B316B 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.

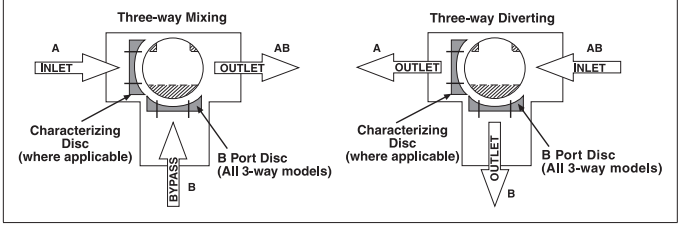
Suitable Actuators

	Non-Spring	Spring
B316B	TR, LRB(X), NR	TFRB(X), LF

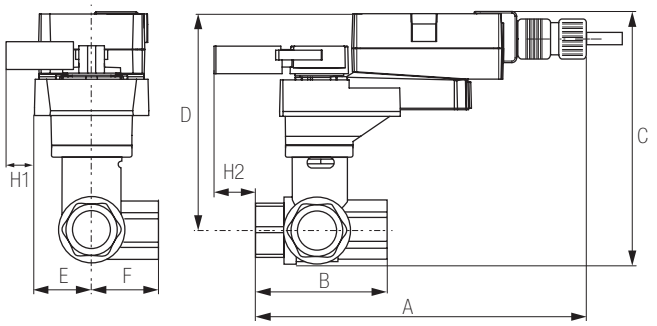
Technical Data

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)
Characterised disc	No Disc (full flow)
Body Pressure Rating	600 psi
Close-off pressure Δps	200 psi
Cv	16
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
Maintenance	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: For Belimo products sold in California: these products do or may contain chemicals which are known to the State of California to cause cancer and or birth defects or other reproductive harms. For more information see www.p65warnings.ca.gov.

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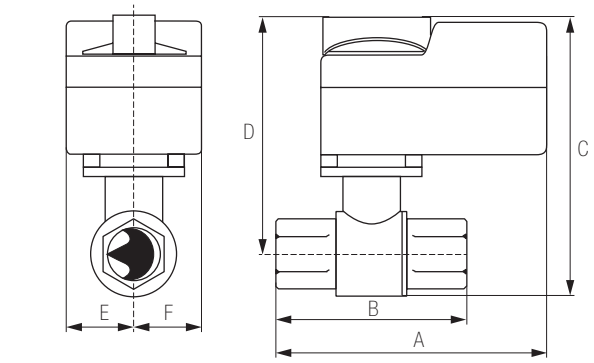
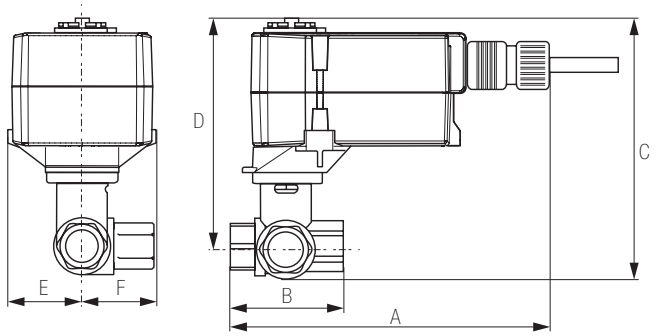
Dimensions (Inches [mm])



TR

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

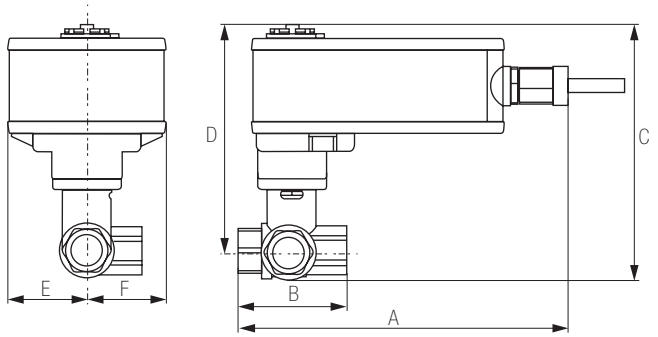
Dimensions (Inches [mm])



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]

LF24-SR US, Valve Actuator 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	2.5 W
Power consumption in rest position	1 W
Transformer sizing	5 VA (class 2 power source)
Electrical Connection	18 GA plenum cable, 3 ft [1 m], with 1/2" conduit connector
Overload Protection	electronic throughout 0...95° rotation
Operating Range	DC 2...10 V, 4...20 mA w/ ZG-R01 (500 Ω, 1/4 W resistor)
Input Impedance	100 kΩ for DC 2...10 V (0.1 mA), 500 Ω for 4...20 mA
Position Feedback	DC 2...10 V, Max. 0.7 mA
Angle of rotation	90°
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)	150 s constant, independent of load
Running time fail-safe	<25 s @ -4...122°F [-20...50°C], <60 s @ -22°F [-30°C]
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	IP54, NEMA 2
Agency Listing	cULus acc. To UL 873 and CAN/CSA C22.2 No. 24-93
Noise level, motor	50 dB(A)
Noise level, fail-safe	62 dB(A)
Maintenance	maintenance-free
Quality Standard	ISO 9001
Weight	3.1 lbs (1.40 kg.)

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

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LF24-SR US, Valve Actuator Technical Data Sheet

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

Wiring Diagrams

INSTALLATION NOTES

(A) Actuators with appliance cables are numbered.

1 Provide overload protection and disconnect as required.

3 Actuators may also be powered by 24 VDC.

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

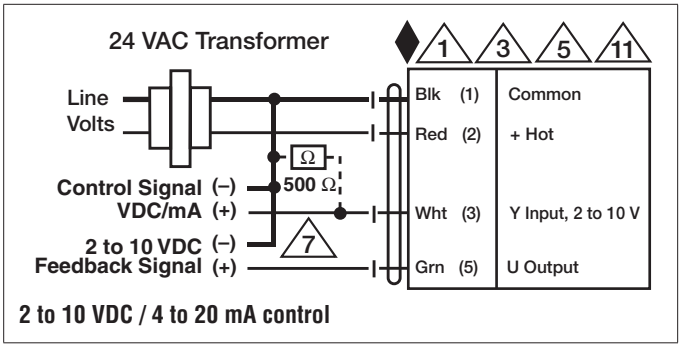
7 A 500 Ω resistor (ZG-R01) converts the 4 to 10 mA control signal to 2 to 10 VDC.

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.



2 to 10 VDC / 4 to 20 mA control