

3-way Mixing/Diverting, Characterized Control Valve, Stainless Steel Ball and Stem



Picture may differ from product



5-year warranty



## Type overview

### Type

B309

### DN

1/2" [15]

## Technical data

<b>Functional data</b>	Valve size [mm]	0.5" [15]
	Fluid	chilled or hot water, up to 60% glycol
	Fluid Temp Range (water)	0...250°F [-18...120°C]
	Body Pressure Rating	600 psi
	Close-off pressure Δps	200 psi
	Flow	A-port: as stated in chart B-port: 70% of A – AB Cv
	Flow characteristic	A-port equal percentage, B-port modified for constant common port flow
	Leakage rate	0% for A – AB, <2.0% for B – AB
	Pipe connection	Internal thread NPT (female)
	Servicing	maintenance-free
	Flow Pattern	3-way Mixing/Diverting
	Controllable flow range	75°
	Cv	0.8
<b>Materials</b>	Valve body	Nickel-plated brass body
	Stem	stainless steel
	Stem seal	EPDM (lubricated)
	Seat	PTFE
	Characterized disc	TEFZEL®
	O-ring	EPDM (lubricated)
	Ball	stainless steel
<b>Suitable actuators</b>	Non Fail-Safe	TR LRB(X) LRQB(X) NRB(X) N4
		Spring
		TFRB(X) LF

## Safety notes



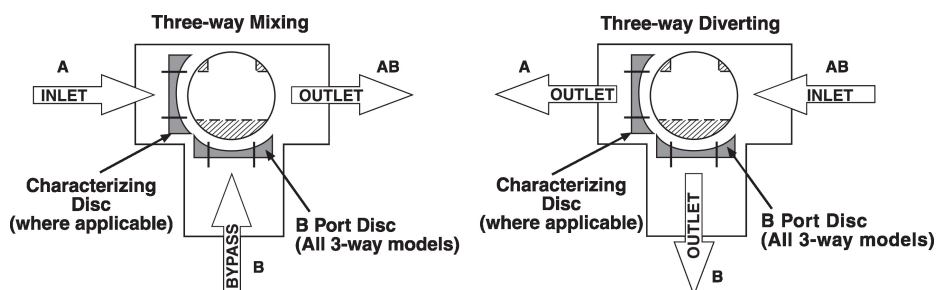
- **WARNING:** This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

## Product features

**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.

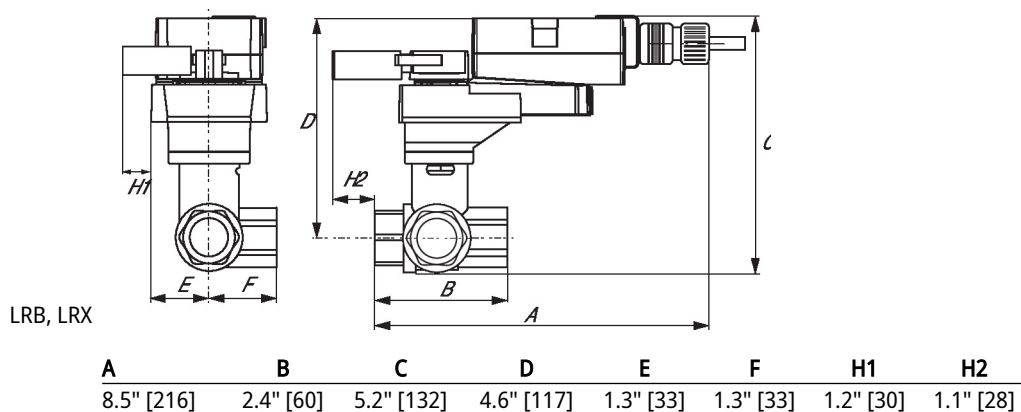
## Flow/Mounting details

This valve is not suitable for use as a change over valve.



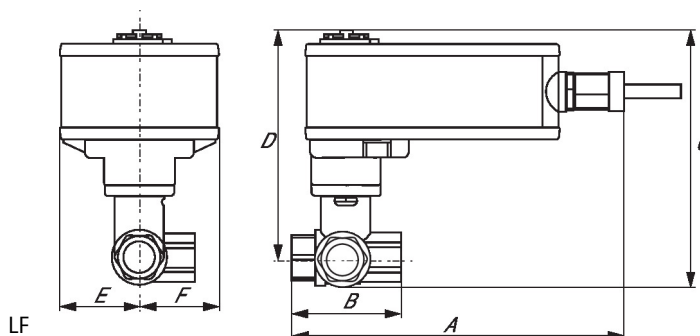
## Dimensions

Type	DN	Weight
B309	1/2" [15]	0.59 lb [0.27 kg]

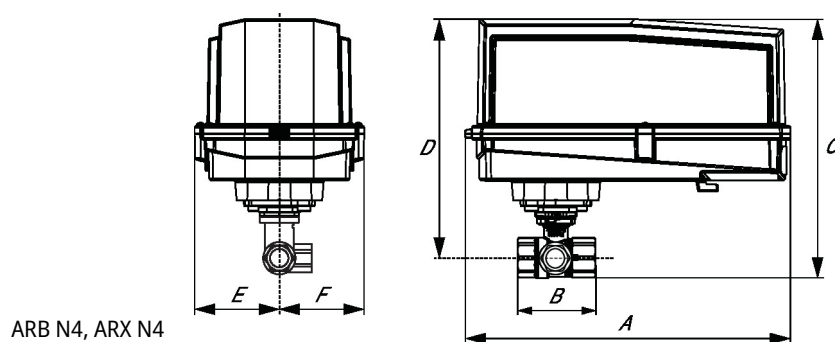


**Dimensions**

A	B	C	D	E	F
3.7" [95]	2.4" [60]	4.8" [122]	4.2" [107]	1.3" [33]	1.2" [31]



A	B	C	D	E	F
7.91" [200]	2.4" [60]	5.7" [146]	5.1" [129]	1.8" [46]	1.8" [46]



A	B	C	D	E	F
11.4" [289]	2.4" [60]	7.2" [184]	6.7" [169]	3.1" [80]	3.1" [80]

On/Off, Floating point, Non fail-safe, 24 V



5-year warranty



## Technical data

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	1.5 W
	Power consumption in rest position	0.2 W
	Transformer sizing	2.5 VA
	Electrical Connection	18 AWG plenum cable, 1 m, with 1/2" NPT conduit connector
	Overload Protection	electronic throughout 0...90° rotation
	Electrical Protection	actuators are double insulated
<b>Functional data</b>	Direction of motion motor	selectable with switch 0/1
	Manual override	external push button
	Angle of rotation	90°
	Angle of rotation note	adjustable with mechanical stop
	Running Time (Motor)	40 s / 90°
	Running time motor note	constant, independent of load
	Noise level, motor	45 dB(A)
	Position indication	Mechanical, pluggable
<b>Safety data</b>	Power source UL	Class 2 Supply
	Degree of protection NEMA/UL	NEMA 2
	Housing	UL Enclosure Type 2
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02 CE acc. to 2014/30/EU and 2014/35/EU
	Quality Standard	ISO 9001
	UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC
	Ambient humidity	Max. 95% RH, non-condensing
	Ambient temperature	-22...122°F [-30...50°C]
	Storage temperature	-40...176°F [-40...80°C]
	Servicing	maintenance-free

<b>Weight</b>	Weight	1.2 lb [0.53 kg]
<b>Materials</b>	Housing material	Galvanized steel and plastic housing
<b>Footnotes</b>	†Rated Impulse Voltage 800V, Type action 1.B, Control Pollution Degree 3.	

## Accessories

Electrical accessories	Description	Type
	Auxiliary switch 1x SPDT add-on	S1A
	Auxiliary switch 2x SPDT add-on	S2A
	Feedback potentiometer 140 $\Omega$ add-on, grey	P140A GR
	Feedback potentiometer 1 k $\Omega$ add-on, grey	P1000A GR
	Feedback potentiometer 10 k $\Omega$ add-on, grey	P10000A GR
	Feedback potentiometer 2.8 k $\Omega$ add-on, grey	P2800A GR
	Feedback potentiometer 500 $\Omega$ add-on, grey	P500A GR
	Feedback potentiometer 5 k $\Omega$ add-on, grey	P5000A GR

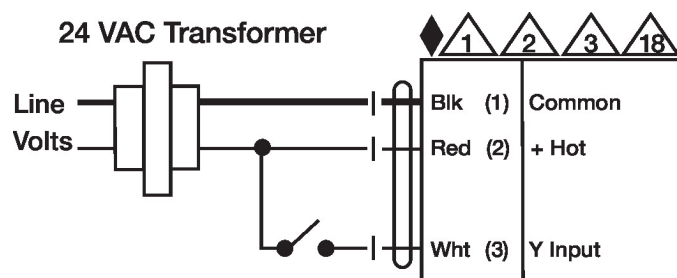
## Electrical installation

### ✂ INSTALLATION NOTES

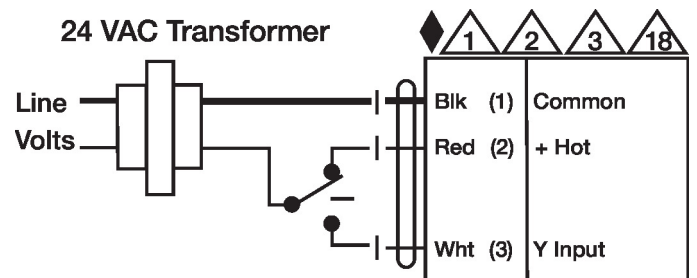
- A** Actuators with appliance cables are numbered.
- 1** Provide overload protection and disconnect as required.
- 3** Actuators may also be powered by DC 24 V.
- 6** Actuators Hot wire must be connected to the control board common. Only connect common to neg. (-) leg of control circuits. Terminal models (-T) have no-feedback.
- 11** Actuators may be connected in parallel if not mechanically linked. Power consumption and input impedance must be observed.
- ◆** Meets cULus 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.

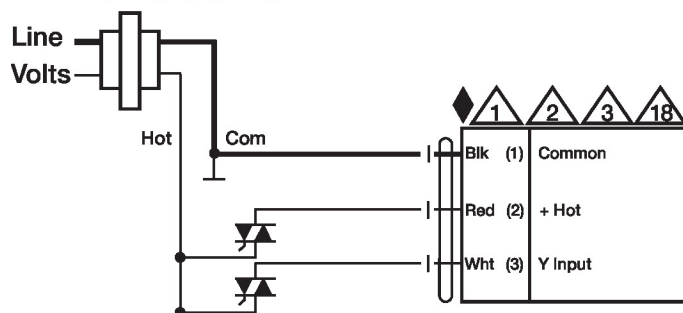
## Wiring diagrams

On/Off



Floating Point



**Electrical installation**
**Wiring diagrams**
**24 VAC Transformer**

**Floating Point - Triac Sink**
**24 VAC Transformer**
