

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



5-year warranty



### Type overview

<b>Type</b>	<b>DN</b>
B311	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 $\Delta$ ps	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	1.9
	<b>Materials</b>	Valve 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

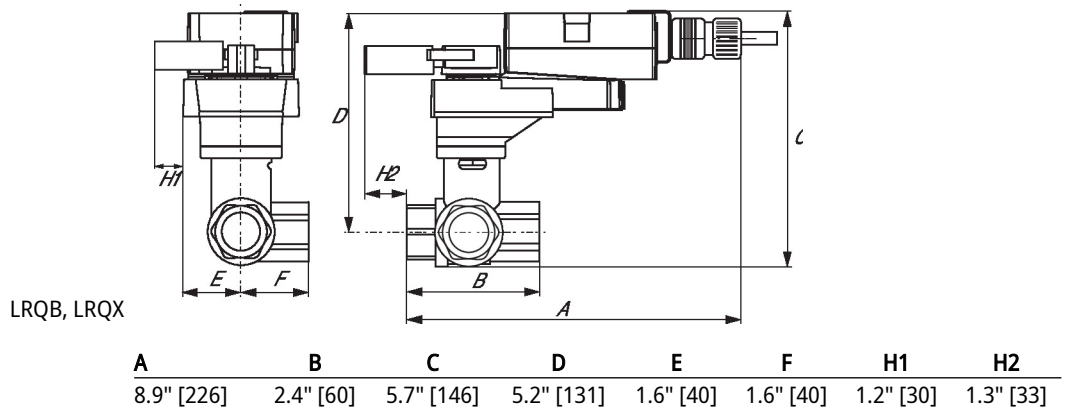
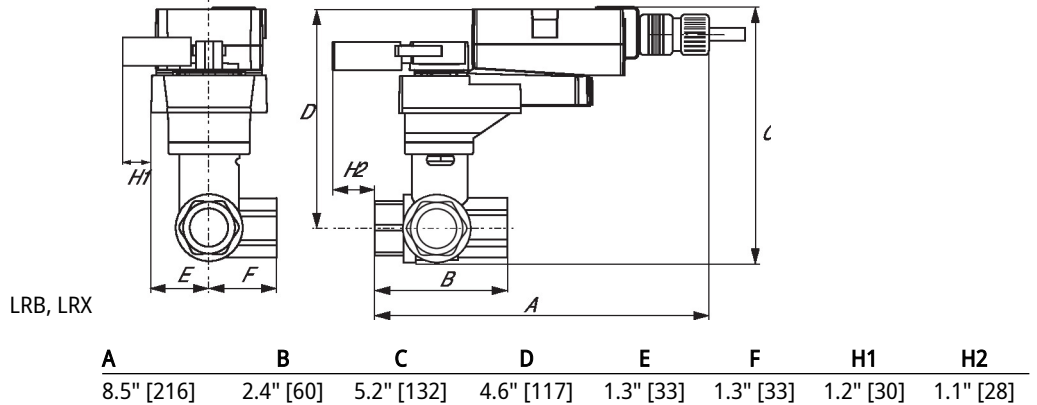
**Application** This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable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

Flow/Mounting details

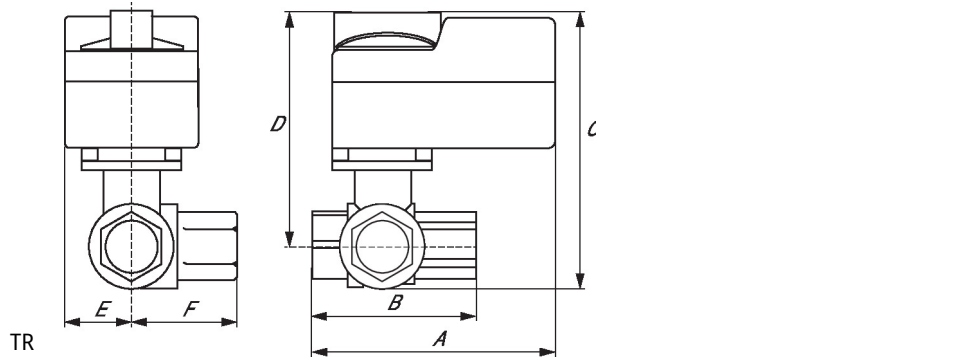


Dimensions

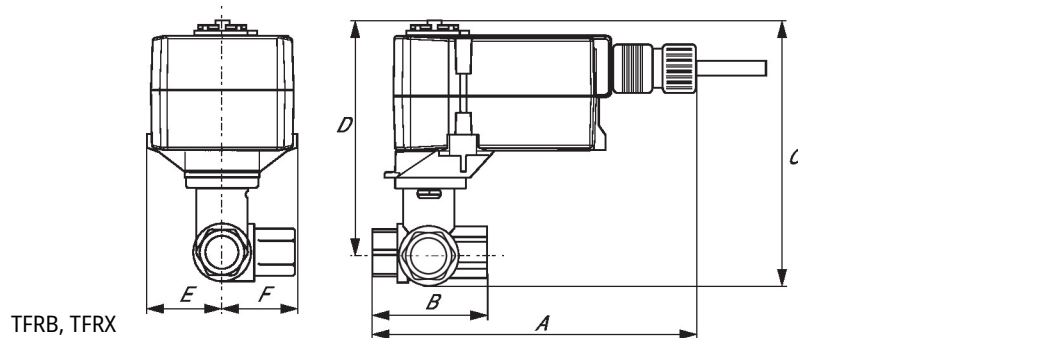
Type	DN	Weight
B311	15	0.59 lb [0.27 kg]



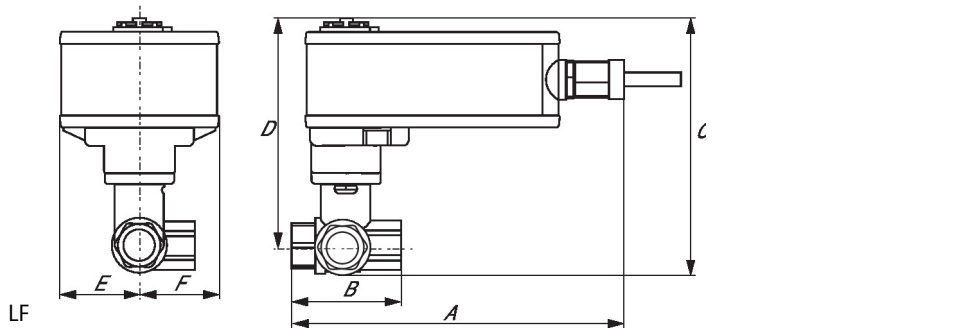
Dimensions



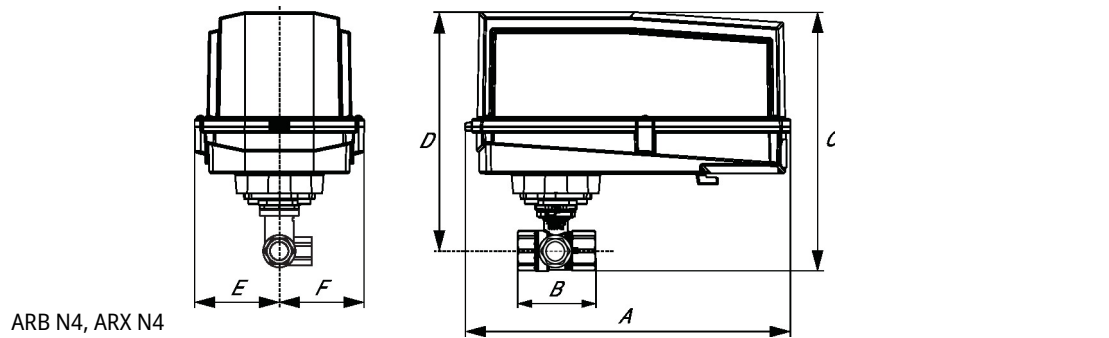
A	B	C	D	E	F
3.7" [95]	2.4" [60]	4.8" [122]	4.2" [107]	1.3" [33]	1.2" [31]



A	B	C	D	E	F
6.6" [167]	2.4" [60]	4.9" [124]	4.3" [110]	1.5" [39]	1.5" [39]



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]



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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	2.5 W
	Power consumption in rest position	1 W
	Transformer sizing	4 VA
	Auxiliary switch	1x SPDT, 1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V, adjustable 0...95°
	Switching capacity auxiliary switch	1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V
	Electrical Connection	(2) 18 GA appliance cables, 1 m, with 1/2" NPT conduit connectors
	Overload Protection	electronic throughout 0...95° rotation
<b>Functional data</b>	Position feedback U note	No Feedback
	Direction of motion motor	selectable with switch 0/1
	Direction of motion fail-safe	reversible with cw/ccw mounting
	Angle of rotation	Max. 95°
	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
<b>Materials</b>		Housing material

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

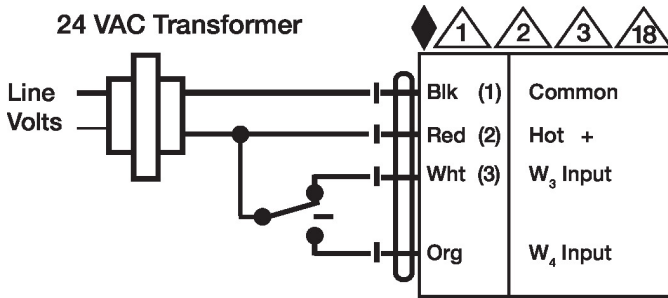
**Electrical installation**

**✂ INSTALLATION NOTES**

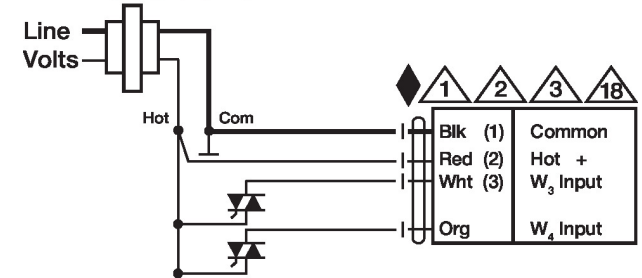
- Ⓐ Actuators with appliance cables are numbered.
- ⚠️ Provide overload protection and disconnect as required.
- ⚠️ Actuators may be connected in parallel. Power consumption and input impedance must be observed.
- ⚠️ Actuators may also be powered by DC 24 V.
- ⚠️ Actuators Hot wire must be connected to the control board common. Only connect common to neg. (-) leg of control circuits. Terminal models (-T) have no-feedback.
- ⚠️ One built-in auxiliary switch (1x SPDT), for end position indication, interlock control, fan startup, etc.
- ⚡ Apply only AC line voltage or only UL-Class 2 voltage to the terminals of auxiliary switches. Mixed or combined operation of line voltage/safety extra low voltage is not allowed.
- ◆ 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**

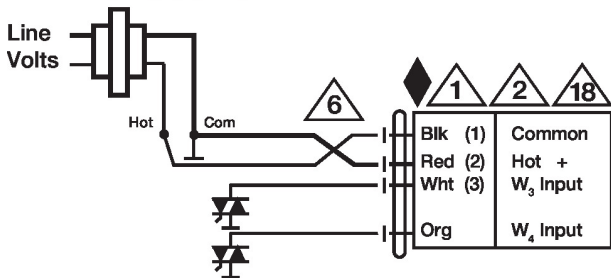
Floating Point



Floating Point - Triac Source  
24 VAC Transformer



Floating Point - Triac Sink  
24 VAC Transformer



Auxiliary Switches

