

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/Delrin 500 AF
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)
Flow rate	
½"	0.5 GPM [.03 l/s], 1 GPM [.06 l/s], 1.50 GPM [0.09 l/s], 2 GPM [.13 l/s], 2.5 GPM (0.16 l/s) , 3 GPM [.19 l/s], 3.5 GPM (0.22 l/s), 4 GPM [.25 l/s], 4.5 GPM (0.28 l/s), 5 GPM [.32 l/s], 5.5 GPM (0.35 l/s)
¾"	6 GPM [0.37 l/s], 6.5 GPM (0.41 l/s), 7 GPM [0.44 l/s], 7.5 GPM (0.47 l/s) 8 GPM [0.50 l/s], 8.5 GPM (0.54 l/s), 9 GPM [0.57 l/s], 9.5 GPM (0.60 l/s) 10 GPM [0.63 l/s]
1"	11 GPM (0.69 l/s), 12 GPM [0.76 l/s], 13 GPM (0.82), 14 GPM [0.88 l/s], 15 GPM (0.95 l/s), 16 GPM [1.01 l/s], 17 GPM (1.07 l/s), 18 GPM [1.14 l/s] 19 GPM (1.20 l/s)
Rangeability	100 : 1
Differential pressure	5 to 50 PSI operating range
Valve accuracy	± 10% combination of manufacturing tolerances and pressure variations
Weight of valve body	½" = 2.52 lbs ¾" = 2.52 lbs 1" = 4.98 lbs

½" body has two different flow capacities (.50 GPM to 2.5 GPM) (3 GPM to 5.5 GPM)
1" body has two different flow capacities (11 GPM to 16 GPM) (17 GPM to 19 GPM)
Tefzel® and Teflon® are registered trademarks of Dupont

Valve Model	Flow Rate		Valve Nominal Size		Suitable Actuators		
	GPM	Liter/sec	Inches	DN mm	Close-off PSI	Spring Return	Non-Spring Return
P2050B005	0.5	0.03	½	15	200	TF24-MFT US	
P2050B010	1	0.06	½	15	200		
P2050B015	1.5	0.09	½	15	200		
P2050B020	2	0.13	½	15	200		
P2050B025	2.5	0.16	½	15	200		
P2050B030	3	0.19	½	15	200		
P2050B035	3.5	0.22	½	15	200		
P2050B040	4	0.25	½	15	200		
P2050B045	4.5	0.28	½	15	200		
P2050B050	5	0.32	½	15	200		
P2050B055	5.5	0.35	½	15	200	LF24-MFT US LRB(X)24-3 LRX24-MFT LRCB24-3 Heat Pump Only	
P2075B060	6	0.38	¾	20	200		
P2075B065	6.5	0.41	¾	20	200		
P2075B070	7	0.44	¾	20	200		
P2075B075	7.5	0.47	¾	20	200		
P2075B080	8	0.50	¾	20	200		
P2075B085	8.5	0.54	¾	20	200		
P2075B090	9	0.57	¾	20	200		
P2075B095	9.5	0.60	¾	20	200		
P2075B100	10	0.63	¾	20	200		
PICCV-25-011	11	0.69	1	25	200		
PICCV-25-012	12	0.76	1	25	200		
PICCV-25-013	13	0.82	1	25	200		
PICCV-25-014	14	0.88	1	25	200		
PICCV-25-015	15	0.95	1	25	200		
PICCV-25-016	16	1.01	1	25	200		
PICCV-25-017	17	1.07	1	25	200		
PICCV-25-018	18	1.14	1	25	200		
PICCV-25-019	19	1.20	1	25	200		

M40019 - 06/10 - Subject to change. © Belimo Aircontrols (USA), Inc.



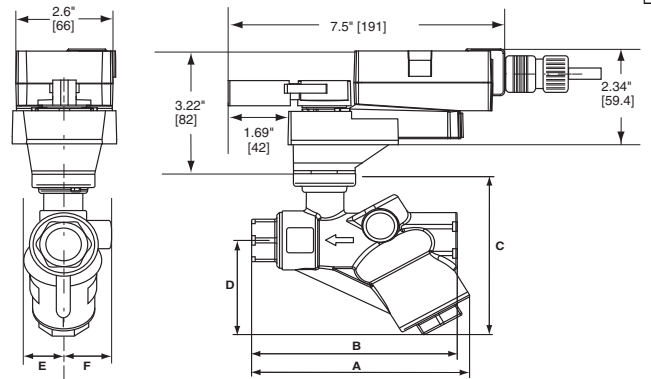
Model

LRX24-MFT

Technical Data	
Power supply	24 VAC ± 20% 50/60 Hz 24 VDC ± 10%
Power consumption	running 2 W holding 1.2 W
Transformer sizing	5 VA (class 2 power source)
Electrical connection	18 GA plenum rated cable 1/2" conduit connector 3 ft [1m] 10 ft [3m] 16 ft [5m]
Overload protection	electronic throughout 0° to 95° rotation
Operating range Y	2 to 10 VDC, 4 to 20 mA (default) Variable (VDC, PWM, Floating Point, On/Off)
Input impedance	100 kΩ (0.1 mA), 500 Ω 1500 Ω (PWM, Floating Point, On/Off)
Feedback output U	2 to 10 VDC, 0.5mA max VDC Variable
Angle of rotation	max. 95°, adjust. with mechanical stop electronically variable
Torque	45 in-lb [5 Nm]
Direction of rotation	reversible with protected switch
Position indication	handle
Manual override	external push button
Running time	100 seconds Variable (35 to 150 secs)
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	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	<35dB(A)
Quality standard	ISO 9001
Weight	1.5 lbs [0.7 kg]

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

Dimensions with PICCV



Valve Nominal Size		Dimensions (Inches [mm])					
In.	DN [mm]	A	B	C	D	E	F
1/2"	15	4.68 [119]	4.47 [114]	4.05 [103]	2.34 [60]	0.99 [25]	0.99 [25]
3/4" after 8/2009	20	4.90 [125]	4.94 [126]	4.05 [103]	2.34 [60]	0.99 [25]	0.99 [25]
3/4" until 8/2009	20	5.35 [133]	5.03 [128]	4.22 [107]	2.38 [61]	1.04 [26]	1.30 [34]
1"	25	7.05 [179]	6.85 [174]	4.80 [122]	3.23 [82]	1.60 [41]	1.60 [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 may also be powered by 24 VDC.
- 4** Position feedback cannot be used with Triac sink controller.
The actuator internal common reference is not compatible.
- 6** Control signal may be pulsed from either the Hot (source) or the Common (sink) 24 VAC line.
- 8** Contact closures A & B also can be triacs.
- 9** For triac sink the common connection from the actuator must be connected to the hot connection.

APPLICATION NOTES

- ◆** The ZG-R01 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC, up to 2 actuators may be connected in parallel.

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.

M40019 - 06/10 - Subject to change. © Belimo Aircontrols (USA), Inc.

