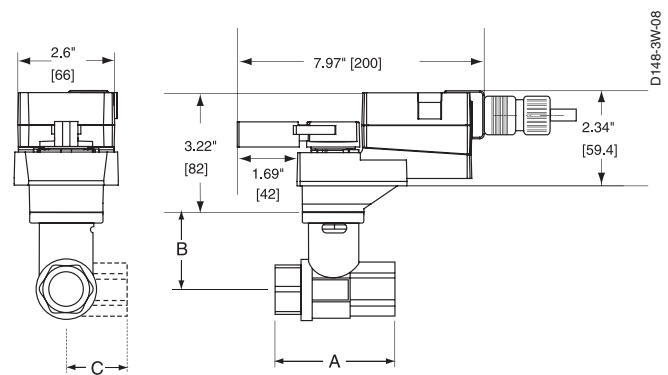
† Rated impulse voltage 800V, Control pollution degree 3, Type of action 1 (1.B for -S models)

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]	1.78" [45.2]
B217(B)-B221(B)	3/4"	20	2.73" [69.3]	1.87" [47.4]
B222-B225	1"	25	3.09" [78.4]	1.87" [47.4]
B229-B231	1 1/4"	32	3.72" [94.6]	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]

050905 - 05/12 - 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.



Actuators may also be powered by 24 VDC.



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.

