

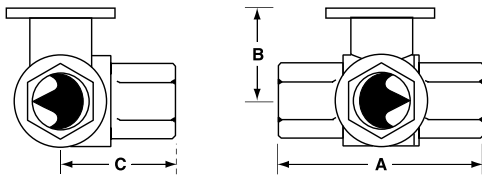
B3 Series, Three Way, Characterized Control Valve Stainless Steel Ball and Stem



Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage B-port modified for constant common port flow
Action	90° rotation
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 212°F [-18°C to 100°C]
Close off pressure	
200 psi	½" - 2"
Maximum differential pressure (ΔP)	30 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



3WayValve-B307-B320

Valve Body	Valve Nominal Size		Dimensions (Inches [mm])		
	Inches	DN [mm]	A	B	C
B307-B311	½"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312-B315	½"	15	2.38" [60.4]	1.78" [45.2]	1.29" [32.8]
B317-B320	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]

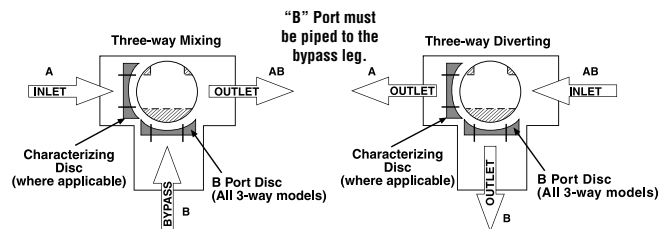
Application

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.

C _v	Valve Nominal Size		Type	Suitable Actuators		
	Inches	DN [mm]	3-Way NPT	Non-Spring	Spring	
0.3	½"	15	B307	TR Series	LR Series	NR...M4 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*			
4.7	¾"	20	B317			
7.4	¾"	20	B318			
24	¾"	20	B320*	TF Series	LF Series	
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			
37	1½"	40	B340			
46	1½"	40	B341	AR Series	AR...M4 Series	
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



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LF24-3 Actuators, Floating Point



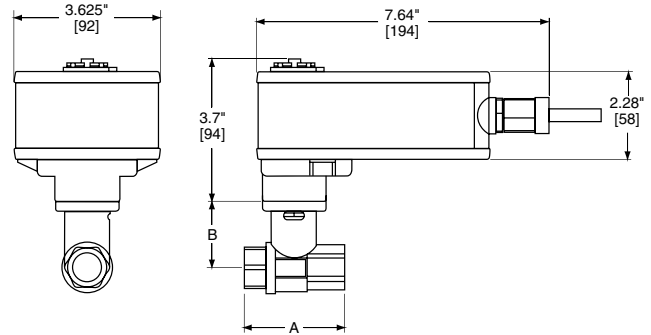
Models

LF24-3 US
LF24-3-S US w/built-in Aux. Switch

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption	running 2.5 W holding 1W
Transformer sizing	5 VA (class 2 power source)
Electrical connection	½" conduit connector (-S models have 2 cables) 3 ft [1m], 18 GA appliance cable
Overload protection	electronic throughout 0° to 95° rotation
Input impedance	1000 Ω (0.6w) control inputs
Angle of rotation	95°
Direction of rotation	spring reversible with CW/CCW mounting motor reversible with built-in ↻/↻ switch
Position indication	visual indicator 0° to 90°
Running time	motor 150 seconds constant independent of load spring <25 seconds @ -4°F to 122°F [-20°C to 50°C] <60 seconds @ -22°F [-30°C]
Humidity	5 to 95% RH non-condensing
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 type 2/IP54
Housing material	zinc coated metal
Agency listings	cULus according to UL 873 and CAN/CSA C22.2 No. 24-93
Noise level (max)	running <30 db(A) spring return 62 db(A)
Servicing	maintenance free
Quality standard	ISO 9001

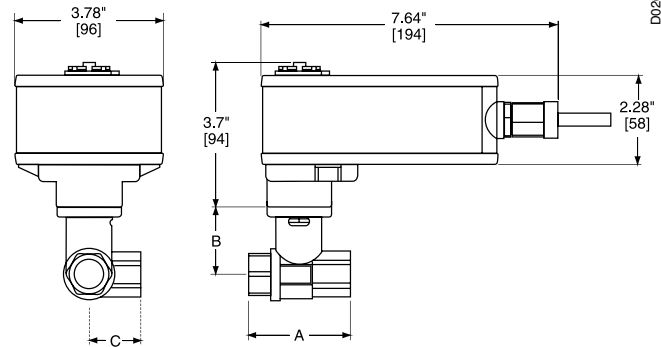
LF24-3-S US	
Auxiliary switch	1 x SPDT, 6A (1.5A) @ 250 VAC, UL Listed, adjustable 0° to 95° (double insulated)

Dimensions with 2-Way Valve



Valve Body	Valve Nominal Size		Dimensions (Inches [mm])	
	Inches	DN [mm]	A	B
B207(B)-B211(B)	½"	15	2.41" [61.1]	1.39" [35.2]
B212(B)-B215(B)	½"	15	2.38" [60.4]	1.78" [45.2]
B217(B)-B220(B)	¾"	20	2.73" [69.3]	1.87" [47.4]
B222-B225	1"	25	3.09" [78.4]	1.87" [47.4]
B229-B230	1¼"	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)	½"	15	2.41" [61.1]	1.39" [35.2]	1.20" [30.6]
B312(B)-B315(B)	½"	15	2.38" [60.4]	1.78" [45.2]	1.29" [32.8]
B317(B)-B320(B)	¾"	20	2.73" [69.3]	1.87" [47.4]	1.47" [37.3]
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Wiring Diagrams

INSTALLATION NOTES

- CAUTION Equipment damage!**
- 2 Actuators may be connected in parallel. Power consumption must be observed.
- 3 Actuators may also be powered by 24 VDC.
- 4 The common connection from the actuator must be connected to the Hot connection of the controller.
- 5 The actuator Hot must be connected to the control board common.
- 6 For end position indication, interlock control, fan startup, etc., LF24-3-S US incorporates one built-in auxiliary switch: 1 x SPDT, 6A (1.5A) @ 250 VAC, UL listed, adjustable 0° to 95°.
- 8 Actuators with plenum rated cable do not have numbers on wires; use color coded instead. Actuators with appliance rated cable use numbers.

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.

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