

2-way, Characterized Control Valve, Stainless Steel Ball and Stem



5-year warranty

Type overview

Type	DN
B215HT029	15

Technical data

Functional data	Valve size [mm]	0.5" [15]
	Fluid	high temperature hot water/low pressure steam, up to 60% glycol
	Fluid Temp Range (water)	60...266°F [16...130°C]
	Fluid Temp Range (steam)	250°F [120°C]
	Body Pressure Rating	600 psi
	Close-off pressure Δps	200 psi
	Flow characteristic	equal percentage
	Pipe connection	Internal thread NPT (female)
	Servicing	maintenance-free
	Max Differential Pressure (Steam)	15 psi
	Flow Pattern	2-way
	Leakage rate	0%
	Controllable flow range	75°
	Cv	0.29
	Maximum Inlet Pressure (Steam)	15 psi
	Materials	Valve body
Stem		stainless steel
Stem seal		Viton O-ring
Seat		ETFE
Characterized disc		ETFE
O-ring		EPDM (lubricated)
Ball		stainless steel
Suitable actuators	Non Fail-Safe	TR LRB(X)
	Spring	TFRB(X)

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

Product features

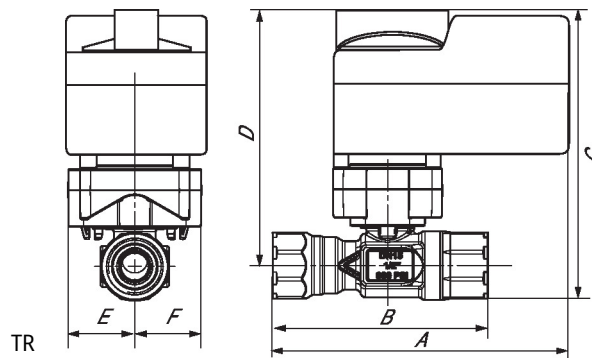
Application This valve is typically used in air handling units on heating or cooling coils, and fan coil unit heating or cooling coils. Some other common applications include unit ventilators, VAV box re-heat coils and bypass loops. This valve is suitable for use in a hydronic system with variable flow. This valve is designed to fit in compact areas where on/off, floating point and modulating control is required using 24 VAC.

Flow/Mounting details

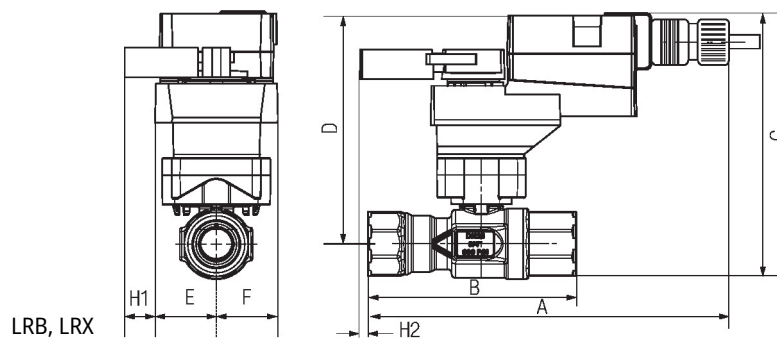


Dimensions

Type	DN	Weight
B215HT029	15	0.61 lb [0.28 kg]

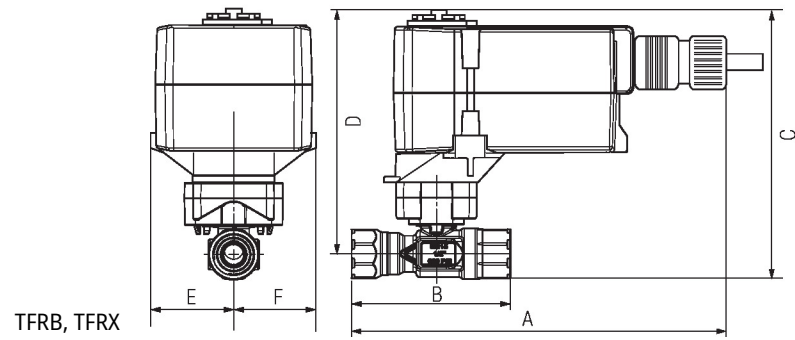


A	B	C	D	E	F
4.2" [106]	3.3" [85]	5.4" [137]	4.9" [125]	1.3" [33]	1.3" [33]



A	B	C	D	E	F	H1	H2
8.3" [211]	3.3" [85]	5.8" [147]	5.3" [134]	1.5" [39]	1.5" [39]	1.2" [30]	0.6" [15]

Dimensions



TFRB, TFRX

A	B	C	D	E	F
7.3" [185]	3.3" [85]	5.8" [147]	5.3" [134]	1.5" [39]	1.5" [39]



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, 1 m, 3 m or 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
	Agency Listing	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1:02 CE acc. to 2014/30/EU and 2014/35/EU
	Quality Standard	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

Safety data	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
Weight	Weight	1.3 lb [0.59 kg]
Materials	Housing material	UL94-5VA
Footnotes	*Variable when configured with MFT options.	

Accessories

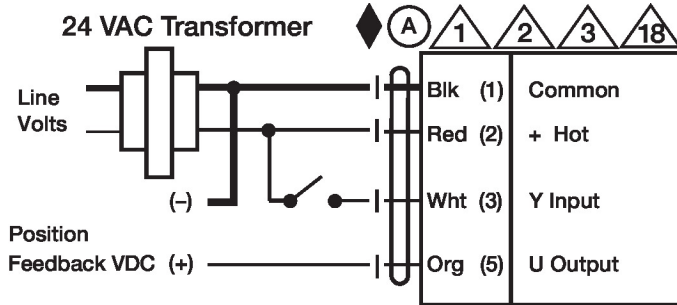
Gateways	Description	Type
	Gateway MP to BACnet MS/TP	UK24BAC
	Gateway MP to Modbus RTU	UK24MOD
	Gateway MP to LonWorks	UK24LON
Electrical accessories	Description	Type
	Service tool, with ZIP-USB function, for programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US
Tools	Description	Type
	Connecting 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 programmable and communicative Belimo actuators, VAV controller and HVAC performance devices	ZTH US

Electrical installation
 **INSTALLATION NOTES**

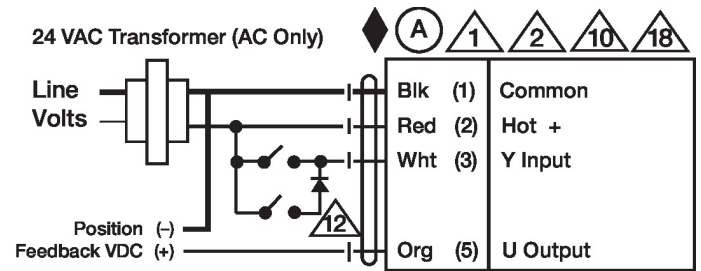
-  Actuators with appliance cables are numbered.
-  Provide overload protection and disconnect as required.
-  Actuators may be connected in parallel. Power consumption and input impedance must be observed.
-  Actuators may also be powered by DC 24 V.
-  Two built-in auxiliary switches (2x SPDT), for end position indication, interlock control, fan startup, etc.
-  Only connect common to negative (-) leg of control circuits.
-  A 500 Ω resistor (ZG-R01) converts the 4...20 mA control signal to 2...10 V.
-  Control signal may be pulsed from either the Hot (Source) or Common (Sink) 24 V line.
-  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.
-  IN4004 or IN4007 diode. (IN4007 supplied, Belimo part number 40155).
-  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

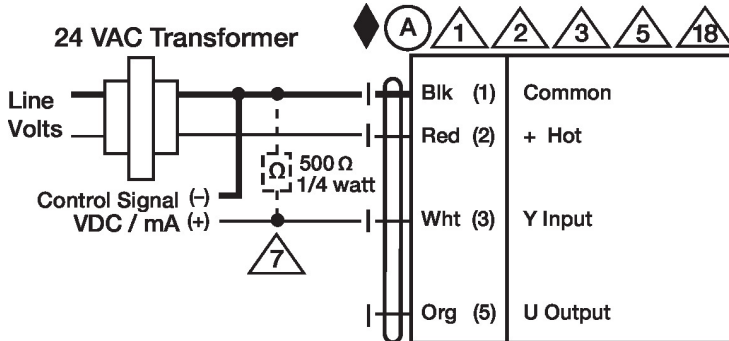
On/Off



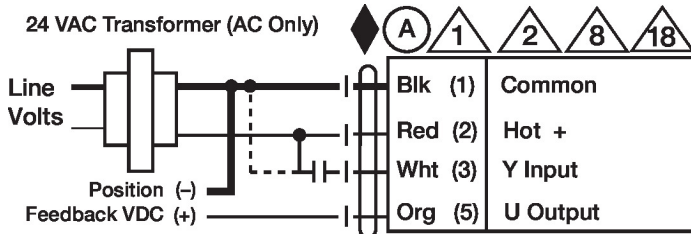
Floating Point



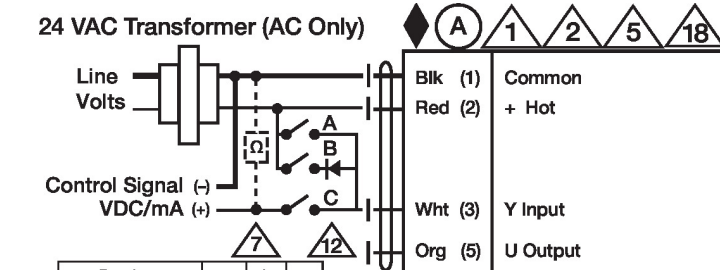
VDC/mA Control



PWM Control



Override Control



Functions	a	b	c
Min 0%			
Mid 50%			
Max 100%			
Normal Control mode acc. to Y			