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)
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Valve Model	Flow Rate GPM	Flow Rate Liter/sec	Valve Nominal Size Inches	Valve Nominal Size DN mm	Close-off PSI	Suitable Actuators: Spring Return	Suitable Actuators: Non-Spring Return			
						TF24-MFT US	LF24-MFT US	LRB(X)24-3	LRX24-MFT	LRCB24-3 Heat Pump Only
P2050B005	0.5	0.03	½	15	200					
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					
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					

Models

LRCB24-3
LRCB24-3-S

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	2.5 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 rotation
Control	on/off
Input impedance	600 Ω
Angle of rotation	95°
Direction of Rotation	reversible with protected ↷/↶ switch
Position indication	handle
Manual override	external push button and handle
Running time	40 second constant independent of load
Ambient temperature	-22° F to 122° F [-30° C to 50° 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 and (-S Models) 2006/95/EC†
Noise level	max. 35 dB(A)

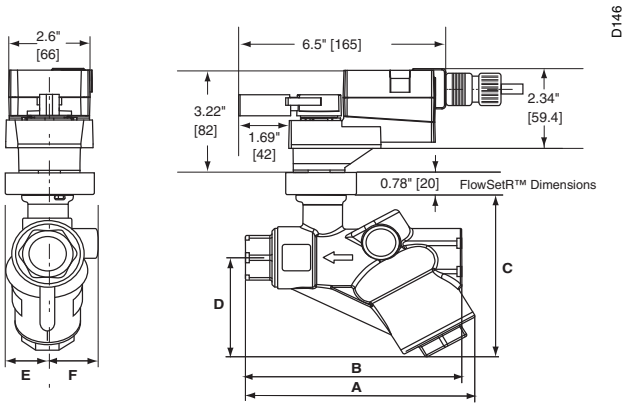
LRCB24-3-S	
Auxiliary switches	1 SPDT, 3A (0.5A inductive) @ 250 V

†Rated Impulse Voltage 800V, Type of action 1 (1.B for -S version), Control Pollution Degree 3.

Application

The Pressure Independent Characterized Control Valve along with the LRCB24-3 is paired together specifically for use in Heat Pump applications to precisely control the flow of condenser water. This assembly is suitable for use in a hydronic system with constant or variable flow.

Dimensions with PICCV



Valve Nominal Size		Dimensions (Inches [mm])					
In.	DN [mm]	A	B	C	D	E	F
½"	15	4.68 [119]	4.47 [114]	4.05 [103]	2.34 [60]	0.99 [25]	0.99 [25]
¾" after 8/2009	20	4.90 [125]	4.94 [126]	4.05 [103]	2.34 [60]	0.99 [25]	0.99 [25]
¾" 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

1 Provide overload protection and disconnect as required.

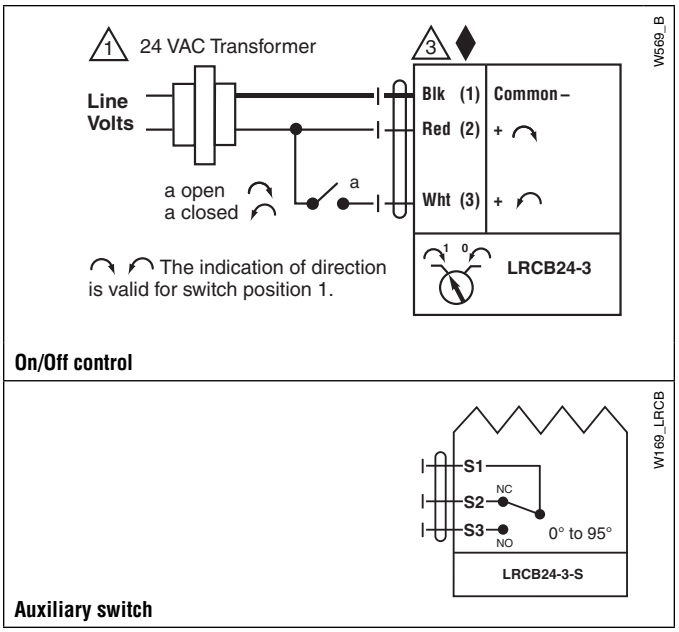
3 Actuators may also be powered by 24 VDC.

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

Auxiliary switch