

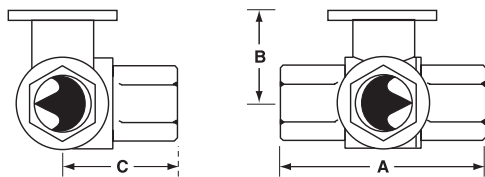


Application

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", 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
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



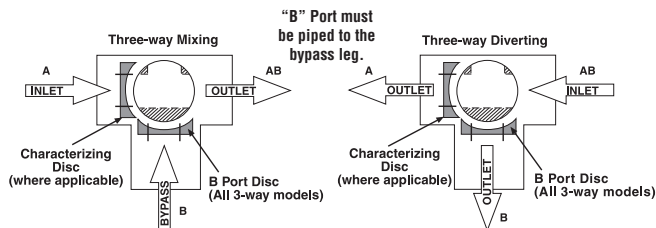
3Way/Valve-B307-B320

Valve 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]	1.72" [43.7]	1.26" [32.1]
B317-B320	¾"	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]
B329-B331	1¼"	32	3.96" [100.6]	2.21" [56.2]	2.14" [54.3]
B338-B341	1½"	40	4.39" [111.6]	2.45" [62.2]	2.33" [59.1]
B347-B352	2"	50	4.90" [124.5]	2.68" [68.0]	2.60" [66.0]

C _v	Valve Nominal Size		Type	Suitable Return Actuators				
	Inches	DN [mm]		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*					
4.7	¾"	20	B317					
24	¾"	20	B320*					
7.4	1"	25	B322	AR Series	AR...N4 Series	AF Series		
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					
29	2"	50	B347	AF Series				
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





Models

TFX24 US TFX120 US
 TFX24-S US TFX120-S US w/built-in Aux. Switch

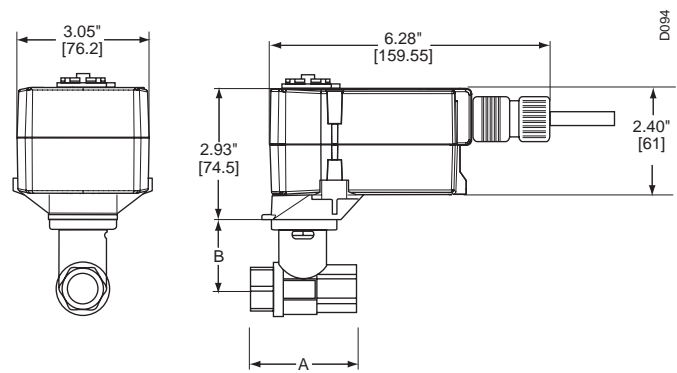
Technical Data	
Control	On/Off
Power supply	
TFX24(-S) US	24VAC ± 20%, 50/60Hz 24VDC ± 10%
TFX120(-S) US	(nominal) 100 to 240 VAC, 50/60 Hz (tolerance) 85 to 265 VAC, 50/60 Hz
Power consumption	running 2.5 W holding 1.3 W
Transformer sizing	
TFX24(-S) US	4 VA (class 2 power source)
TFX120(-S) US	5 VA (class 2 power source)
Electrical connection	1/2" conduit connector 18 GA appliance cable
(-S models have 2 cables)	
TFX... US	3 ft [1m]
TFX... /300 US	10 ft [3m]
TFX... /500 US	16 ft [5m]
Overload protection	electronic throughout 0° to 95° rotation
Angle of rotation	95°
Torque	min. 18 in-lb [2 Nm]
Direction of rotation	reversible with protected mounting
Position indication	visual indicator, 0° to 95°
Running time	motor <75 sec (0 to 18 in-lb) spring <75 sec @ -22°F to 122°F [-20°C to 50°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/IP42
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 (max)	running <40 db (A) spring return <40 dB (A)
Quality standard	ISO 9001

TFX...-S

Auxiliary switch 1 x SPDT, 3A (0.5A) @ 250 VAC, UL Listed
 adjustable 0° to 95°

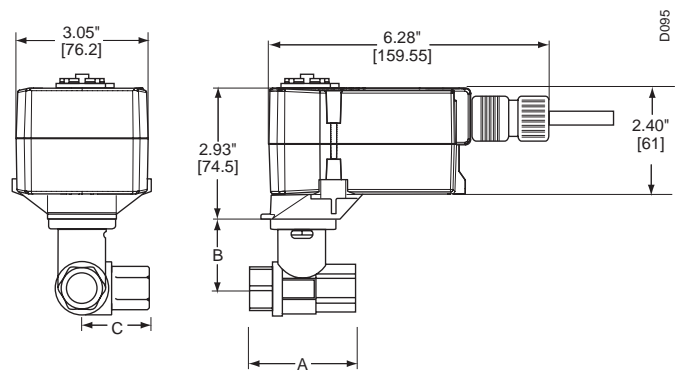
† Rated impulse voltage 800V (4kV for 120V model), Control pollution degree 3,
 Type of action 1.AA (1.AA.B for -S models)

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]

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	2.41" [61.1]	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]

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.



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.

