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CATALOG KỸ THUẬT · JOHNSON CONTROLS

Van bướm điện VF5000

kiểu kẹp, tai bích · DN50–DN600 · PN25

VF5000 Johnson Controls – van bướm điện PN25 DN50–DN600, kiểu kẹp hoặc tai bích, đĩa inox, áp đóng 1600/2500 kPa, bộ truyền động VA5000 IP67.

Mã: VF5000 · Hãng: Johnson Controls · Hotline: 093 797 2339

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VF5000 Series Butterfly Valves and VA5000 Series Actuators

Overview

DN50...600, PN25

The VF5000 series butterfly valves are used for shutting off or regulating the flow of hot or chilled water in a HVAC system.

Mounted with VA5000 series actuators, the valves operate with a wide range of applications, including two-position and modulating control of hot, chilled, or condenser water, and up to 50/50 glycol solutions.

The valves and actuators are calibrated in the factory and packed separately for ease of delivery and installation.



Features

- Y-sealed stem ensures long-term life span
- Vulcanized liners simplifies on-site installation
- Low torque design saves installation space and cost
- Planetary gear mechanism permits compact structure with high transmission efficiency
- Anti-condensation and over-temperature protection assure reliable long-running
- Automatic clutch empowers seamless switching of manual and motorized operations
- Stereoscopic position display makes clear visibility of valve status

Ordering Information

Table 1: VF5000 series Butterfly Valves

V	F	5	4	6	1	L	S	3	-	C	Butterfly Valve	
		5									Product Series	5=5000 series (PN25)
			4								Valve Type	4=Two way
				6							Pipe Connection	6=Wafer, 3=Lug
					1						Flow Characteristic	1=equal percentage (0% to 60% opening)
						L					Valve Size	Codes and specifications are shown in the product specification table, L=DN400 (16 in.)
							S				Disc Material	S=Stainless Steel (SS304)
								3			Max. Close-off Pressure	3=16 bar 4=25 bar
										C	Identifier	Made in China

Example: VF5461JS3-C=PN25 butterfly valve, wafer connection, DN300, SS304 disc, 16 bar max. close-off pressure (maximum permissible differential pressure at which the motorized butterfly valve will close securely).

*For more details, please consult the Johnson Controls sales representatives.

Butterfly Valve and Actuator

Table 2: VA5000 series Electric Actuators

V	A	5	0	0	3	B	D	C	B	1	-	C	Actuator
		5											Product Series
			0	0	3								5=5000 series
						B							Torque
							D						Codes and specifications are shown in the actuator specification table
								C					Control Type
													B=On/Off C=Modulating
													Power supply
													D= 220VAC+10%, 50Hz
													Auxiliary Switch
													C=Two switches
									B	1			Connection (to valve)
													ISO5211 (Codes and specifications are shown in the actuator specification table)
											C		Identifier
													Made in China

Example: VA5005BDCA1-C=On/Off electric actuator, 50Nm, 220VAC, with 2 auxiliary switches, A1 type up flange connection (to valve).

*For more details, please consult the Johnson Controls sales representatives.

Selection Table

Table 3: 1600kPa Close-off Pressure

VF5000 series Butterfly Valve				Electric Actuator											
PN25, DN50-DN600				On/Off	VA5003BDCA1-C	VA5003BDCB1-C	VA5005BDCB1-C	VA5010BDCB1-C	VA5040BDCC1-C	VA5040BDCC2-C	VA5060BDCC1-C	VA5080BDCC2-C	VA5170BDCE1-C	VA5230BDCE1-C	VA5350BDCE1-C
				Modulating	VA5003CDCA1-C	VA5003CDCB1-C	VA5005CDCB1-C	VA5010CDCB1-C	VA5040CDCC1-C	VA5040CDCC2-C	VA5060CDCC1-C	VA5080CDCC2-C	VA5170CDCE1-C	VA5230CDCE1-C	VA5350CDCE1-C
Size	Kvs	Wafer	Lug	Max. Close-off Pressure (kPa)											
DN50	87	VF5461AS3-C	VF5431AS3-C	1600											
DN65	162	VF5461BS3-C	VF5431BS3-C	1600											
DN80	239	VF5461CS3-C	VF5431CS3-C	1600											
DN100	565	VF5461DS3-C	VF5431DS3-C		1600										
DN125	820	VF5461ES3-C	VF5431ES3-C			1600									
DN150	1536	VF5461FS3-C	VF5431FS3-C				1600								
DN200	3039	VF5461GS3-C	VF5431GS3-C					1600							
DN250	4619	VF5461HS3-C	VF5431HS3-C						1600						
DN300	7137	VF5461JS3-C	VF5431JS3-C							1600					
DN350	10309	VF5461KS3-C	VF5431KS3-C								1600				
DN400	14176	VF5461LS3-C	VF5431LS3-C									1600			
DN450	18776	VF5461MS3-C	VF5431MS3-C										1600		
DN500	24142	VF5461NS3-C	VF5431NS3-C											1600	
DN600	37298	VF5461PS3-C	VF5431PS3-C												1600

Table 4: 2500kPa Close-off Pressure

VF5000 series Butterfly Valve				Electric Actuator												
PN25 DN50 - DN600				On/Off	VA5003BDCA1-C	VA5005BDCA1-C	VA5008BDCB1-C	VA5020BDCB1-C	VA5020BDCB2-C	VA5040BDCC1-C	VA5080BDCD1-C	VA5100BDCD1-C	VA5170BDCD1-C	VA5230BDCD1-C	VA5350BDCD1-C	VA5350BDCD1-C
				Modulating	VA5003CDCA1-C	VA5005CDCA1-C	VA5008CDCB1-C	VA5020CDCB1-C	VA5020CDCB2-C	VA5040CDCC1-C	VA5080CDD1-C	VA5100CDD1-C	VA5170CDD1-C	VA5230CDD1-C	VA5350CDD1-C	VA5350CDD1-C
Size	Kvs	Wafer	Lug	Max. Close-off Pressure (kPa)												
DN50	87	VF5461AS4-C	VF5431AS4-C	2500												
DN65	162	VF5461BS4-C	VF5431BS4-C	2500												
DN80	239	VF5461CS4-C	VF5431CS4-C		2500											
DN100	565	VF5461DS4-C	VF5431DS4-C			2500										
DN125	820	VF5461ES4-C	VF5431ES4-C				2500									
DN150	1536	VF5461FS4-C	VF5431FS4-C					2500								
DN200	3039	VF5461GS4-C	VF5431GS4-C						2500							
DN250	4619	VF5461HS4-C	VF5431HS4-C							2500						
DN300	7137	VF5461JS4-C	VF5431JS4-C								2500					
DN350	10309	VF5461KS4-C	VF5431KS4-C									2500				
DN400	14176	VF5461LS4-C	VF5431LS4-C										2500			
DN450	18776	VF5461MS4-C	VF5431MS4-C											2500		
DN500	24142	VF5461NS4-C	VF5431NS4-C												2500	
DN600	37298	VF5461PS4-C	VF5431PS4-C													2500



Butterfly Valve and Actuator

Technical Specifications

Table 5: Valve Specifications

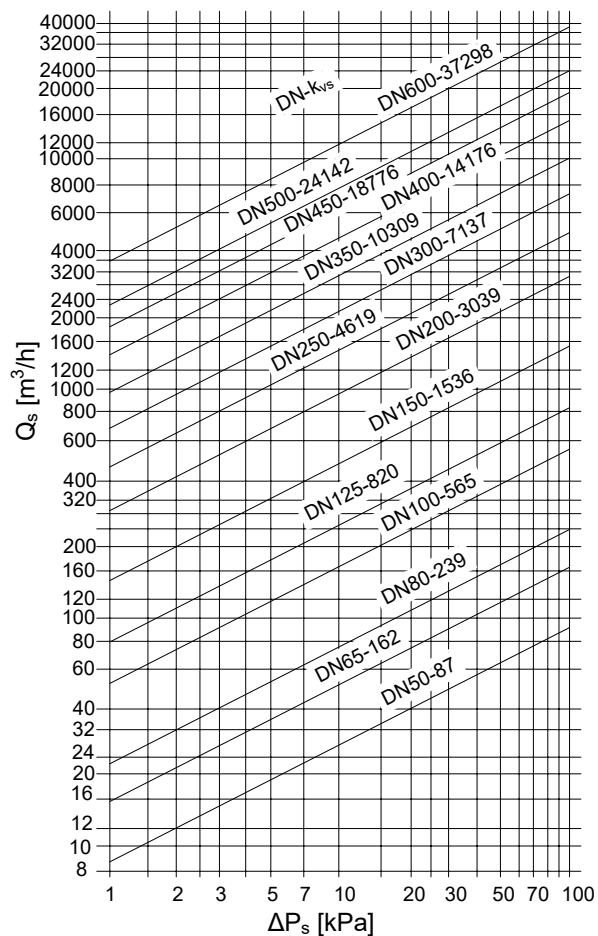
Product Series		VF5000 series Butterfly Valves
Medium		Hot / chilled Water, glycol solution (< 50% concentration) in HVAC system
Medium temperature		-10°C ~ 120°C
Close-off pressure		1600kPa/2500kPa (refer to table 3 and table 4)
Pressure rating		PN25
Materials	Valve Body	Ductile iron (GGG40)
	Seat	EPDM
	Stem	Stainless steel
	Valve disc	Stainless steel (SS304)
Pipe connection		ISO 7005-2 (PN25)

Table 6: Actuator Specifications

Product Series		VA5000 series Electric Actuators												
Model		VA5003	VA5005	VA5008	VA5010	VA5020	VA5040	VA5060	VA5080	VA5100	VA5170	VA5230	VA5350	VA5500
Rated torque (Nm)		35	50	80	100	200	400	600	800	1000	1700	2300	3500	5000
Power consumption (VA)	On/Off models	40	40	40	110	110	180	180	180	230	440	440	440	440
	Modulating models	45	45	45	115	115	185	185	185	235	445	445	445	445
Input signal	On/Off models	220 VAC±10%, 50/60Hz												
	Modulating models	4 – 20mA or 0(2) – 10V												
Input impedance		150 ohms (current signal) or ≥100k ohms (voltage signal) (applicable to modulating models only)												
Output signal	On/Off models	Dry contacts (fully open and closed)												
	Modulating models	4 – 20mA or 0(2) – 10V												
Output impedance		≤750 ohms (current signal) or ≥5k ohms (voltage signal) (applicable to modulating models only)												
Switch contact rating		10A(250VAC), 10A(30VDC)				16A(250VAC), 16A(30VDC)								
Rated stroke		90 ± 1°												
Rated time for full stroke (s)		11	15	22	19	39	29	39	47	47	34	47	76	105
Ambient operating temperature		-20 ~ 65°C (-4 ~149°F)												
CE compliance		EMC: 2014/30/EU, LVD: 2014/35/EU												
IP rating		IP67												

Table 7: Valve flow characteristic

Size	Flow Coefficient Kv								
	10°	20°	30°	40°	50°	60°	70°	80°	90°
DN50	0.1	1.3	6.5	16	30	49	72	86	87
DN65	0.2	4.9	14	27	48	80	125	156	162
DN80	0.3	8.0	16	29	54	96	158	217	239
DN100	2.4	15	37	77	128	209	315	520	565
DN125	6.4	37	64	122	208	338	524	747	820
DN150	7.4	49	105	183	324	522	897	1330	1536
DN200	17	68	174	298	506	856	1439	2437	3039
DN250	22	180	334	571	1003	1682	2803	4203	4619
DN300	35	195	444	801	1379	2369	4697	6494	7137
DN350	38	292	619	1340	2388	3952	6254	9381	10309
DN400	45	401	850	1843	3285	5434	8600	12901	14176
DN450	52	532	1126	2441	4349	7197	11391	17087	18776
DN500	57	684	1448	3138	5593	9254	14646	21969	24142
DN600	62	1057	2238	4849	8641	14298	22627	33941	37298



ΔP_s = Differential pressure across butterfly valve at 90° opening
 Q_s = Flow through butterfly valve at 90° opening

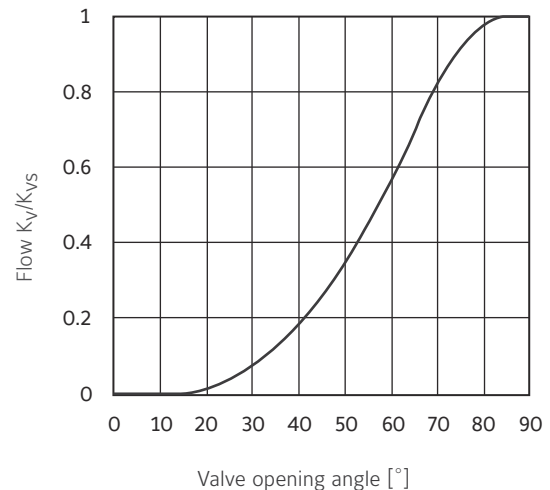


Fig 1: Flow diagram and characteristic



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