







#### **Technical data**

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Valve Size	0.75" [20]		
Fluid	chilled or hot water, up to 60% glycol		
Fluid Temp Range (water)	0250°F [-18120°C]		
Body Pressure Rating	600 psi		
Close-off pressure Δps	200 psi		
Flow characteristic	equal percentage		
Servicing	maintenance-free		
Flow Pattern	2-way		
Leakage rate	0% for A – AB		
Controllable flow range	75°		
Cv 10			
Body pressure rating note	600 psi		
Cv Flow Rating	A-port: as stated in chart B-port: 70% of A – AB Cv		
Valve body	Nickel-plated brass body		
Stem seal	EPDM (lubricated)		
Seat	PTFE		
Pipe connection	NPT female ends		

# Materials

Valve body	Nickel-plated brass body	
Stem seal	EPDM (lubricated)	
Seat	PTFE	
Pipe connection	NPT female ends	
0-ring	EPDM (lubricated)	
Ball	stainless steel	
Non-Spring	TR LRB(X)	

#### Safety notes



**Suitable actuators** 

 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

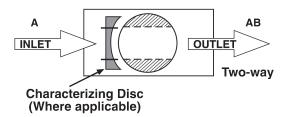
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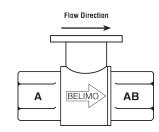
#### **Product features**

### **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 flow.

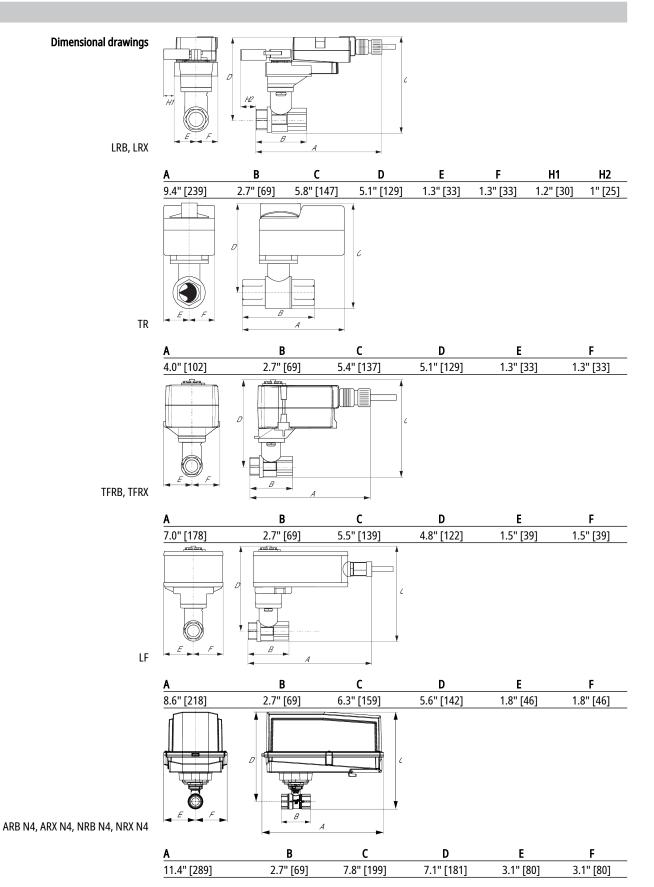
# Flow/Mounting details



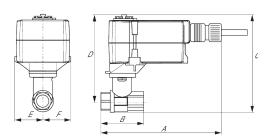




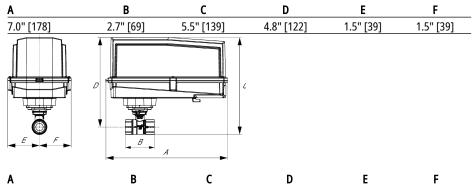
# **Dimensions**







TFRB, TFRX



ARB N4, ARX N4, NRB N4, NRX N4

A	В	C	D	E	F
11.4" [289]	2.7" [69]	7.8" [199]	7.1" [181]	3.1" [80]	3.1" [80]



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







al 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
	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 $\Omega$ for 210 V (0.1 mA), 500 $\Omega$ for 420 mA
	Position feedback U	210 V
	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 UL Enclosure Type 2
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02, CE acc. to 2014/30/EU
	Quality Standard	ISO 9001
	Ambient temperature	-22122°F [-3050°C]
	Storage temperature	-40176°F [-4080°C]
	Ambient humidity	max. 95% r.H., non-condensing
	Servicing	maintenance-free

# Safety notes



Weight

Weight

• Weather shield - PC w/ foam seal 16x8-3/8x4" (LxWxD).

1.1 lb [0.50 kg]

- Classic GM to GMB(X) retrofit bracket.
- Battery Back Up System for SY(7~10)-110
- 120 to 24 VAC, 40 VA transformer.
- Cable for ZTH US to actuators w/o diagnostics socket.
- PC Tool computer programming interface, serial port.

#### **Electrical installation**

Technical data sheet LRB24-SR

# > INSTALLATION NOTES

<u>1</u> 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 24 VDC.

 $\frac{1}{5}$  Only connect common to negative (-) leg of control circuits.

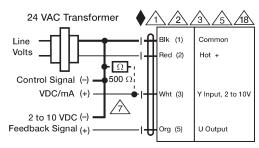
 $\Lambda$  A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.

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

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

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