

M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature, Two-Way Butterfly Valves (with Weather Shield)

Description

VF Series M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature, Two-Way Butterfly Valves are specifically designed for a wide range of HVAC applications, including two-position and modulating control of hot, chilled, or condenser water, and 50/50 glycol solutions. These valves are also bidirectional, allowing positive shutoff with the flow in either direction.

Two-way configurations are available in sizes 2 through 6 in. non-spring return, and 2 through 5 in. spring return. M9000 electrically actuated, weather shield models feature an integral handle for manual positioning of the valve, independent of a power supply.

Refer to the *VF Series Standard-Pressure, Standard-Temperature Butterfly Valves Product Bulletin (LIT-977205P)* for important product application information.

Features

- low seating/unseating torques
- bubble-tight shutoff
- broad range of pre-assembled actuators
- compatible with all types of American National Standards Institute (ANSI) 125/150 slip-on and weld-neck flanges
- high-integrity components
- M9000 electric actuators available with or without a rugged, factory-installed weather shield
- M9000 electric actuators available with or without end switches

Repair Information

If the VF Series Butterfly Valve fails to operate within its specifications, refer to the *VF Series Standard-Pressure, Standard-Temperature Butterfly Valves Product Bulletin (LIT-977205P)* for a list of repair parts available.



Two-Way Valve with M9000 Series Electric Actuator (with Weather Shield)

Butterfly Valves and Actuators

Selection Chart

M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature, Two-Way Butterfly Valves (with Weather Shield)
(Part 1 of 2)

Valve Code Number	Size, in.	Cv at 90°	Cv at 70°	Closeoff Pressure, psig ¹	Two-Way Valve with M9000 Series Electric Actuator (with Weather Shield)			
					Spring Open	Spring Closed	Spring Open	Spring Closed
					Spring Return — Floating Control			
					M9220-AGA-3 without End Switches		M9220-AGC-3 with 2 End Switches	
VWN020HB	2	144	84	175	VWN020HB+92NAGA	VWC020HB+94NAGA	VWN020HB+92NAGC	VWC020HB+94NAGC
VWN025HB	2-1/2	282	163	175	VWN025HB+92NAGA	VWC025HB+94NAGA	VWN025HB+92NAGC	VWC025HB+94NAGC
VWN030HB	3	461	267	175	VWN030HB+92NAGA	VWC030HB+94NAGA	VWN030HB+92NAGC	VWC030HB+94NAGC
VWN040LB	4	841	496	50	VWN040LB+92NAGA	VWC040LB+94NAGA	VWN040LB+92NAGC	VWC040LB+94NAGC
VWN040HB	4	841	496	175	VWN040HB292NAGA ²	VWC040HB294NAGA ²	VWN040HB292NAGC ²	VWC040HB294NAGC ²
VWN050LB	5	1,376	775	50	VWN050LB292NAGA ²	VWC050LB294NAGA ²	VWN050LB292NAGC ²	VWC050LB294NAGC ²
					Spring Return — On/Off			
					M9220-BGA-3 without End Switches		M9220-BGC-3 with 2 End Switches	
VWN020HB	2	144	84	175	VWN020HB+92NBGA	VWC020HB+94NBGA	VWN020HB+92NBGC	VWC020HB+94NBGC
VWN025HB	2-1/2	282	163	175	VWN025HB+92NBGA	VWC025HB+94NBGA	VWN025HB+92NBGC	VWC025HB+94NBGC
VWN030HB	3	461	267	175	VWN030HB+92NBGA	VWC030HB+94NBGA	VWN030HB+92NBGC	VWC030HB+94NBGC
VWN040LB	4	841	496	50	VWN040LB+92NBGA	VWC040LB+94NBGA	VWN040LB+92NBGC	VWC040LB+94NBGC
VWN040HB	4	841	496	175	VWN040HB292NBGA ²	VWC040HB294NBGA ²	VWN040HB292NBGC ²	VWC040HB294NBGC ²
VWN050LB	5	1,376	775	50	VWN050LB292NBGA ²	VWC050LB294NBGA ²	VWN050LB292NBGC ²	VWC050LB294NBGC ²
					Spring Return — 0 to 10 VDC Proportional Control			
					M9220-GGA-3 without End Switches		M9220-GGC-3 with 2 End Switches	
VWN020HB	2	144	84	175	VWN020HB+92NGGA	VWC020HB+94NGGA	VWN020HB+92NGGC	VWC020HB+94NGGC
VWN025HB	2-1/2	282	163	175	VWN025HB+92NGGA	VWC025HB+94NGGA	VWN025HB+92NGGC	VWC025HB+94NGGC
VWN030HB	3	461	267	175	VWN030HB+92NGGA	VWC030HB+94NGGA	VWN030HB+92NGGC	VWC030HB+94NGGC
VWN040LB	4	841	496	50	VWN040LB+92NGGA	VWC040LB+94NGGA	VWN040LB+92NGGC	VWC040LB+94NGGC
VWN040HB	4	841	496	175	VWN040HB292NGGA ²	VWC040HB294NGGA ²	VWN040HB292NGGC ²	VWC040HB294NGGC ²
VWN050LB	5	1,376	775	50	VWN050LB292NGGA ²	VWC050LB294NGGA ²	VWN050LB292NGGC ²	VWC050LB294NGGC ²

The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult the Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products. © 2014 Johnson Controls, Inc.

M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature, Two-Way Butterfly Valves (with Weather Shield) (Continued)

M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature, Two-Way Butterfly Valves (with Weather Shield)
(Part 2 of 2)

Valve Code Number	Size, in.	Cv at 90°	Cv at 70°	Closeoff Pressure, psig ¹	Two-Way Valve with M9000 Series Electric Actuator (with Weather Shield)				
					Spring Open	Spring Closed	Spring Open	Spring Closed	
					Two-Way — Non-Spring Return				
					On/Off (Floating) Control			0 to 10 VDC Proportional Control	
					M91xx-AGA-2 without switches	M91xx-AGC-2 with 2 Switches	M91xx-GGA-2 without switches	M91xx-GGC-2 with 2 Switches	
VWN020HB	2	144	84	175	VWN020HB+916AGA	VWN020HB+916AGC	VWN020HB+916GGA	VWN020HB+916GGC	
VWN025HB	2-1/2	282	163	175	VWN025HB+916AGA	VWN025HB+916AGC	VWN025HB+916GGA	VWN025HB+916GGC	
VWN030HB	3	461	267	175	VWN030HB+916AGA	VWN030HB+916AGC	VWN030HB+916GGA	VWN030HB+916GGC	
VWN040HB	4	841	496	175	VWN040HB+924AGA	VWN040HB+924AGC	VWN040HB+924GGA	VWN040HB+924GGC	
VWN050LB	5	1376	775	50	VWN050LB+924AGA	VWN050LB+924AGC	VWN050LB+924GGA	VWN050LB+924GGC	
VWN050HB	5	1376	775	175	VWN050HB2924AGA ²	VWN050HB2924AGC ²	VWN050HB2924GGA ²	VWN050HB2924GGC ²	
VWN060LB	6	1850	1025	50	VWN060LB2924AGA ²	VWN060LB2924AGC ²	VWN060LB2924GGA ²	VWN060LB2924GGC ²	

1. Valves rated for 175 psig closeoff have 75 psig maximum dead-end service rating. Valves rated for 50 psig closeoff are not rated for dead-end service.
2. Valve assemblies have two actuators mounted in tandem.

Technical Specifications

M9000 Electrically Actuated, Standard-Pressure, Standard-Temperature, Two-Way Butterfly Valves (with Weather Shield) ¹		
Service	Hot, Chilled, or Condenser Water, and 50/50 Glycol Solutions (Not Designed for Use in Steam Applications)	
Body Styles and Sizes	Two-Way, 2 through 6 in., Fully Lugged	
Fluid Temperature Limits	-40°F to 250°F (-40°C to 121°C)	
Body Pressure Rating	175 psig	
Maximum Fluid Velocity	30 ft/second (9 m/second)	
Rangeability	Refer to the <i>VF Series Standard-Pressure, Standard-Temperature Butterfly Valves Product Bulletin (LIT-977205P)</i> .	
Leakage	Bubble Tight	
Flow Characteristics	Modified Equal Percentage	
Materials	Body	Cast Iron ASTM A126 Class B
	Tee (Three-Way Valves Only)	Cast Iron
	Disc	Ductile Iron, Nylon 11 Coated, ASTM A536 Gr 65-45-12
	Seat	Ethylene Propylene Diene Monomer (EPDM)
	Stem	416 Stainless Steel
Ambient Temperature Limits	Storage	-20 to 150°F (-29 to 66°C), Preferably 40 to 85°F (4 to 29°C)
	Operating	Spring-Return Actuator: -40 to 131°F (-40 to 55°C) Non-Spring-Return Actuator: -4 to 122°F (-20 to 50°C)
Weather Shield Rating	National Electrical Manufacturers' Association (NEMA) 4	

1. Refer to the *VF Series Standard-Pressure, Standard-Temperature Butterfly Valves Product Bulletin (LIT-977205P)* for actuator specifications.