

Chrome Plated Brass Ball and Nickel Plated Brass Stem









Technical data

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Valve Size	0.5" [15]
Fluid	chilled or hot water, up to 60% glycol
Fluid Temp Range (water)	0250°F [-18120°C]
Body Pressure Rating	600 psi
Body pressure rating note	600 psi
Close-off pressure Δps	200 psi
Flow characteristic	A-port Equal percentage; B-port modified linear for constant flow
Servicing	maintenance-free
Flow Pattern	3-way Mixing/Diverting
Leakage rate	0% for A – AB, <2.0% for B – AB
Controllable flow range	75°
Cv	1.2
Cv Flow Rating	A-port: as stated in chart B-port: 70% of A – AB Cv
Valve body	Nickel-plated brass body
Stem	nickel-plated brass
Stem seal	EPDM (lubricated)
Seat	PTFE
Characterizing disk	TEFZEL®
Pipe connection	NPT female ends
O-ring	EPDM (lubricated)
Ball	chrome plated brass
Non-Spring	TR LRB(X)

Safety notes



Spring

Suitable actuators

Materials

 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

TFB(X) LF

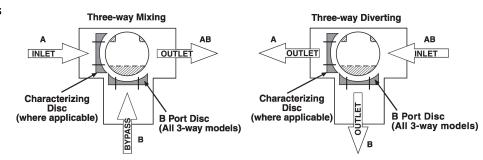
Product features

Application

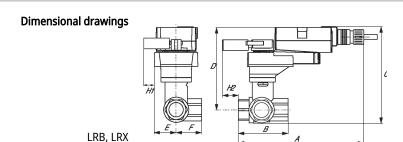
This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include Unit Ventilators, VAV box reheat coils and bypass loops. This valve is suitable for use in a hydronic system with variable or constant flow.



Flow/Mounting details

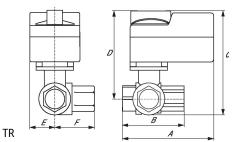


Dimensions



8.5" [216]

5.2" [132]



2.4" [60]

 A
 B
 C
 D
 E
 F

 3.7" [95]
 2.4" [60]
 4.8" [122]
 4.2" [107]
 1.3" [33]
 1.2" [31]

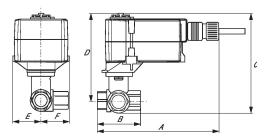
4.6" [117]

1.3" [33]

1.3" [33]

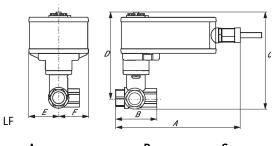
1.2" [30]

1.1" [28]



TFRB, TFRX

Α	В	С	D	E	F
6.6" [167]	2.4" [60]	4.9" [124]	4.3" [110]	1.5" [39]	1.2" [31]



 A
 B
 C
 D
 E
 F

 7.9" [200]
 2.4" [60]
 5.7" [146]
 5.1" [129]
 1.8" [46]
 1.9" [48]

Modulating, Non-Spring Return, 24 V, for DC 2...10 V or 4...20 mA



Technical data sheet





Technical data		
Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Power consumption in operation	1.5 W
	Power consumption in rest position	0.4 W
	Power consumption for wire sizing	3 VA
	Transformer sizing	3 VA (class 2 power source)
	Electrical Connection	18 GA plenum cable, 3 ft [1 m], with 1/2" conduit connector
	Overload Protection	electronic thoughout 090° rotation
Functional data	Operating range Y	210 V
	Operating range Y note	420 mA w/ ZG-R01 (500 Ω , 1/4 W resistor)
	Input Impedance	100 k Ω for 210 V (0.1 mA), 500 Ω for 420 mA
	Position feedback U	210 V
	Position feedback U note	Max. 1 mA
	Direction of motion motor	selectable with switch 0/1
	Manual override	external push button
	Angle of rotation	90°
	Angle of rotation note	adjustable with mechanical stop
	Running Time (Motor)	90 s
	Noise level, motor	35 dB(A)
	Position indication	Mechanically, pluggable
Safety data	Degree of protection IEC/EN	IP54
	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 Listed to UL 2043 - suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC
	Quality Standard	ISO 9001
	Ambient temperature	-22122°F [-3050°C]
	Storage temperature	-40176°F [-4080°C]
	Ambient humidity	Max. 95% RH, non-condensing
	Servicing	maintenance-free
Moight	MARCOLIA.	4.4 11, 50.50 1.3

Product features

Mode of operation Local Control SY2~12, 24vac Mod

Weight

Weight

1.1 lb [0.50 kg]



Home position

Accessories

Electrical accessories	Description	Туре	
	Battery backup system, for non-spring return models	NSV24 US	
	Battery, 12 V, 1.2 Ah (two required)	NSV-BAT	
	Auxiliary switch 1 x SPDT add-on	S1A	
	Auxiliary switch 2 x SPDT add-on	S2A	
	Feedback potentiometer 140 Ω add-on, grey	P140A GR	
	Feedback potentiometer 1 kΩ add-on, grey	P1000A GR	
	Feedback potentiometer 10 kΩ add-on, grey	P10000A GR	
	Feedback potentiometer 2.8 kΩ add-on, grey	P2800A GR	
	Feedback potentiometer 500 Ω add-on, grey	P500A GR	
	Feedback potentiometer 5 k Ω add-on, grey	P5000A GR	

Electrical installation

INSTALLATION NOTES

1 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.

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

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

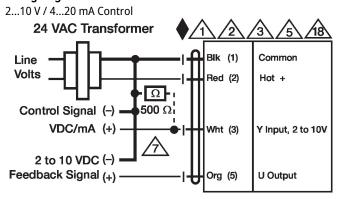
Actuators with plenum cable do not have numbers; use color codes instead.

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

Marning! 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



Dimensions