









## **Technical data**

E.	nction	A 4-	+-
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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		
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	3		
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		
O-ring	EPDM (lubricated)		
Ball	stainless steel		

Safety notes



**Suitable actuators** 

Non-Spring

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

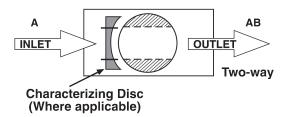
TR LRB(X) NR

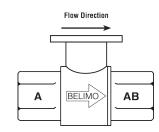
# **Product features**

# **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.

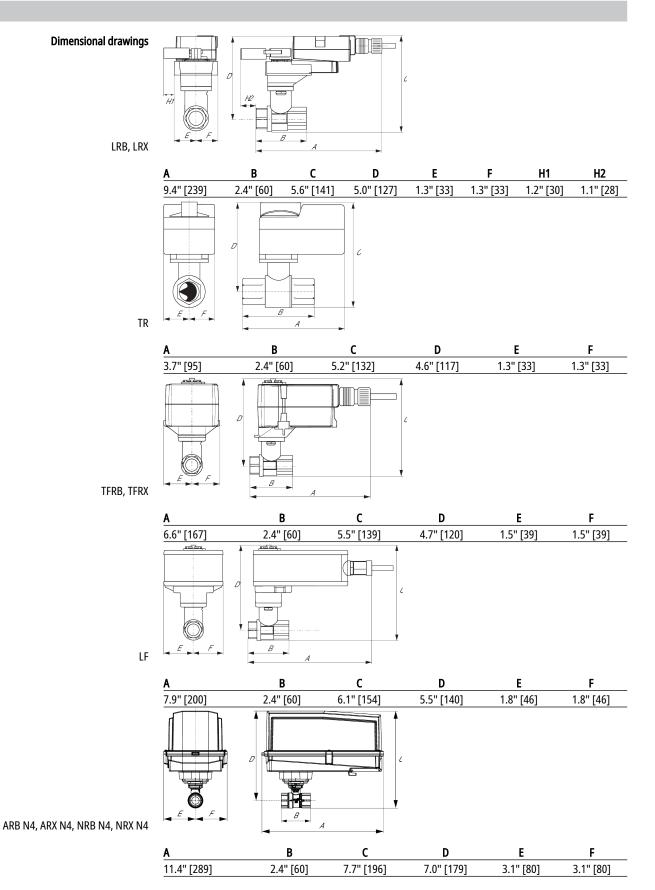
# Flow/Mounting details



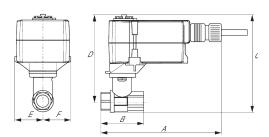




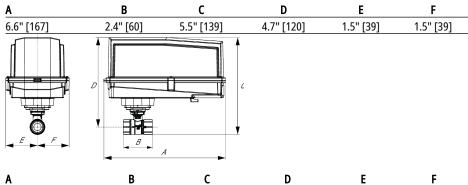
# **Dimensions**







TFRB, TFRX



ARB N4, ARX N4, NRB N4, NRX N4

A	В	С	D	E	F
11.4" [289]	2.4" [60]	7.7" [196]	7.0" [179]	3.1" [80]	3.1" [80]











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Electrical data	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Power consumption in operation	2.5 W
	Power consumption in rest position	1.2 W
	Transformer sizing	5 VA (class 2 power source)
	Electrical Connection	18 GA plenum cable with 1/2" conduit connector, degree of protection NEMA 2 / IP54, 3 ft [1 m] 10 ft [3 m] and 16ft [5 m]
	Overload Protection	electronic thoughout 090° rotation
Functional data	Operating range Y	0135 Ω
	Operating range Y note	Honeywell Electronic Series 90, input 0135 Ω
	Input Impedance	100 kΩ
	Position feedback U	210 V
	Position feedback U note	Max. 0.5 mA
	Position feedback U variable	VDC variable
	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)	default 150 s, variable 35150 s
	Running time motor variable	35150 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
Weight	Weight	1.5 lb [0.70 kg]

# Safety notes





- NEMA 4X, 316L stainless steel enclosure.
- Battery Back Up System for SY(7~10)-110
- ZS-300 without brackets.
- NEMA 4X, 304 stainless steel enclosure.
- MFT95 resistor kit for 4 to 20 mA control applications.

#### **Accessories**

Gateways	Description	Туре
	Gateway MP to BACnet MS/TP	UK24BAC
	Gateway MP to LonWorks	UK24LON
	Gateway MP to Modbus RTU	UK24MOD
Service tools	Description	Туре
	Connection cable 10 ft [3 m], A: RJ11 6/4 ZTH EU, B: 3-pin Weidmüller and supply connection	ZK4-GEN
	Service Tool, with ZIP-USB function, for parametrisable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US

#### **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.

 $\sqrt{3}$  Actuators may also be powered by 24 VDC.

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

Actuators and controller must have separate transformers.

Consult controller instruction data for more detailed information.

Resistor value depends on the type of controller and the number of actuators. No resistor is used for one actuator. Honeywell® resistor kits may also be used.

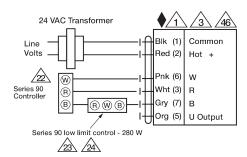
To reverse control rotation, use the reversing switch.

& Actuators may be controlled in parallel. Current draw and input impedance must be observed.

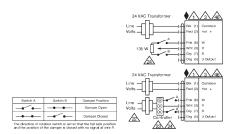
Meets cULus requirements without the need of an electrical ground connection.

# ♠ Warning! Live Electrical Components!

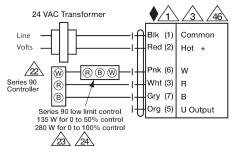
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



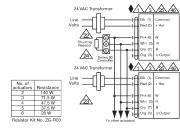
**High Limit Control** 



Typical and Override Control

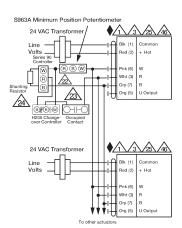


Low Limit Control

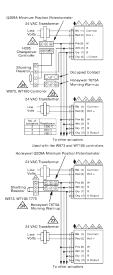


**Multiple Actuators** 





Multiple Actuators with Minimum Position Potentiometer



Multiple Actuators Used with W973, W7100 and T775