Technical data sheet B311B

3-way Mixing/Diverting, Characterized Control Valve, Chrome Plated Brass Ball and Nickel Plated Brass Stem



Picture may differ from product

5-year warranty

Type overview

Type	DN
B311B	1/2" [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	1.9
Materials	Valve body	Nickel-plated brass body
	Stem	nickel-plated brass
	Stem seal	EPDM (lubricated)
	Seat	PTFE
	Characterized disc	TEFZEL®
	O-ring	EPDM (lubricated)
	Ball	chrome plated brass
Suitable actuators	Non Fail-Safe	TR LRB(X)
	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

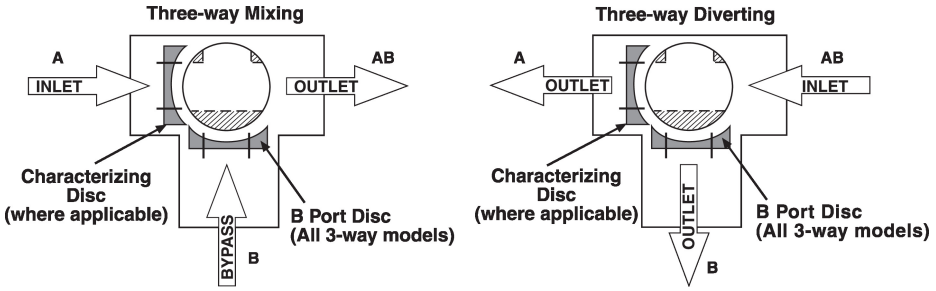
Product features

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

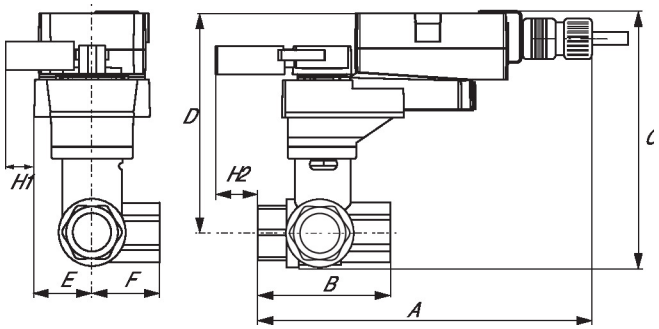
This valve is not suitable for use as a change over valve.



Dimensions

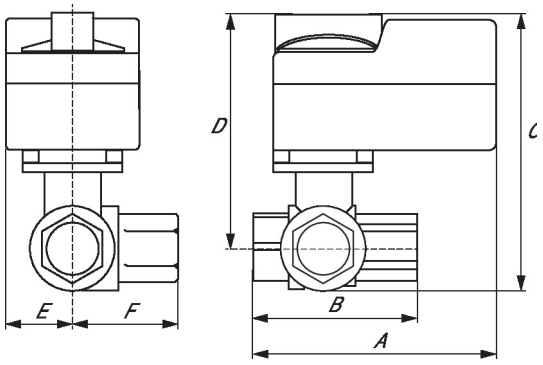
Type	DN	Weight
B311B	1/2" [15]	0.59 lb [0.27 kg]

LRB, LRX



A	B	C	D	E	F	H1	H2
8.5" [216]	2.4" [60]	5.2" [132]	4.6" [117]	1.3" [33]	1.3" [33]	1.2" [30]	1.1" [28]

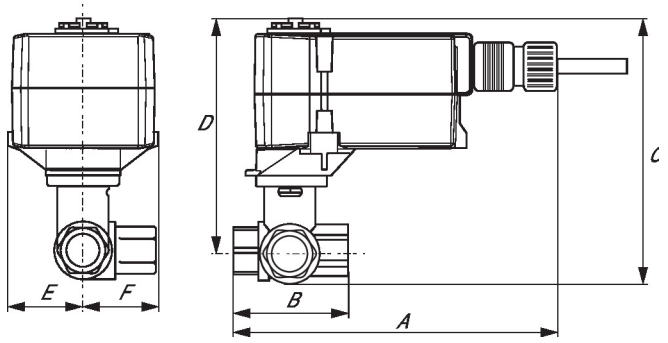
TR



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

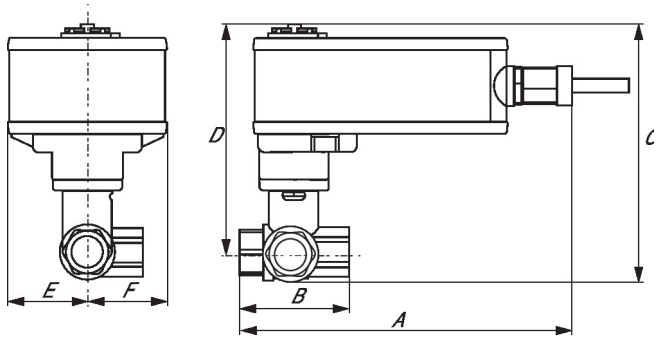
Dimensions

TFRB, TFRX



A	B	C	D	E	F
6.6" [167]	2.4" [60]	4.9" [124]	4.3" [110]	1.5" [39]	1.2" [31]

LF



A	B	C	D	E	F
7.91" [200]	2.4" [60]	5.7" [146]	5.1" [129]	1.8" [46]	1.9" [48]

Modulating, Non fail-safe, 24 V



5-year warranty

Technical data

Electrical data	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	0.5 W
	Transformer sizing	1 VA
	Electrical Connection	18 AWG plenum cable, 1 m
	Overload Protection	electronic throughout full rotation
Functional data	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
	Direction of motion motor	selectable with switch
	Manual override	push down handle
	Angle of rotation	90°
	Running Time (Motor)	90 s / 90°
	Noise level, motor	35 dB(A)
	Position indication	integrated into handle
Safety data	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP40
	Degree of protection NEMA/UL	NEMA 1
	Housing	UL Enclosure Type 1
	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

Weight	Weight	0.61 lb [0.28 kg]

Footnotes Rated impulse voltage 500 V, control pollution degree 2, type of action 1.
NOTE: Response sensitivity is 75 mV

Electrical installation

INSTALLATION NOTES

1 Provide overload protection and disconnect as required.

3 Actuators may also be powered by DC 24 V.

5 Only connect common to negative (-) leg of control circuits.

7 A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.

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

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

