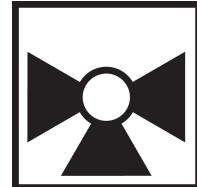


3-way Mixing/Diverting, Characterized Control Valve, Stainless Steel Ball and Stem



5-year warranty



## Type overview

Type	DN
B310	15

## Technical data

Functional data	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	1.2	
Materials	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	
Suitable actuators	Non Fail-Safe	TR LRB(X) LRQB(X) NRB(X) N4
Spring	TFRB(X) LF	

## Safety notes

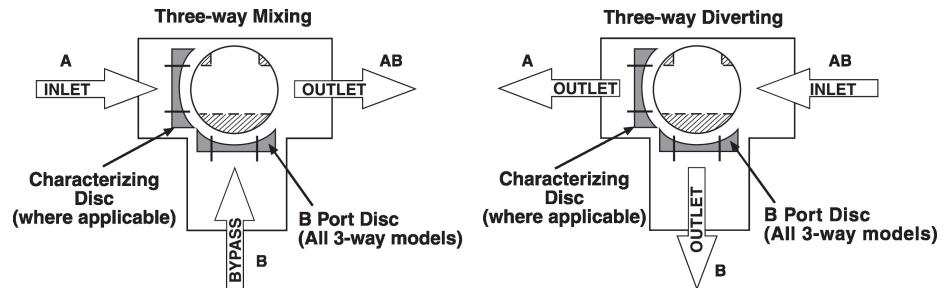


- WARNING: This product can expose you to lead which is known to the State of California to cause cancer and reproductive harm. For more information go to [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

## Product features

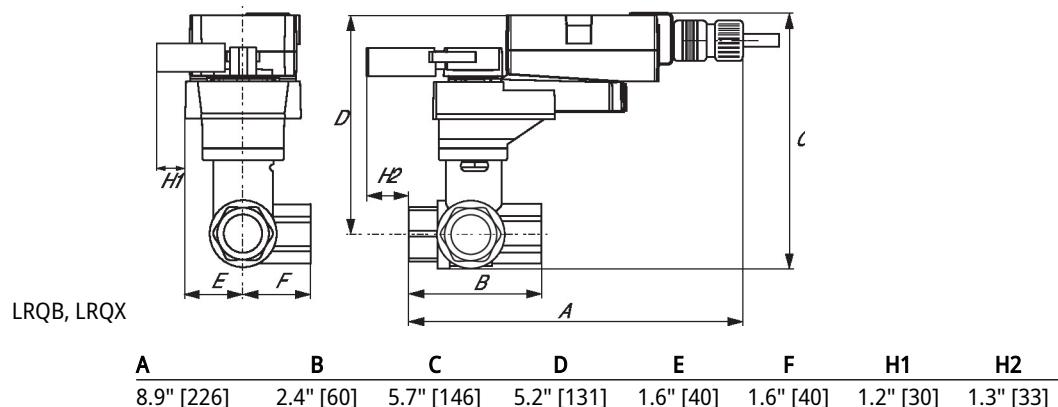
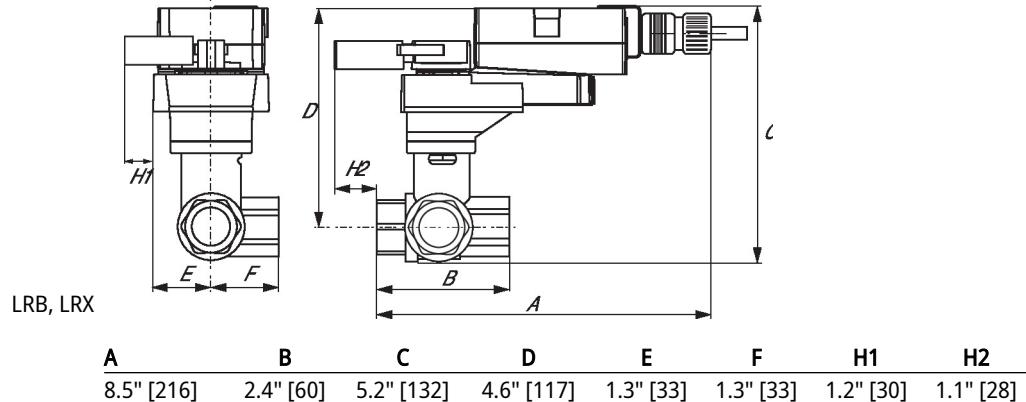
**Application** This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable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

## Flow/Mounting details



## Dimensions

Type	DN	Weight
B310	15	0.59 lb [0.27 kg]



## Dimensions

		D	C	B	A	E	F
TR							
	A	3.7" [95]	2.4" [60]	4.8" [122]	4.2" [107]	1.3" [33]	1.2" [31]
LF							
	A	7.91" [200]	2.4" [60]	5.7" [146]	5.1" [129]	1.8" [46]	1.8" [46]
ARB N4, ARX N4							
	A	11.4" [289]	2.4" [60]	7.2" [184]	6.7" [169]	3.1" [80]	3.1" [80]
TFRB, TFRX							
	A	6.6" [167]	2.4" [60]	4.9" [124]	4.3" [110]	1.5" [39]	1.5" [39]



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	2 W
	Power consumption in rest position	1 W
	Transformer sizing	4 VA
	Electrical Connection	18 GA appliance or plenum cables, 1 m, 3 m or 5 m, with 1/2" NPT conduit connector
	Overload Protection	electronic throughout 0...95° rotation
<b>Functional data</b>	Operating range Y	2...10 V
	Operating range Y note	4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
	Input impedance	100 kΩ for 2...10 V (0.1 mA), 500 Ω for 4...20 mA
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.5 mA
	Direction of motion motor	selectable with switch 0/1
	Direction of motion fail-safe	reversible with cw/ccw mounting
	Angle of rotation	Max. 95°
	Angle of rotation note	adjustable with mechanical stop
	Running Time (Motor)	95 s
	Running time fail-safe	<25 s @ 20°C
	Noise level, motor	35 dB(A)
	Noise level, fail-safe	62 dB(A)
	Position indication	Mechanical
<b>Safety data</b>	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP42
	Degree of protection NEMA/UL	NEMA 2
	Enclosure	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	1.3 lb [0.59 kg]

Materials

Housing material

UL94-5VA

Footnotes <sup>†</sup>Rated Impulse Voltage 800V, Type of action 1.AA, Control Pollution Degree 3

## Electrical installation

### INSTALLATION NOTES

-  Provide overload protection and disconnect as required.
-  Actuators may be connected in parallel. Power consumption and input impedance must be observed.
-  Actuators may also be powered by DC 24 V.
-  Only connect common to negative (-) leg of control circuits.
-  A 500  $\Omega$  resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
-  Actuators with plenum cable do not have numbers; use color codes instead.
-  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

2...10 V / 4...20 mA Control

