



### 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 flow.

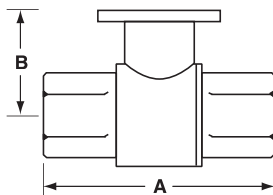
Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	A-port equal percentage
Controllable Flow Range	75°
Sizes	½", ¾"
Type of end fitting	NPT female ends
Materials:	
Body	forged brass, nickel plated
Ball	chrome plated brass
Stem	nickel plated brass
Seats	PTFE
Characterizing disc	Tefzel®
Packing	2 EPDM O-rings, lubricated
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
External leakage	according to EN 12266-1:2003
C <sub>v</sub> rating	A-port: see product chart for values

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Valve Nominal Size			Type	Suitable Actuators			
C <sub>v</sub>	Inches	DN [mm]	2-way NPT	Non-Spring	Spring		
0.3	½	15	B207B	TR Series	LR Series	TF Series	LF Series
0.46	½	15	B208B				
0.8	½	15	B209B				
1.2	½	15	B210B				
1.9	½	15	B211B				
3	½	15	B212B				
4.7	½	15	B213B				
7.4	½	15	B214B				
10	½	15	B215B				
16	½	15	B216B				
4.7	¾	20	B217B	TR Series	LR Series	TF Series	LF Series
7.4	¾	20	B218B				
10	¾	20	B219B				
14	¾	20	B220B				
24	¾	20	B221B*				

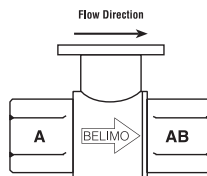
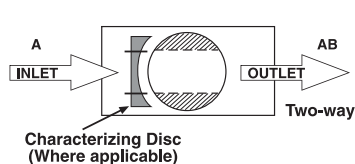
\*Models without characterizing disc

### Dimensions



Valve Nominal Size			Dimensions (Inches [mm])	
Valve Body	Inches	DN [mm]	A	B
B207B-B211B	½"	15	2.38" [60.8]	1.39" [35.2]
B212B-B216B	½"	15	2.38" [60.8]	1.78" [45.2]
B217B-B221B	¾"	20	2.73" [69.3]	1.87" [47.4]

### Flow Patterns



# TR24-3 Actuators, On-Off, Floating Point



## Models

### TR24-3-T US

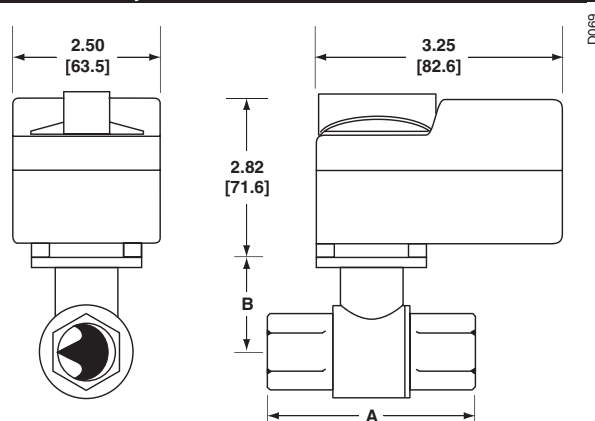
TR24-3 US	TR24-3-T US with 3 ft plenum rated cable
TR24-3/300 US	TR24-3-T US with 10 ft plenum rated cable
TR24-3/500 US	TR24-3-T US with 16 ft plenum rated cable

## Technical Data

Control	on/off, floating point
Nominal voltage	24 VAC 50/60 Hz
Nominal voltage range	19.2...28.8 VAC
Power consumption	1 W
Transformer sizing	1VA (class 2 power source)
Electrical connection	screw terminals accessible after removal of small cover (3 ft, 10 ft, 16 ft cables optional)
Input impedance	0.36 kΩ
Angle of rotation	90°
Position indication	integrated into handle
Manual override	push down handle
Running time	90 seconds @ 60 hz, 108 seconds @ 50 hz
Humidity	5 to 95% 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 1/IP40
Housing rating	UL94-5V(B)
Agency listing†	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	max. 35 db (A)
Quality standard	ISO 9001

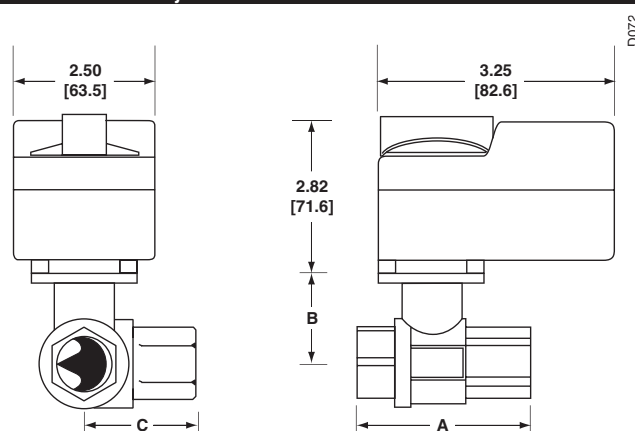
† Rated impulse voltage 330V, Control pollution degree 2, Type of action 1

## Dimensions with 2-Way Valve



Valve Body	Valve Nominal Size		Dimensions (Inches [mm])	
	Inches	DN [mm]	A	B
B207(B)-B211(B)	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)-B221(B)	¾"	20	2.73" [69.3]	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)-B321(B)	¾"	20	2.73" [69.3]	1.87" [47.4]	1.47" [37.3]

### Wiring Diagrams

#### ✂ INSTALLATION NOTES

- 2 The common connection from the actuator must be connected to the Hot connection of the controller.
- 3 Actuators with plenum rated cable do not have numbers on wires; use color codes instead.
- 4 The actuator Hot must be connected to the control board Hot.

**⚠ 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.

**NOTE: TR24-3(-T) US cannot be wired in parallel with themselves or any other actuator.**

