

VF Series Two-Way, Industrial-Grade, Non-Spring-Return, VA-90xx Series Electrically Actuated, High-Pressure, High-Temperature Butterfly Valve Assemblies

Description

VF Series Two-Way, Industrial-Grade, Non-Spring-Return, VA-90xx Series Electrically Actuated, High-Pressure, High-Temperature Butterfly Valve Assemblies are specifically designed for a wide range of HVAC applications, including two-position and modulating/throttling control of hot water, chilled water, condenser water, and steam. Refer to the *VF Series High-Pressure, High-Temperature Butterfly Valves for Steam Service Application Note (LIT 977321)* for more information on steam applications. These lug-style valves offer bidirectional shutoff at full-rated American National Standards Institute (ANSI) Class 150 and 300 operating pressures, increasing the range of applications—particularly in high-rise building HVAC control applications. ANSI Class 150 and 300 models are also suitable for steam applications.

Refer to the *VF Series High-Pressure, High-Temperature Butterfly Valves Product Bulletin (LIT-977208)* for important product application information.

Features

- compatible with all types of ANSI 150/300 slip-on and weld-neck flanges
- high-pressure, high-temperature design
- bidirectional shutoff, dead-end service
- live-loaded seat design with fully encased O-ring
- double offset stem design
- broad range of compact pre-assembled actuators available
- direct actuator-to-stem mounting

Repair Information

If the VF Series Butterfly Valve Assembly fails to operate within its specifications, refer to the *VF Series High-Pressure, High-Temperature Butterfly Valves Product Bulletin (LIT-977208)* for a list of repair parts available.



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Butterfly Valves and Actuators

Selection Chart

Valve Code Number	Actuator				AC 120 V Powered Actuator		AC 24 V Powered Actuator	
	Size, in.	Cv at 90°	Cv at 70°	Closeoff Pressure, psig	On/Off	0 to 10 VDC Proportional	On/Off	0 to 10 VDC Proportional
Two-Way, Normally Closed — ANSI Class 300 Flanges¹								
VFC-025ZE	2-1/2	160	100	550	VFC-025ZE-723D	VFC-025ZE-703N	VFC-025ZE-725D4	VFC-025ZE-705N4
VFC-030ZE	3	185	155		VFC-030ZE-723D	VFC-030ZE-703N	VFC-030ZE-725D4	VFC-030ZE-705N4
VFC-040ZE	4	375	315		VFC-040ZE-723D	VFC-040ZE-703N	VFC-040ZE-725D4	VFC-040ZE-705N4
VFC-050ZE	5	790	500		VFC-050ZE-725D	VFC-050ZE-705N	VFC-050ZE-725D4	VFC-050ZE-705N4
VFC-060ZE	6	1,000	710		VFC-060ZE-726D	VFC-060ZE-706N	VFC-060ZE-727D4	VFC-060ZE-707N4
VFC-080ZE	8	2,000	1,360		VFC-080ZE-727D	VFC-080ZE-707N	VFC-080ZE-727D4	VFC-080ZE-707N4
VFC-100ZE	10	2,650	1,740		VFC-100ZE-927D	VFC-100ZE-907N		
VFC-120ZE	12	4,000	2,500		VFC-120ZE-928D	VFC-120ZE-908N		
VFC-140ZE	14	4,100	2,600		VFC-140ZE-928D	VFC-140ZE-908N		
Two-Way, Normally Closed — ANSI Class 150 Flanges²								
VFC-025VE	2-1/2	160	100	240	VFC-025VE-722D	VFC-025VE-702N	VFC-025VE-722D4	VFC-025VE-702N4
VFC-030VE	3	185	155		VFC-030VE-722D	VFC-030VE-702N	VFC-030VE-722D4	VFC-030VE-702N4
VFC-040VE	4	375	315		VFC-040VE-722D	VFC-040VE-702N	VFC-040VE-722D4	VFC-040VE-702N4
VFC-050VE	5	790	500		VFC-050VE-724D	VFC-050VE-704N	VFC-050VE-725D4	VFC-050VE-705N4
VFC-060VE	6	1,350	750		VFC-060VE-725D	VFC-060VE-705N	VFC-060VE-725D4	VFC-060VE-705N4
VFC-080VE	8	2,800	1,590		VFC-080VE-726D	VFC-080VE-706N	VFC-080VE-727D4	VFC-080VE-707N4
VFC-100VE	10	4,300	2,430		VFC-100VE-727D	VFC-100VE-707N	VFC-100VE-727D4	VFC-100VE-707N4
VFC-120VE	12	6,650	3,750		VFC-120VE-728D	VFC-120VE-708N		
VFC-140VE	14	7,650	4,300		VFC-140VE-927D	VFC-140VE-907N		
VFC-160VE	16	9,800	5,510		VFC-160VE-928D	VFC-160VE-908N		

1. Maximum closeoff pressure for ANSI Class 300 valves is 740 psig (5,102.1 kPa) for fluid temperatures below 100°F (37.8°C), and 550 psig (3,790 kPa) for fluid temperatures at 250°F (121.1°C). Maximum steam pressure is 150 psig (1,034.2 kPa) for on/off service, and 50 psig (344.8 kPa) for proportional service.
 2. Maximum closeoff pressure for ANSI Class 150 valves is 285 psig (1,965 kPa) for fluid temperatures below 100°F (37.8°C), and 240 psig (1,654.8 kPa) for fluid temperatures at 250°F (121.1°C). Maximum steam pressure is 150 psig (1,034.2 kPa) for on/off service, and 50 psig (344.8 kPa) for proportional service.

VF Series Two-Way, Industrial-Grade, Non-Spring-Return, VA-90xx Series Electrically Actuated, High-Pressure, High-Temperature Butterfly Valve Assemblies (Continued)

Technical Specifications

VF Series Two-Way, Industrial-Grade, Non-Spring-Return, VA-90xx Series Electrically Actuated, High-Pressure, High-Temperature Butterfly Valve Assemblies ¹		
Service		Hot, Chilled, or Condenser Water, and Steam ²
Body Styles and Sizes		Two-Way, 2-1/2 through 16 in., Fully Lugged ³
Fluid Temperature Limits		-20 to 500°F (-29 to 260°C)
Maximum Closeoff Pressure	2-1/2 through 16 in. ANSI Class 150 Valves (Type V)	240 psig (1,654 kPa) at 250°F (121°C) Fluid Temperature, Bidirectional ³ 240 psig (1,654 kPa) at 250°F (121°C) Fluid Temperature, Dead-End Service ^{3, 4}
	2-1 / 2 through 14 in. ANSI Class 300 Valves (Type Z)	550 psig (3,790 kPa) at 250°F (121°C) Fluid Temperature, Bidirectional ^{3, 5} 550 psig (3,790 kPa) at 250°F (121°C) Fluid Temperature, Dead-End Service ^{3, 4, 5}
Materials	Body	Carbon Steel, ASTM A216 GR WCB/A516 GR 70
	Disc	Stainless Steel, ASTM A 351 GR CF8M
	Seat Assembly	RTFE with Silicone Rubber O-Ring
	Seat Retainer	Carbon Steel, ASTM A516 GR 70
	Stem	17-4 PH Stainless Steel, ASTM A564-Type 630
Ambient Storage Temperature Limits		-20 to 150°F (-29 to 66°C); Preferably 40 to 85°F (4 to 29°C)

Butterfly Valves and Actuators

1. Refer to the *VF Series High-Pressure, High-Temperature Butterfly Valves Product Bulletin (LIT-977208)* for actuator specifications.
2. Types **V** and **Z** valves are rated for 150 psig (1,034 kPa) saturated steam at 366°F (186°C) for two-position applications, and 50 psig (345 kPa) saturated steam at 297°F (147°C) for modulating applications. Refer to the *VF Series High-Pressure, High-Temperature Butterfly Valves for Steam Service Application Note (LIT-977321)* for more information.
3. For 18 in. or larger ANSI Class 150 valves and 16 in. or larger ANSI Class 300 valves, consult the local Johnson Controls® office.
4. The preferred orientation of the seat retainer in dead-end service is against the flange.
5. For pressures between 550 and 740 psig (3,790 and 5,099 kPa), consult the local Johnson Controls office.