Factory Set
P2... Series Pressure Independent Characterized Control Valves (PICCV)
Chrome Plated Brass Ball and Brass Stem, NPT Female Ends

Application

The Pressure Independent Characterized Control Valve is typically used in air handling units on heating and cooling coils, and fan coil unit heating or cooling coils. Some other common applications include unit ventilators and VAV re-heat coils. This valve is suitable for use in a hydronic system with constant or variable flow.

This valve is designed with MFT functionality which facilitates the use of various control input.

Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	equal percentage
Size	½", ¾", 1"
Type of end fitting	female, NPT
Materials	
Body	forged brass, nickel plated
Ball	chrome plated brass
Stem	chrome plated brass
Seat O-rings	Viton
Seat	fiberglass reinforced Teflon® PTFE
Characterizing disc	½" & ¾" Brass 1" TEFZEL®
Packing	2 EPDM O-rings, lubricated
Diaphragm	½" & ¾" silicone and Nomex 1" polyester reinforced silicone
Regulator components	stainless steel/brass/Nitrile
Spring	stainless steel
Body pressure rating	600 PSI
Media temp. range	0°F to 212°F [-18°C to +100°C]
Close off pressure	200 PSI
Leakage	ANSI Class IV (0.01% of rated valve capacity at 50 psi differential)
Rangeability	100 : 1
Differential pressure	5 to 50 PSI operating range
Valve accuracy	± 5%*
Weight of valve body	½" = 2.52 lbs ¾" = 2.52 lbs 1" = 4.98 lbs

½" body has three discs with different flow capbilities (.50 GPM to 1 GPM), (1.5 GPM to 2.5 GPM), (3 GPM to 5.5 GPM)
1" body has two discs with different flow capabilities (11 GPM to 16 GPM), (17 GPM to 19 GPM)
Tefzel® and Teflon® are registered trademarks of Dupont™
* See page 3 of the PICCV Technical Documentation for more details.

	Flow Rate		Valve Nominal Size			Suitable Actuators				
Valve Model	GPM	Liter/sec	Inches	DN mm	Close-off PSI	Spring Return		Non-Spring Return		
P2050B005(-P)	0.5	0.03	½	15	200	TFR24-MFT US	LF24-MFT US	LRB(X)24-3	LRX24-MFT	LRCB24-3 Heat Pump Only
P2050B010(-P)	1	0.06	½	15	200					
P2050B015(-P)	1.5	0.09	½	15	200					
P2050B020(-P)	2	0.13	½	15	200					
P2050B025(-P)	2.5	0.16	½	15	200					
P2050B030(-P)	3	0.19	½	15	200					
P2050B035(-P)	3.5	0.22	½	15	200					
P2050B040(-P)	4	0.25	½	15	200					
P2050B045(-P)	4.5	0.28	½	15	200					
P2050B050(-P)	5	0.32	½	15	200					
P2050B055(-P)	5.5	0.35	½	15	200					
P2075B060(-P)	6	0.38	¾	20	200					
P2075B065(-P)	6.5	0.41	¾	20	200					
P2075B070(-P)	7	0.44	¾	20	200					
P2075B075(-P)	7.5	0.47	¾	20	200					
P2075B080(-P)	8	0.50	¾	20	200					
P2075B085(-P)	8.5	0.54	¾	20	200					
P2075B090(-P)	9	0.57	¾	20	200					
P2075B095(-P)	9.5	0.60	¾	20	200					
P2075B100(-P)	10	0.63	¾	20	200					
PICCV-25-011(-P)	11	0.69	1	25	200					
PICCV-25-012(-P)	12	0.76	1	25	200					
PICCV-25-013(-P)	13	0.82	1	25	200					
PICCV-25-014(-P)	14	0.88	1	25	200					
PICCV-25-015(-P)	15	0.95	1	25	200					
PICCV-25-016(-P)	16	1.01	1	25	200					
PICCV-25-017(-P)	17	1.07	1	25	200					
PICCV-25-018(-P)	18	1.14	1	25	200					
PICCV-25-019(-P)	19	1.20	1	25	200					

(-P) optional, ΔP verification across valve using PT ports

P10410 - 09/13 - Subject to change. © Belimo Aircontrols (USA), Inc.

LRB24-3, LRB24-3-S, LRX24-3 Actuators, On/Off, Floating Point

Models

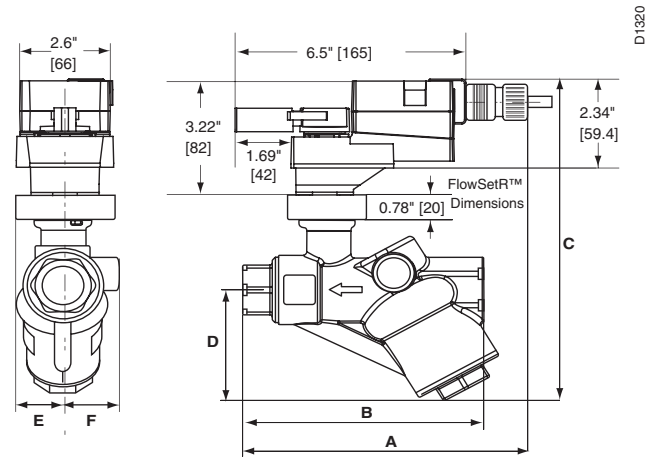
LRB24-3
LRB24-3-S w/built-in Aux. Switch
LRX24-3

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption running	1.5 W
holding	0.2 W
Transformer sizing	2 VA (class 2 power source)
Electrical connection	3 ft., 18 GA, plenum rated cable ½" conduit connector
Overload protection	electronic throughout 0° to 95° rotation
Control	on/off, floating point
Input impedance	600 Ω
Angle of rotation	90°, adjustable with mechanical stop
Direction of rotation	reversible with protected ↷/↶ switch
Position indication	handle
Manual override	external push button
Running time	95 seconds, constant independent of load
Humidity	5 to 95% RH, non-condensing (EN 60730-1)
Ambient temperature	-22°F to +122°F [-30°C to +50°C]
Storage temperature	-40°F to +176°F [-40°C to +80°C]
Housing type	NEMA 2/IP54
Housing material	UL94-5VA
Agency listings†	cULus acc. to UL60730-1A/-2-14, CAN/CSA E60730-1, CSA C22.2 No. 24-93, CE acc. to 89/336/EEC
Noise level	less than 35 dB (A)
Quality standard	ISO 9001

LRB24-3-S	
Auxiliary switch	1 SPDT, 3A (0.5A) @ 250 VAC, UL Listed, adjustable 0° to 100°

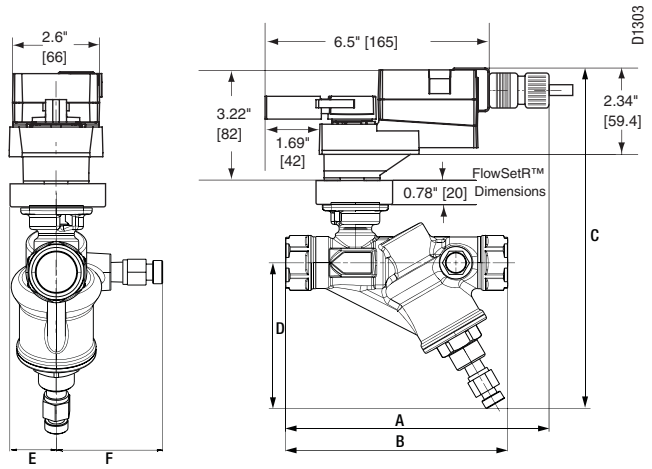
† Rated impulse voltage 800V, Control pollution degree 3, Type of action 1 (1.B for -S models)

Dimensions (inches [mm])



Valve Nominal Size		Dimensions (Inches [mm])					
In.	DN [mm]	A	B	C	D	E	F
½"	15	7.68" [195]	4.47" [114]	7.91" [201]	2.34" [59]	1.48" [38]	1.48" [38]
¾"	20	7.98" [203]	5.4" [137]	7.91" [201]	2.34" [59]	1.48" [38]	1.48" [38]
1"	25	8.9" [226]	6.85" [174]	8.8" [224]	3.23" [82]	1.6" [41]	1.6" [41]

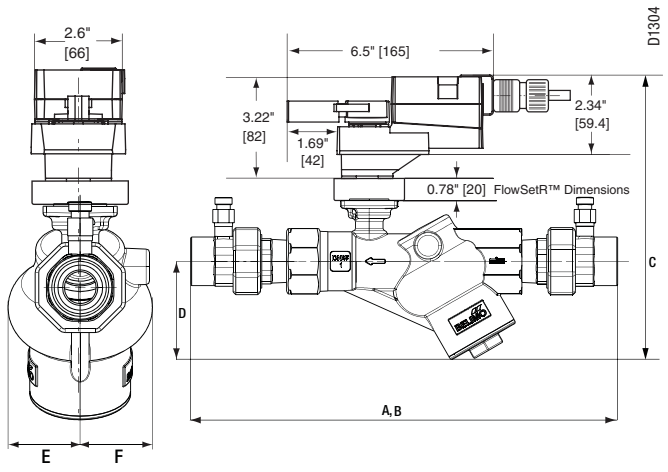
Dimensions with PT Port (Inches [mm])



Valve Nominal Size		Dimensions (Inches [mm])					
In.	DN [mm]	A	B	C	D	E	F
½"	15	7.68" [195]	4.47" [114]	9.25" [235]	3.54" [90]	1.48" [38]	2.4" [61]
¾"	20	7.98" [203]	5.4" [137]	9.25" [235]	3.54" [90]	1.48" [38]	2.4" [61]

P10410 - 09/13 - Subject to change. © Belimo Aircontrols (USA), Inc.

Dimensions with PT Port (Inches [mm])



Valve Nominal Size		Dimensions (Inches [mm])					
In.	DN [mm]	A	B	C	D	E	F
1"	25	12.6" [320]	12.6" [320]	8.02" [204]	2.95" [75]	1.6" [41]	1.6" [41]

Wiring Diagrams

INSTALLATION NOTES

2 **CAUTION** *Equipment damage!*
Actuators may be connected in parallel.
Power consumption and input impedance must be observed.

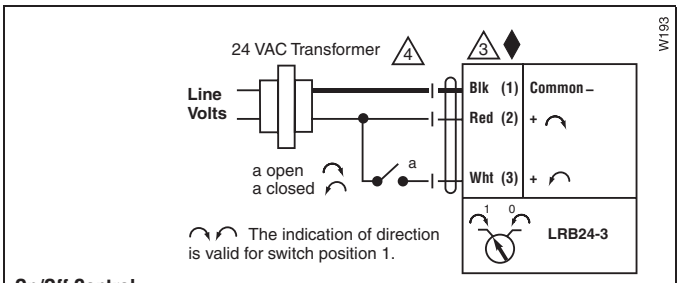
3 Actuators are provided with color coded wires.
Wire numbers are provided for reference.

4 Actuators may also be powered by 24 VDC.

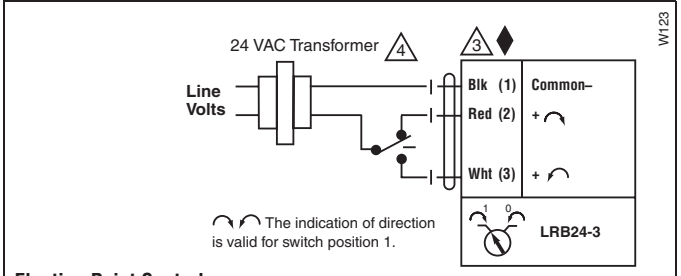
APPLICATION NOTES

Meets cULus or UL and CSA requirements without the need of an electrical ground connection.

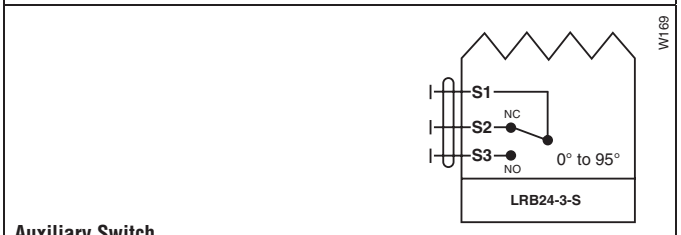
WARNING *Live Electrical Components!*
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components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



On/Off Control



Floating Point Control



Auxiliary Switch

P10410 - 09/13 - Subject to change. © Belimo Aircontrols (USA), Inc.