

# Field Set

## P2... Series Pressure Independent Characterized Control Valves

### Chrome Plated Brass Ball and Brass Stem, NPT Female Ends



Valve is supplied at maximum flow in the full open position only. Field adjustment is necessary to achieve lower flow.

#### 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.

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	
LRB24-SA	0°F to 212°F [-18°C to +100°C]
KRB24-3	0°F to 176°F [-18°C to +80°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 [1.14 kg] ¾" = 2.52 lbs [1.14 kg] 1" = 4.98 lbs [2.26 kg]

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\*See page 3 of the PICCV Technical Documentation for more details.

Valve Model	GPM Range	Valve Nominal Size			Suitable Actuators	
		Inches	DN mm	Close-off PSI	Non-Spring Return	
P2050B010	0...(0.5-1.5)	½	15	200	KRB24-3	LRB24-SA
P2050B025	0...(1.6-3.0)	½	15	200		
P2050B055	0...(3.0-5.6)	½	15	200		
P2075B100	0...(5.7-10)	¾	20	200		
PICCV-25-016	0...(11-16)	1	25	200		
PICCV-25-021	0...(17-21)	1	25	200		

Valve Model	GPM Range	Valve Nominal Size			Suitable Actuators	
		Inches	DN mm	Close-off PSI	Non-Spring Return	
P2050B010-P	0...(0.5-1.5)	½	15	200	KRB24-3	LRB24-SA
P2050B025-P	0...(1.6-3.0)	½	15	200		
P2050B055-P	0...(3.0-5.6)	½	15	200		
P2075B100-P	0...(5.7-10)	¾	20	200		
PICCV-25-016-P	0...(11-16)	1	25	200		
PICCV-25-021-P	0...(17-21)	1	25	200		

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

Valve Model	GPM Range	Valve Nominal Size			Suitable Actuators	
		Inches	DN mm	Close-off PSI	Non-Spring Return	
P2050B010-F	0...(0.5-1.5)	½	15	200	KRB24-3	LRB24-SA
P2050B025-F	0...(1.6-3.0)	½	15	200		
P2050B055-F	0...(3.0-5.6)	½	15	200		
P2075B100-F	0...(5.7-10)	¾	20	200		
PICCV-25-016-F	0...(11-16)	1	25	200		
PICCV-25-021-F	0...(17-21)	1	25	200		

(-F) optional, flow verification using ΔP across orifice.

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# LRB24-SA Actuator, Proportional



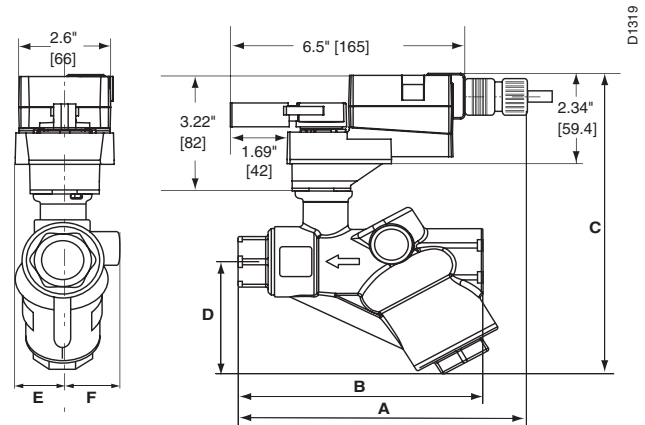
**Model**  
LRB24-SA

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	proportional (2-10 VDC)
Angle of rotation	90°, adjustable with mechanical stop
Position indication	handle
Manual override	external push button
Running time	90 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

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

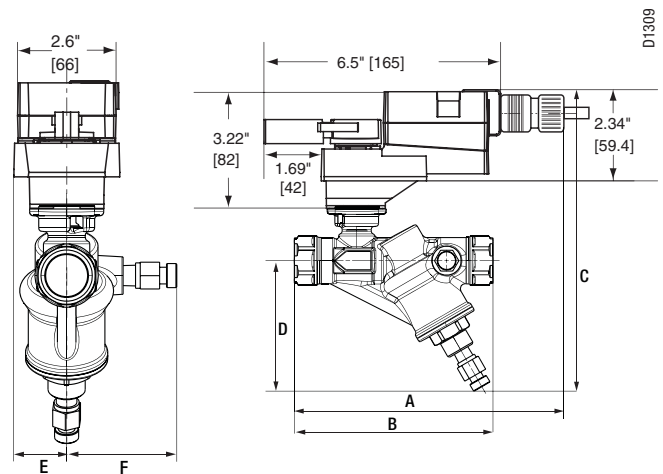
**Valve is supplied at maximum flow in the full open position only. Field adjustment is necessary to achieve lower flow.**

## 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]	7.13" [181]	2.34" [59]	1.48" [38]	1.48" [38]
¾"	20	7.98" [203]	5.4" [137]	7.13" [181]	2.34" [59]	1.48" [38]	1.48" [38]
1"	25	8.9" [226]	6.85" [174]	8.02" [204]	3.23" [82]	1.6" [41]	1.6" [41]

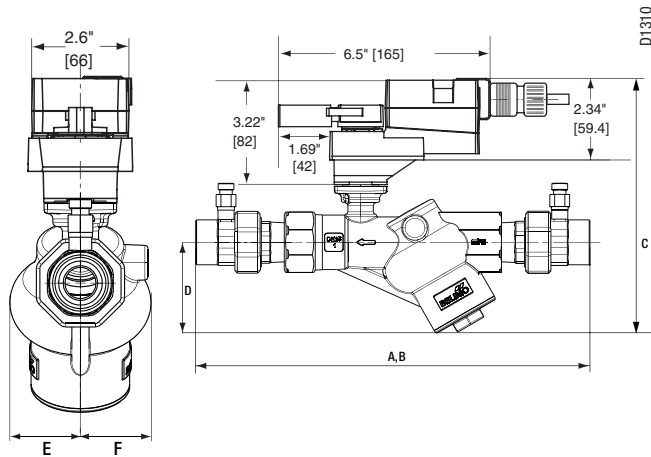
## Dimensions with PT Port (Inches [mm])



Valve Nominal Size		Dimensions (Inches [mm])					
In.	DN [mm]	A	B	C	D	E	F
½"	15	7.68" [195]	4.47" [114]	8.47" [215]	3.54" [90]	1.48" [38]	2.4" [61]
¾"	20	7.98" [203]	5.4" [137]	8.47" [215]	3.54" [90]	1.48" [38]	2.4" [61]

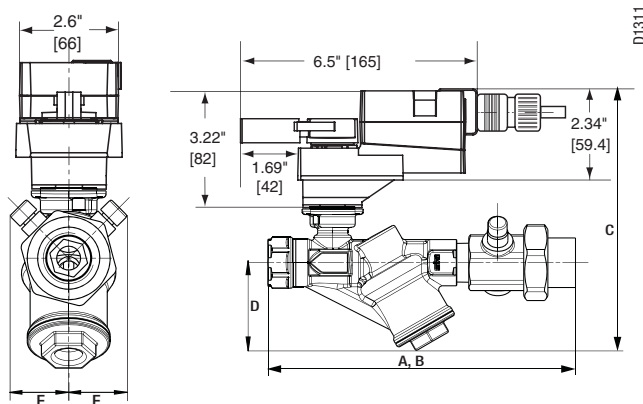
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### Dimensions with PT Port (Inches [mm])



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]

### Dimensions with Orifice\* (Inches [mm])



Valve Nominal Size		Dimensions (Inches [mm])					
In.	DN [mm]	A	B	C	D	E	F
½"	15	7.6" [193]	7.6" [193]	4.05" [103]	2.34" [59]	1.25" [32]	1.25" [32]
¾"	20	8.53" [217]	8.53" [217]	4.05" [103]	2.34" [59]	1.25" [32]	1.25" [32]
1"	25	8.9" [226]	8.9" [226]	8.02" [204]	3.23" [82]	1.6" [41]	1.6" [41]

\*Flow verification orifice available August 2013.

### 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.
- 5** Only connect common to neg. (-) leg of control circuits.
- 7** A 500 Ω resistor converts the 4 to 20 mA control signal to 2 to 10 VDC.
- 18** Actuators with plenum rated cable do not have numbers on wires; use color codes instead.

#### APPLICATION NOTES

- 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.

