

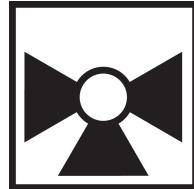
3-way Mixing/Diverting, Characterized Control Valve, Stainless Steel Ball and Stem



Picture may differ from product



5-year warranty



## Type overview

Type	DN
B318	3/4" [20]

## Technical data

Functional data	Valve size [mm]	0.75" [20]
Fluid	chilled or hot water, up to 60% glycol	
Fluid Temp Range (water)	0...250°F [-18...120°C]	
Body Pressure Rating	600 psi	
Close-off pressure $\Delta$ ps	200 psi	
Flow	A-port: as stated in chart B-port: 70% of A - AB Cv	
Flow characteristic	A-port equal percentage, B-port modified for constant common port flow	
Leakage rate	0% for A - AB, <2.0% for B - AB	
Pipe connection	Internal thread NPT (female)	
Servicing	maintenance-free	
Flow Pattern	3-way Mixing/Diverting	
Controllable flow range	75°	
Cv	7.4	
Materials	Valve body	Nickel-plated brass body
	Stem	stainless steel
	Stem seal	EPDM (lubricated)
	Seat	PTFE
	Characterized disc	TEFZEL®
	O-ring	EPDM (lubricated)
	Ball	stainless steel
Suitable actuators	Non Fail-Safe	TR LRB(X) LRQB(X) NRB(X) N4
	Spring	TFRB(X) LF

## 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](http://www.p65warnings.ca.gov)

## 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 or constant flow.

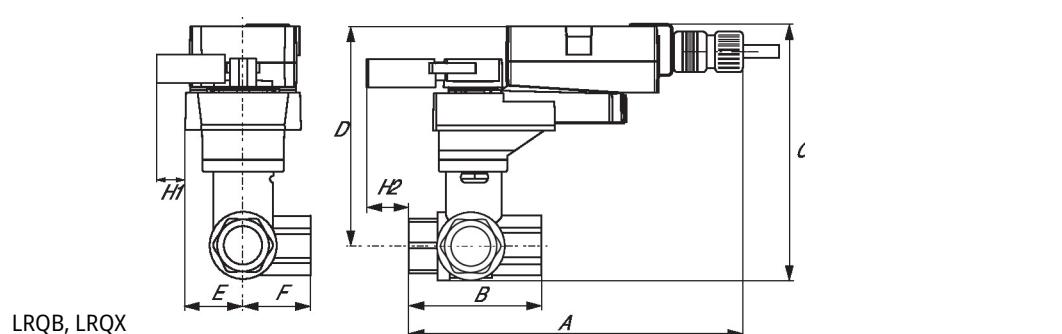
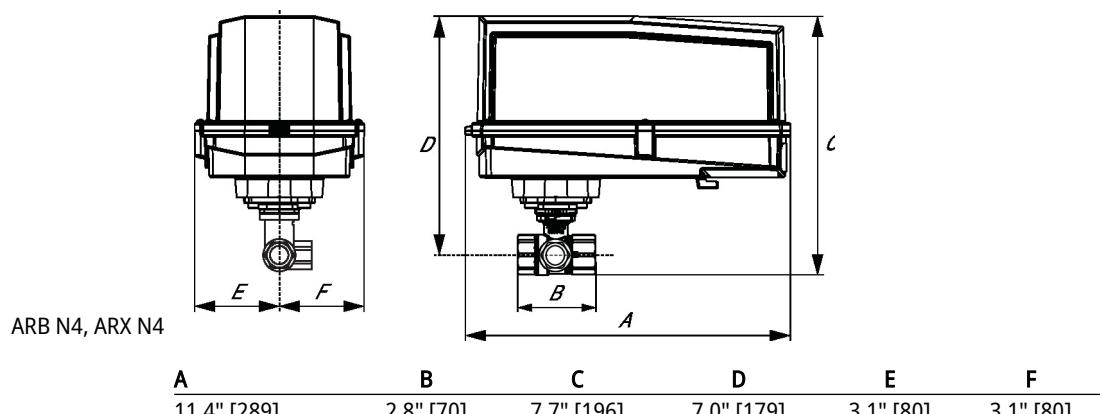
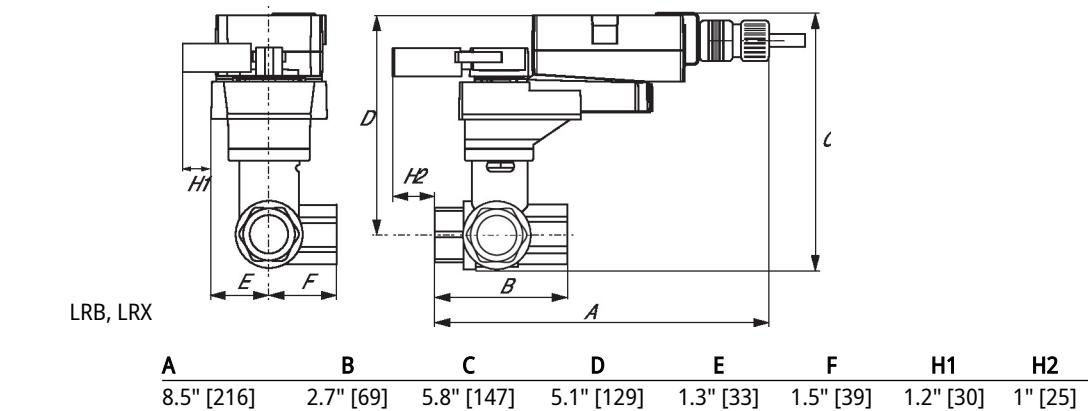
## Flow/Mounting details

This valve is not suitable for use as a change over valve.



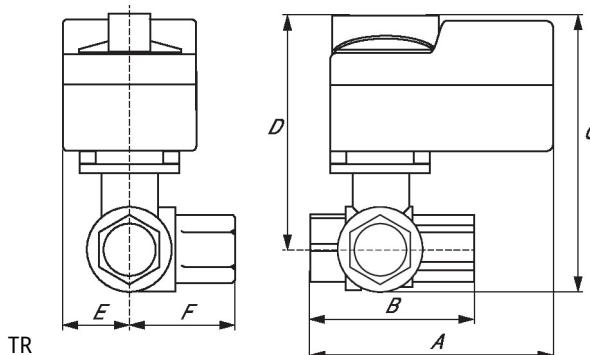
## Dimensions

Type	DN	Weight
B318	3/4" [20]	0.86 lb [0.39 kg]

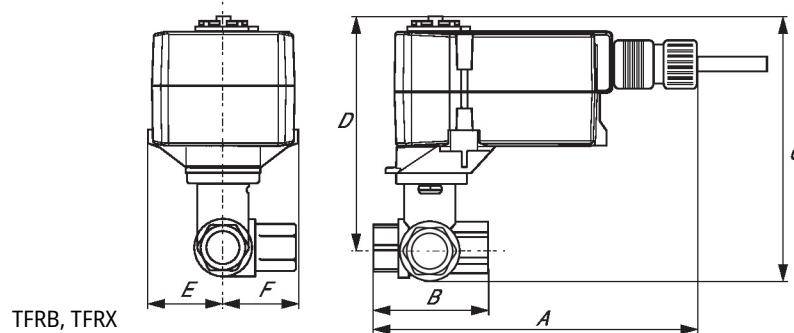


## Dimensions

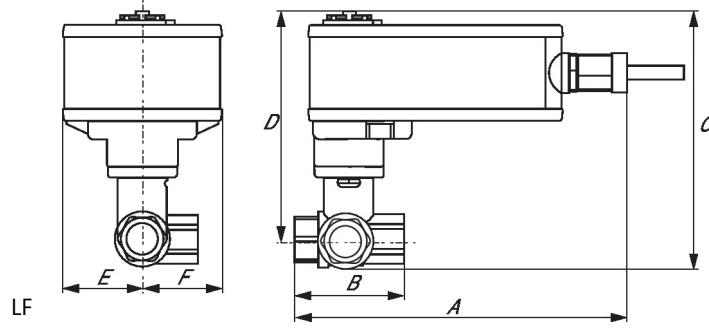
A	B	C	D	E	F	H1	H2
8.9" [226]	2.7" [69]	6.3" [159]	5.6" [142]	1.6" [40]	1.6" [40]	1.2" [30]	1.3" [33]



A	B	C	D	E	F
3.7" [95]	2.7" [69]	4.8" [122]	4.2" [107]	1.3" [33]	1.2" [31]



A	B	C	D	E	F
6.6" [167]	2.7" [69]	4.9" [124]	4.3" [110]	1.5" [39]	1.5" [39]



A	B	C	D	E	F
8.6" [218]	2.7" [69]	6.3" [159]	5.6" [142]	1.8" [46]	1.9" [48]

MFT/programmable, Spring return, 24 V



5-year warranty



## Technical data

Electrical data		
	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	2.5 W
	Power consumption in rest position	1 W
	Transformer sizing	4 VA
	Electrical Connection	18 GA appliance or plenum cables, 3 ft [1 m], 10 ft [3 m] or 16 ft [5 m], with or without 1/2" NPT conduit connector
	Overload Protection	electronic throughout 0...95° rotation
Functional data		
	Operating range Y	2...10 V
	Operating range Y note	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, 1500 Ω for PWM, On/Off and Floating point
	Operating range Y variable	Start point 0.5...30 V End point 2.5...32 V
	Operating modes optional	variable (VDC, PWM, on/off, floating point)
	Position feedback U	2...10 V
	Position feedback U note	Max. 0.5 mA
	Position feedback U variable	VDC variable
	Direction of motion motor	selectable with switch 0/1
	Direction of motion fail-safe	reversible with cw/ccw mounting
	Angle of rotation	Max. 95°
	Running Time (Motor)	150 s / 90°
	Running time motor variable	75...300 s
	Running time fail-safe	<25 s @ -10...55°C / <60 s @ -30...-10°C
	Noise level, motor	35 dB(A)
	Noise level, fail-safe	62 dB(A)
	Position indication	Mechanical
Safety data		
	Power source UL	Class 2 Supply
	Degree of protection IEC/EN	IP42
	Degree of protection NEMA/UL	NEMA 2
	Enclosure	UL Enclosure Type 2

## Technical data

<b>Safety data</b>	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02 CE acc. to 2014/30/EU and 2014/35/EU
<b>Quality Standard</b>	ISO 9001	
UL 2043 Compliant	Suitable for use in air plenums per Section 300.22(C) of the NEC and Section 602 of the IMC	
Ambient humidity	Max. 95% RH, non-condensing	
Ambient temperature	-22...122°F [-30...50°C]	
Storage temperature	-40...176°F [-40...80°C]	
Servicing	maintenance-free	
<b>Weight</b>	Weight	1.3 lb [0.59 kg]
<b>Materials</b>	Housing material	UL94-5VA

**Footnotes** \*Variable when configured with MFT options.

## Accessories

	<b>Description</b>	<b>Type</b>
<b>Gateways</b>	Gateway MP to BACnet MS/TP Gateway MP to Modbus RTU Gateway MP to LonWorks	UK24BAC UK24MOD UK24LON
<b>Electrical accessories</b>	<b>Description</b>	<b>Type</b>
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US
<b>Tools</b>	<b>Description</b>	<b>Type</b>
	Connecting cable 10 ft [3 m], A: RJ11 6/4 ZTH EU, B: 3-pin Weidmüller and supply connection Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZK4-GEN ZTH US

## Electrical installation

 **INSTALLATION NOTES**

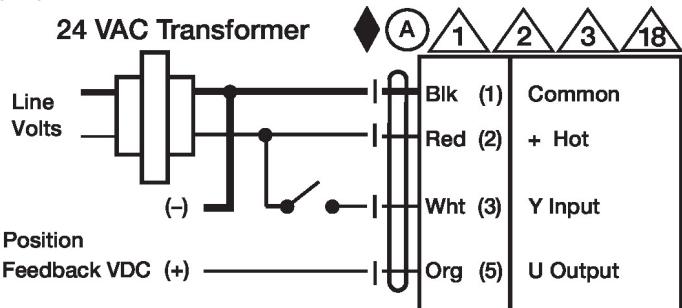
-  **A** Actuators with appliance cables are numbered.
-  **1** Provide overload protection and disconnect as required.
-  **2** Actuators may be connected in parallel. Power consumption and input impedance must be observed.
-  **3** Actuators may also be powered by DC 24 V.
-  **4** Two built-in auxiliary switches (2x SPDT), for end position indication, interlock control, fan startup, etc.
-  **5** Only connect common to negative (-) leg of control circuits.
-  **7** A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
-  **8** Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 V line.
-  **10** For triac sink the Common connection from the actuator must be connected to the Hot connection of the controller. Position feedback cannot be used with a triac sink controller; the actuator internal common reference is not compatible.
-  **12** IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).
-  **18** 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.

**Wiring diagrams**

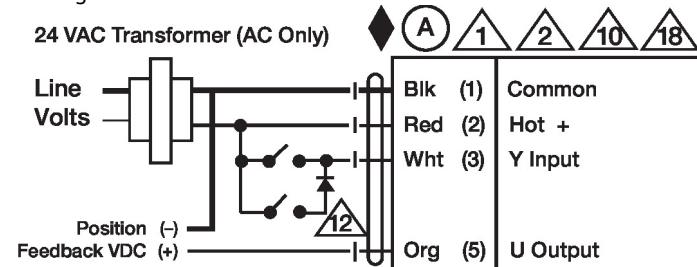
On/Off



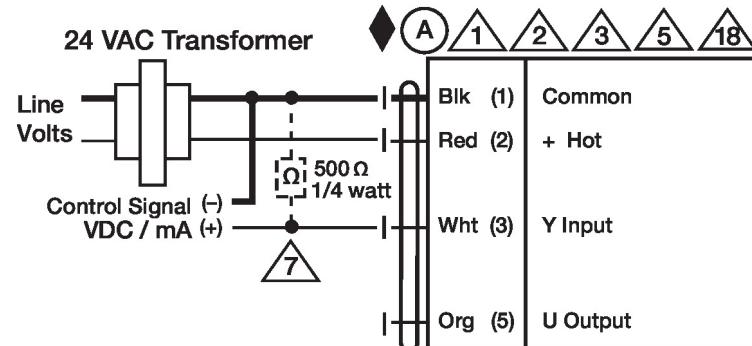
Position

Feedback VDC (+)

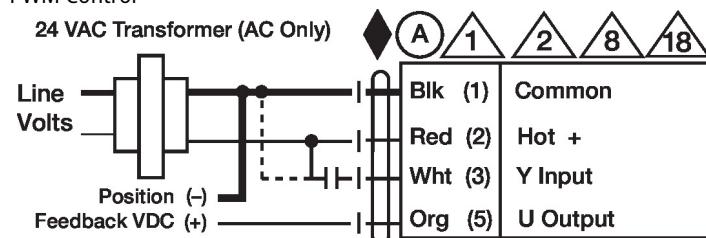
Floating Point



VDC/mA Control



PWM Control



## Electrical installation

## Wiring diagrams

## Override Control

