

J Series

Electric Zone Valves for Assembly in the Field

Description

J Series Electric Zone Valves accurately control the flow of saturated steam, hot water, and chilled water through coils and heat exchangers of all types, in a wide range of HVAC applications. The spring return, two-position design with synchronous motor has been proven reliable in millions of installations worldwide. The actuator can be removed from the valve quickly and easily, simplifying installation and servicing. No special linkage kit or commissioning is required.

Refer to the *J Series Zone Valves Product Bulletin (LIT-977282)* for important product application information.

Features

- quick and simple actuator removal eases installation and provides quick actuator replacement during service
- bubble-tight shutoff conserves energy and accurately controls zone temperature for increased comfort
- high closeoff pressure actuator option satisfies demanding requirements of high rise buildings and high pressure pumping systems
- interchangeable actuators allow field conversion from normally open to normally closed without re-piping
- choice of end connections provides increased versatility and replacement capability



J Series Electric Zone Valve

Selection Charts

J Series On/Off Valves – Standard Closeoff (Part 1 of 2)

Size In.	Cv	Closeoff psig	Valve – End Connections			Actuators			
			NPT	Sweat	Inverted Flare	AC 24 V	AC 120 V	AC 208 V	AC 230 V
Two-Way, Spring Closed, Standard Temperature (32 to 200°F, 32 to 104°F Ambient)									
1/2	1	60	JT2221	JT2211	—	JG13A020	JG13B020	JG13D020	JG13U020
	2.5	40	JT2222	JT2212	—				
	3.5	25	JT2223	JT2213	—				
3/4	2.5	40	JT2322	JT2312	—				
	3.5	25	JT2323	JT2313	JT2343				
1	8	17	JT2427	JT2417	—				
1-1/4	8	17	—	JT2515	—				
Two-Way, Spring Open, Standard Temperature (32 to 200°F, 32 to 104°F Ambient)									
1/2	1	60	JT2221	JT2211	—	JG23A020	JG23B020	JG23D020	JG23U020
	2.5	40	JT2222	JT2212	—				
	3.5	25	JT2223	JT2213	—				
3/4	2.5	40	JT2322	JT2312	—				
	3.5	25	JT2323	JT2313	JT2343				
1	8	17	JT2427	JT2417	—				
1-1/4	8	17	—	JT2515	—				
Three-Way, Spring Return Port B Closed, Standard Temperature (32 to 200°F, 32 to 104°F Ambient)									
1/2	4	30	JT3223	JT3213	—	JG13A020	JG13B020	JG13D020	JG13U020
3/4	5	25	JT3325	JT3315	JT3343				
1	8	20	JT3427	JT3417	—				
1-1/4	8	20	—	JT3517	—				
Two-Way, Spring Closed, High Temperature (32 to 250°F, 15 psig steam, 32 to 169°F Ambient)									
1/2	1	60	JS2221	JS2211	—	JG14A020	JG14B020	—	—
	2.5	40	JS2222	JS2212	—				
	3.5	25	JS2223	JS2213	—				
3/4	2.5	40	JS2322	JS2312	—				
	3.5	25	JS2323	JS2313	JS2343				
1	8	17	JS2427	JS2417	—				
1-1/4	8	17	—	JS2515	—				
Two-Way, Spring Open, High Temperature (32 to 250°F, 15 psig steam, 32 to 169°F Ambient)									
1/2	1	60	JS2221	JS2211	—	JG24A020	JG24B020	—	—
	2.5	40	JS2222	JS2212	—				
	3.5	25	JS2223	JS2213	—				
3/4	2.5	40	JS2322	JS2312	—				
	3.5	25	JS2323	JS2313	JS2343				
1	8	17	JS2427	JS2417	—				
1-1/4	8	17	—	JS2515	—				

The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products. © 2011 Johnson Controls, Inc. www.johnsoncontrols.com



Electric Zone Valves for Assembly in the Field (Continued)

J Series On/Off Valves – Standard Closeoff (Part 2 of 2)

Size In.	Cv	Closeoff psig	Valve – End Connections			Actuators			
			NPT	Sweat	Inverted Flare	AC 24 V	AC 120 V	AC 208 V	AC 230 V
Three-Way, Spring Return Port B Closed, High Temperature (32 to 250°F, 15 psig steam, 32 to 169°F Ambient)									
1/2	4	30	JS3223	JS3213	—	JG14A020	JG14B020	—	—
3/4	5	25	JS3325	JS3315	JS3343				
1	8	20	JS3427	JS3417	—				
1-1/4	8	20	—	JS3517	—				

J Series On/Off Valves – High Closeoff

Size In.	Cv	Closeoff psig	Valve – End Connections			Actuators		
			NPT	Sweat	Inverted Flare	AC 24 V	AC 120 V	
Two-Way, Spring Closed, Standard Temperature (32 to 200°F, 32 to 104°F Ambient)								
1/2	1	75	JT2221	JT2211	—	JH13A020	JH13B020	
	2.5	50	JT2222	JT2212	—			
	3.5	30	JT2223	JT2213	—			
3/4	2.5	50	JT2322	JT2312	—			
	3.5	30	JT2323	JT2313	JT2343			
1	8	20	JT2427	JT2417	—			
1-1/4	8	20	—	JT2515	—			
Two-Way, Spring Open, Standard Temperature (32 to 200°F, 32 to 104°F Ambient)								
1/2	1	75	JT2221	JT2211	—	JH23A020	JH23B020	
	2.5	50	JT2222	JT2212	—			
	3.5	30	JT2223	JT2213	—			
3/4	2.5	50	JT2322	JT2312	—			
	3.5	30	JT2323	JT2313	JT2343			
1	8	20	JT2427	JT2417	—			
1-1/4	8	20	—	JT2515	—			
Three-Way, Spring Return Port B Closed, Standard Temperature (32 to 200°F, 32 to 104°F Ambient)								
1/2	4	30	JT3223	JT3213	—	JH13A020	JH13B020	
3/4	5	25	JT3325	JT3315	JT3343			
1	8	20	JT3427	JT3417	—			
1-1/4	8	20	—	JT3517	—			
Two-Way, Spring Closed, High Temperature (32 to 250°F, 15 psig steam, 32 to 169°F Ambient)								
1/2	1	75	JS2221	JS2211	—	JH14A020	JH14B020	
	2.5	50	JS2222	JS2212	—			
	3.5	30	JS2223	JS2213	—			
3/4	2.5	50	JS2322	JS2312	—			
	3.5	30	JS2323	JS2313	JS2343			
1	8	20	JS2427	JS2417	—			
1-1/4	8	20	—	JS2515	—			
Two-Way, Spring Open, High Temperature (32 to 250°F, 15 psig steam, 32 to 169°F Ambient)								
1/2	1	75	JS2221	JS2211	—	JH24A020	JH24B020	
	2.5	50	JS2222	JS2212	—			
	3.5	30	JS2223	JS2213	—			
3/4	2.5	50	JS2322	JS2312	—			
	3.5	30	JS2323	JS2313	JS2343			
1	8	20	JS2427	JS2417	—			
1-1/4	8	20	—	JS2515	—			
Three-Way, Spring Return Port B Closed, High Temperature (32 to 250°F, 15 psig steam, 32 to 169°F Ambient)								
1/2	4	30	JS3223	JS3213	—	JH14A020	JH14B020	
3/4	5	25	JS3325	JS3315	JS3343			
1	8	20	JS3427	JS3417	—			
1-1/4	8	20	—	JS3517	—			

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Electric Zone Valves for Assembly in the Field (Continued)

J Series Modulating Control Valves - Spring Return

Size In.	Cv	Valve – End Connection		Actuator					
				Spring Return Open			Spring Return Closed		
		NPT	Sweat	Closeoff psig	AC 24 V Floating Control	DC 0 – 10 V Proportional	Closeoff psig ¹	AC 24 V Floating Control	DC 0 – 10 V Proportional
Two-Way – Spring Return									
1/2	1	JM2221	JM2211	50	JT23A000	JP23A000	50/50	JT13A000	JP13A000
	2	JM2222	JM2212	50			50/20		
	4	JM2223	JM2213	35			35/20		
3/4	2	JM2322	JM2312	50			50/20		
	4	JM2323	JM2313	35			35/20		
	7.5	JM2327	JM2317	35			35/15		
1	4	—	JM2413	35			35/20		
	8	JM2427	JM2417	35			35/15		
	1-1/4	—	JM2517	35			35/15		
Three-Way – Spring Return									
1/2	1	JM3221	JM3211	50	JT23A000	JP23A000	50/50	JT13A000	JP13A000
	2	JM3222	JM3212	50			50/20		
	4	JM3223	JM3213	35			35/20		
3/4	2	JM3322	JM3312	50			50/20		
	4	JM3323	JM3313	35			35/20		
	7.5	JM3327	JM3317	35			35/15		
1	4	—	JM3413	35			35/20		
	8	JM3427	JM3417	35			35/15		
	1-1/4	—	JM3517	35			35/15		

1. Operating/ power failure

J Series Modulating Control Valves - Non-Spring Return

Size In.	Cv	Valve – End Connection		Actuator (Non-Spring Return)		
				Closeoff psig	AC 24 V Floating Control	DC 0 – 10 V Proportional
Two-Way – Non-Spring Return						
1/2	1	JM2221	JM2211	50	JT33A00T	JP33A000
	2	JM2222	JM2212	50		
	4	JM2223	JM2213	35		
3/4	2	JM2322	JM2312	50		
	4	JM2323	JM2313	35		
	7.5	JM2327	JM2317	35		
1	4	—	JM2413	35		
	8	JM2427	JM2417	35		
	1-1/4	—	JM2517	35		
Three-Way – Non-Spring Return						
1/2	1	JM3221	JM3211	50	JT33A00T	JP33A000
	2	JM3222	JM3212	50		
	4	JM3223	JM3213	35		
3/4	2	JM3322	JM3312	50		
	4	JM3323	JM3313	35		
	7.5	JM3327	JM3317	35		
1	4	—	JM3413	35		
	8	JM3427	JM3417	35		
	1-1/4	—	JM3517	35		

Repair Information

If the J Series Electric Zone Valve fails to operate within its specifications, replace the unit. For a replacement valve, contact the nearest Johnson Controls® representative.



Electric Zone Valves for Assembly in the Field (Continued)

Technical Specifications

J Series Electric Zone Valves		
Service ¹	Hot Water, Chilled Water, 50/50 Glycol Solutions and 15 psig steam for HVAC Systems	
End Connections	Threaded (NPT), Sweat (all models) Inverted Flare (JT and JS On/Off Series Only)	
Fluid Temperature Limits	JT Series	32 to 200°F (0 to 93°C) Water in ambient temperature of 32 to 104°F (0 to 40°C)
	JS Series	32 to 250°F (0 to 121°C) Water in ambient temperature of 32 to 169°F (0 to 76°C)
	JM Series	32 to 200°F (0 to 93°C) Water in ambient temperature of 32 to 125°F (0 to 52°C)
Valve Body Pressure Rating	300 psig (2,067 kPa) System Operating Pressure	
Cycle Times	JT or JS Series	Bubble-Tight Shutoff
	JM Series	0.01% of Maximum Flow per ANSI/FCI 70-2, Class 4
Materials	Body	Forged Brass
	Stem	Brass (Hard Chrome Plated)
	Base Plate and Bearing Plate	Stainless Steel
	Actuator Housing (JS/JT Series)	Stainless Steel
	Actuator Housing (JM Series)	High Temperature Plastic
	Cover (JS/JT Series)	Aluminum
	Valve Operating Paddle (JS/JT Series)	Standard Temperature Models: Buna-N Rubber High Temperature Models: Saturated Nitrile
	Valve Plug/Paddle (JM Series)	High Temperature Thermoplastic/Rubber
Stem Assembly O-Ring Seals	Viton™ Stem Assembly O-Ring Seals	
Control Signal	JS and JT Series	AC 24 V, 120 V, 208 V or 230 V, Two-wire On/Off
	JM Series	"T" Type, Three-Wire Floating, AC 24 V at 60 Hz "P" Type Proportional Control Factory Setting: 0 to 10 VDC (1 to 9 VDC Actual) 0 to 5 VDC, 5 to 10 VDC jumper selectable
Control Action	JM Series	"P" Type Proportional Control Factory Setting: Direct Acting valve opens port "B" as signal increases. Jumper selectable
Input Impedance	JM Series	"P" Type Proportional Control; Voltage Input: 200,000 ohms; Current Input: 300 ohms
Agency Approval	All actuators UL listed, File E6688 or E27734 CNN XAPX (U.S.) XAPX7 (Canada), CE Mark	
Power Requirements	JS/JT Series	AC 24 V, 60 Hz (6.5 W), 7 VA AC 120 V, 60 Hz (6.5 W), 7 VA AC 208 V, 60 Hz (6.5 W), 7 VA AC 230 V, 60 Hz (6.5 W), 7 VA
	JM Series	AC 24 V, 60 Hz, 1.6 VA
Electrical Connections	JS/JT Series	18 in. (457 mm) Wire Leads
	JM Series	Terminal Block
Shipping Weight	JS/JT Series	1.0 lbs (454 g), maximum actuator and valve body
	JM Series	1.9 lbs (860 g), maximum actuator and valve body

1. Proper water treatment is recommended; refer to VDI 2035 Standard.