B315B Technical Data Sheet

Chrome Plated Brass Ball and Nickel Plated Brass Stem

5-year warranty

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.

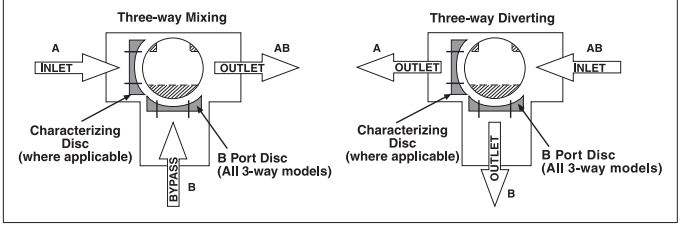
Suitable Actuators

	Non-Spring	Spring
B315B	TR, LRB(X)	TFB(X), LF

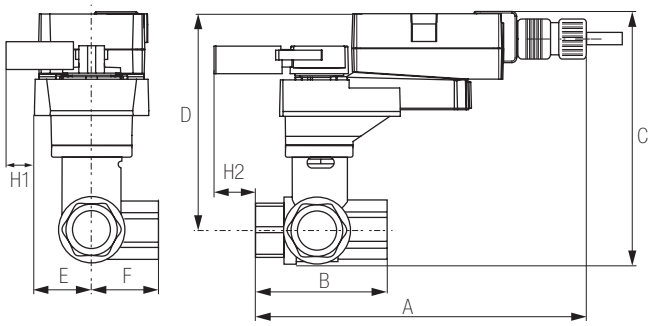
Technical Data

Fluid	chilled, hot water, up to 60% glycol
Flow characteristic	A-port Equal percentage; B-port modified linear for constant flow
Controllable flow range	75°
Valve Size [mm]	0.5" [15]
Pipe connection	NPT female ends
Housing	Nickel-plated brass body
Ball	chrome plated brass
Stem	nickel-plated brass
Stem seal	EPDM (lubricated)
Seat	PTFE
O-ring	EPDM (lubricated)
Characterized disc	TEFZEL®
Body Pressure Rating	600 psi
Close-off pressure Δps	200 psi
Cv	10
Weight	0.66 lb [0.30 kg]
Fluid Temp Range (water)	0...250°F [-18...120°C]
Leakage rate	0% for A – AB, <2.0% for B – AB
Servicing	maintenance-free

Flow/Mounting Details



Dimensions (Inches [mm])



LRB, LRX

A	B	C	D	E	F	H1	H2
8.5" [216]	2.4" [60]	5.2" [132]	5.0" [127]	1.3" [33]		1.2" [30]	1.1" [28]

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

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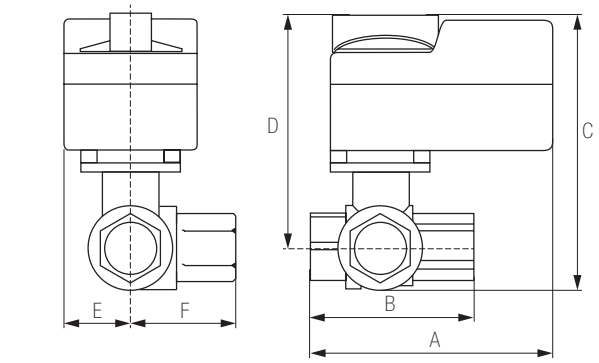
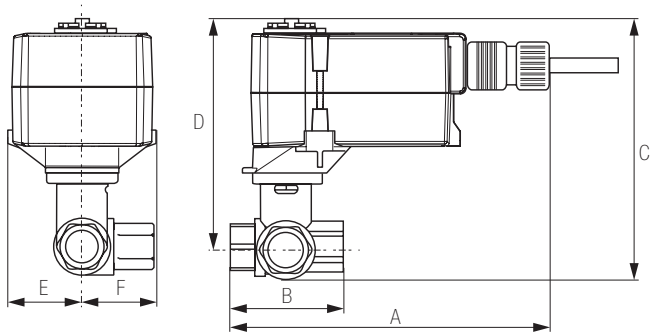
Dimensions (Inches [mm])



TR

A	B	C	D	E	F
3.7” [95]	2.4” [60]	5.2” [132]	4.6” [117]	1.3” [33]	

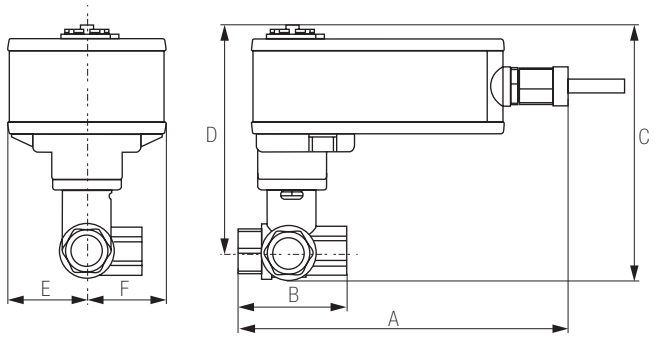
Dimensions (Inches [mm])



TFRB, TFRX

A	B	C	D	E	F
6.6” [167]	2.4” [60]	4.9” [124]	4.7” [120]	1.5” [39]	1.3” [33]

Dimensions (Inches [mm])



LF

A	B	C	D	E	F
7.9” [200]	2.4” [60]	6.1” [154]	5.5” [140]	1.8” [46]	1.9” [48]

TFRB24-SR-S Technical Data Sheet

Modulating, Spring Return, AC 24 V for DC 2…10 V or 4…20 mA Control Signal

5-year warranty

Technical Data	
Power Supply	24 VAC, ±20%, 50/60 Hz, 24 VDC, ±10%
Power consumption in operation	2 W
Power consumption in rest position	1 W
Transformer sizing	4 VA (class 2 power source)
Electrical Connection	(2) 18 GA appliance cables with 1/2" conduit connectors, 3 ft [1 m],
Overload Protection	electronic throughout 0...95° rotation
Operating Range	2...10 V, 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	2...10 V, Max. 0.5 mA
Angle of rotation	Max. 95°, 90°
Torque motor	22 in-lb [2.5 Nm]
Direction of rotation motor	reversible with built-in switch
Direction of motion fail-safe	reversible with cw/ccw mounting
Position indication	Mechanical
Running Time (Motor)	95 s
Running time fail-safe	<25 s
Ambient humidity	max. 95% r.H., non-condensing
Ambient temperature	-22...122°F [-30...50°C]
Storage temperature	-40...176°F [-40...80°C]
Degree of Protection	IP42, NEMA 2, UL Enclosure Type 2
Housing material	UL94-5VA
Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2004/108/EC and 2006/95/EC
Noise level, motor	35 dB(A)
Noise level, fail-safe	62 dB(A)
Servicing	maintenance-free
Quality Standard	ISO 9001
Weight	1.8 lb [0.80 kg]
Auxiliary switch	1 x SPDT, 3 A resistive (0.5 A inductive) @ AC 250 V, adjustable 0...95°

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

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Wiring Diagrams

INSTALLATION NOTES

1 Provide overload protection and disconnect as required.

2 Actuators may be connected in parallel. Power consumption and input impedance must be observed.

3 Actuators may also be powered by 24 VDC.

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

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

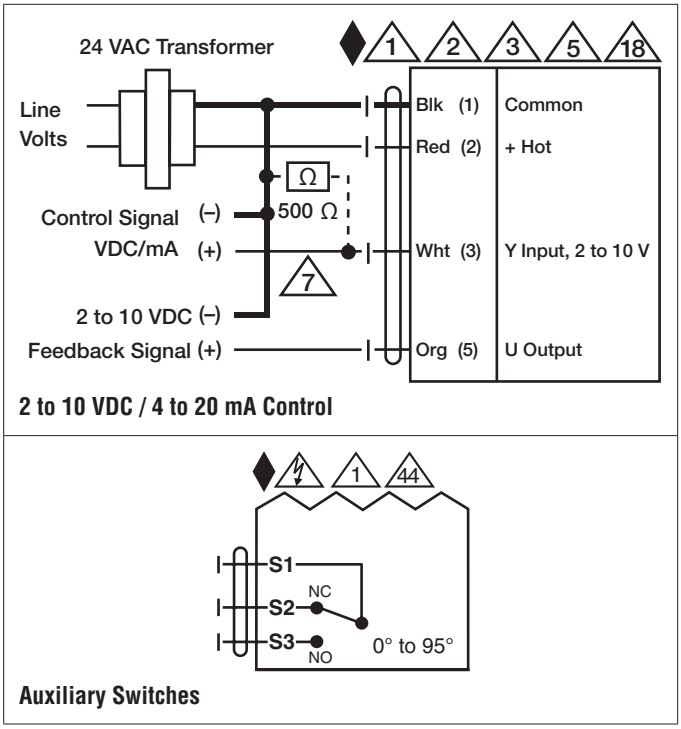
44 One built-in auxiliary switch (1x SPDT), for end position indication, interlock control, fan startup, etc.

Meets cULus requirements without the need of an electrical ground connection.

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.

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.



2 to 10 VDC / 4 to 20 mA Control

Auxiliary Switches