J Series

LIT-1924210

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 simply 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**	—				
1	3.5	25	**JT2323**	**JT2313**	**JT2343**				
	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**	—				

J Series 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	—		

J Series 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	8	—	**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	8	—	**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)		
		NPT	Sweat	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	8	—	**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	8	—	**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.

J Series 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.