

### INTRODUCTION

The RBQF series motorized ball valves are mainly used in refrigeration, air conditioning, and heat pump systems to automatically shut off refrigerant flow. In the event of abnormal conditions such as refrigerant leakage, the valve can quickly cut off the refrigerant flow path, serving as the final safety barrier for systems using flammable or explosive refrigerants.

They are also widely applied in “air-source fluorine / ground-source water” hybrid heat pump systems, where they act as a key solution for improving overall system efficiency.



### FEATURES

- Excellent shut-off performance, achieving zero-leakage valve closure
- Fast response and energy-efficient operation
- Bi-directional flow, suitable for reversible systems such as heat pumps
- Excellent dry-friction resistance

### SPECIFICATIONS

- Applicable refrigerants: R410A, R32, R134A, R454B, etc.
- Medium temperature:  $-30^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$  (duty cycle  $\leq 50\%$ )
- Ambient temperature:  $-30^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$  (duty cycle  $\leq 50\%$ )
- Relative humidity:  $\leq 95\%$  RH
- Full-open pulses: 2800 / 4000
- Maximum working pressure: 4.3 MPa
- Installation orientation:
  - Coil facing upward; valve rotor centerline vertical to the horizontal plane, deviation within  $\pm 15^{\circ}$

### ELECTRICAL PARAMETERS

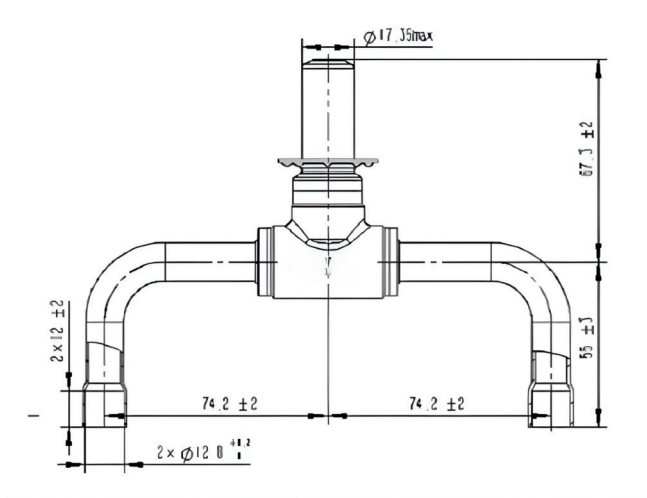
- Rated voltage: 12 V DC ( $\pm 10\%$ ), square wave
- Actuation type: 4-phase, 4-step permanent magnet stepper motor, direct-acting
- Excitation method: 2-2 phase excitation, unipolar drive
- Excitation speed: 100 pps / 200 pps
- End excitation hold time: 0.1-1.0 s
- Coil current: 260 mA per phase (at  $20^{\circ}\text{C}$ )
- Coil resistance:  $46 \pm 3.7 \Omega$  per phase (at  $20^{\circ}\text{C}$ )
- Coil insulation class: Class E
- Protection rating: IP67

### ELECTRICAL PARAMETERS

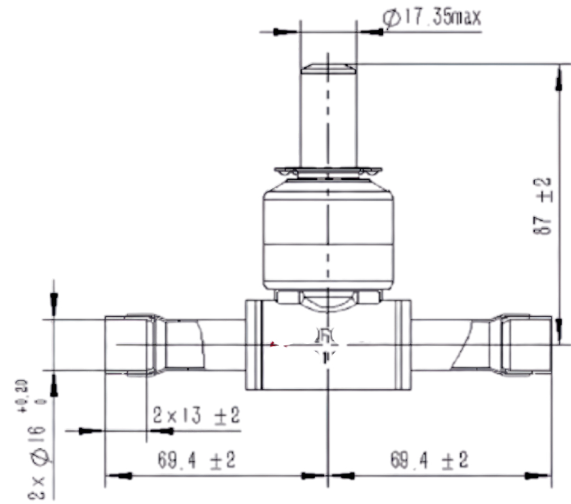
Product Model	Cv (m <sup>3</sup> /h)	Max. Working Pressure	Max. Operating Pressure Differential	Fully Open Pulse	Excitation Speed
		(Mpa)	(Mpa)	Pulse	Pps
RBQF03	4	4.3	3	2800	200
RBQF05	10	4.3	3	2800/4000	100/200
RBQF07	20	4.3	1.5	2800/4000	100/200

### EXTERNAL DIMENSIONS

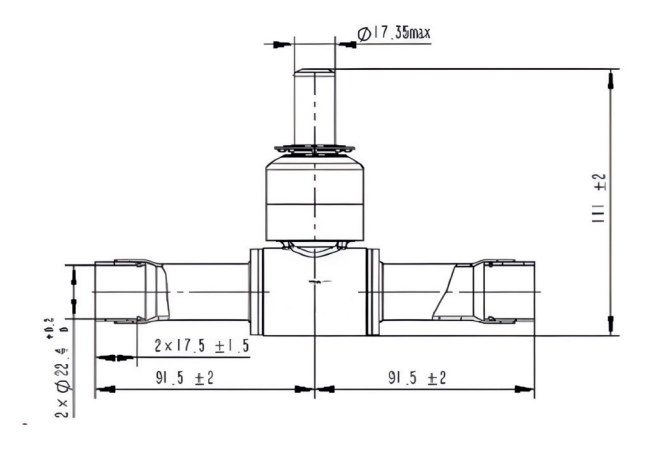
**RBQF03 Valve Body Standard External Dimensions**



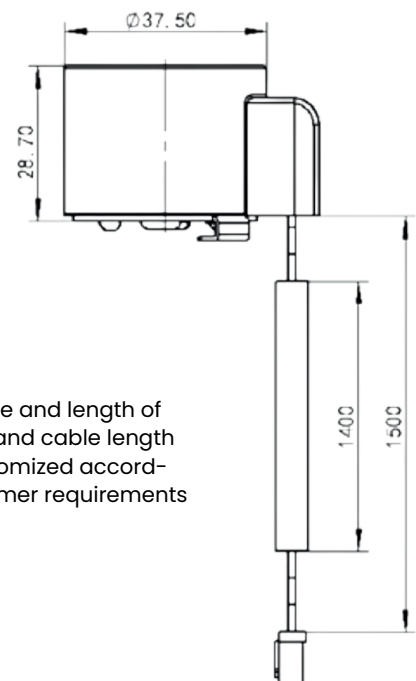
**RBQF05 Valve Body Standard External Dimensions**



**RBQF07 Valve Body Standard External Dimensions**



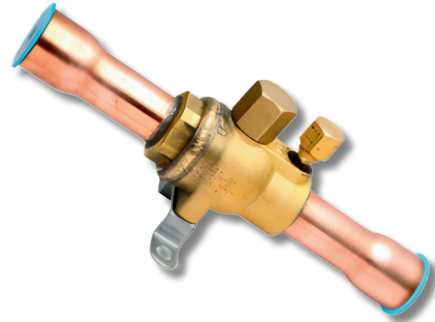
**RBQF03/ RBQF05/RBQF07 Supporting Coils**



Note: The size and length of the copper and cable length can be customized according to customer requirements

## INTRODUCTION

The RVQF series ball valves are suitable for piping in commercial low-temperature refrigeration systems, cold storage, and similar applications. By operating the valve stem, the internal flow path can be opened or shut off. During maintenance, they are used as service valves for tasks such as vacuum evacuation and refrigerant charging.



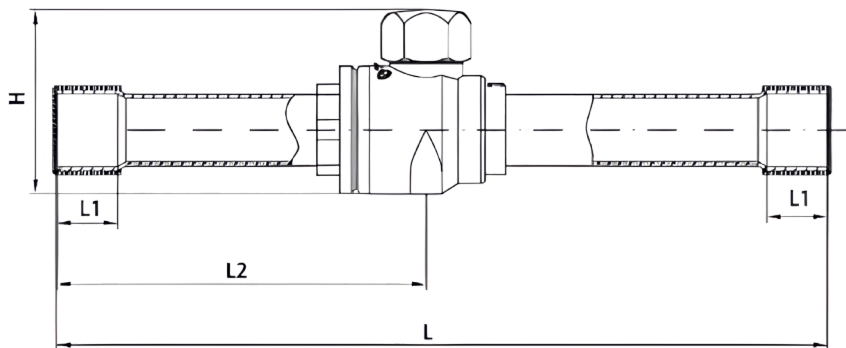
## FEATURES

- Straight-through, full-bore design for low pressure drop and low energy consumption
- Welded valve body and seat structure for higher reliability
- Quarter-turn (1/4 turn) operation from fully open to fully closed for easy handling
- Bi-directional flow
- High-performance sealing materials to prevent external leakage

## SPECIFICATIONS

- Applicable refrigerants: R22, R134A, R407C, R404A, R410A, etc.
- Medium temperature: -30°C to +120°C
- Installation positions: Liquid line, suction line, discharge line, and hot gas piping

## EXTERNAL DIMENSIONS



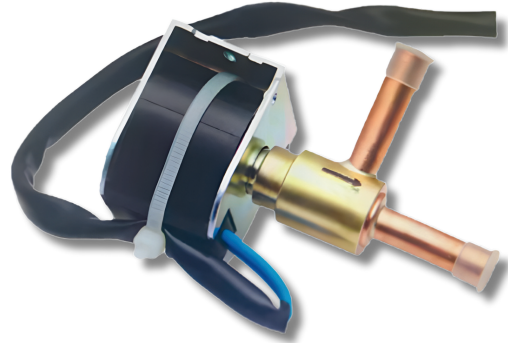
Model	Diameter	Connection Size	L	L1	L2	H
	[mm]	mm(in)	[mm]	[mm]	[mm]	[mm]
RVQF 5JA	Φ13	Φ15.88 (5/8") / Φ14.1	160	12	85	48
RVQF 7JA	Φ20	Φ22.2 (7/8")	207	19	99	92
RVQF 8JA	Φ20	Φ25.4 (1")	223	20	107	92
RVQF 12JA	Φ32	Φ38.1 (3/2")	170	16.7	79	76

### INTRODUCTION

The RSDF series solenoid valves are available in direct-acting and pilot-operated types and are mainly used for refrigerant control in refrigeration, cold storage, air conditioning, and heat pump systems.

### FEATURES

- Coil: Low power consumption and high reliability
- Excellent opening performance with a large maximum working pressure differential



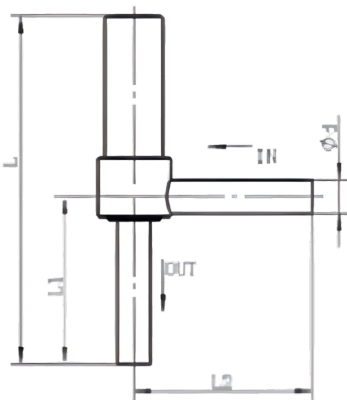
### SPECIFICATIONS

- Applicable refrigerants: R22, R407C, R410A, etc.
- Applicable medium temperature: -30°C to +120°C
- Applicable ambient temperature: -30°C to +55°C
- Relative humidity: ≤ 95%
- Maximum working pressure: 4.2 MPa
- Certifications: CQC, TUV, UL

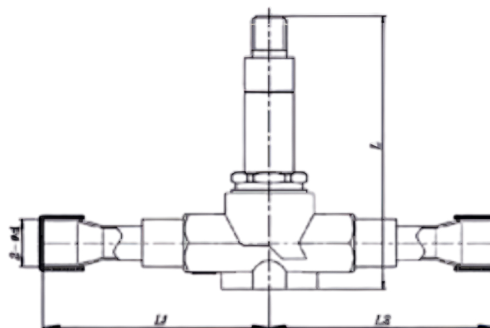
### VALVE BODY TECHNICAL PARAMETERS

Model	Action Way	Dia	Kv	Max. Working Pressure	Max. Operating Pressure Differential	Min. Operating Pressure Differential
		[mm]	(m3/h)	[MPa]	(Mpa)	(Mpa)
RSDF2A	Direct Acting Type	1.8	0.07	4.2	3.4	0
RSDF4A		3.9	0.3			0.01
RSDF6A	Pilot Operated Type	5.8	0.56	3.4	2.5	0.01
RSDF7A		7	0.8			0.01
RSDF8A		8	0.94	4.2	3.4	0.01
RSDF10A		9.8	1.3	4.2	3.4	0.01
RSDF11A		11	2.4	4.2	2.8	0.02
RSDF13A		13	3.43			0.02

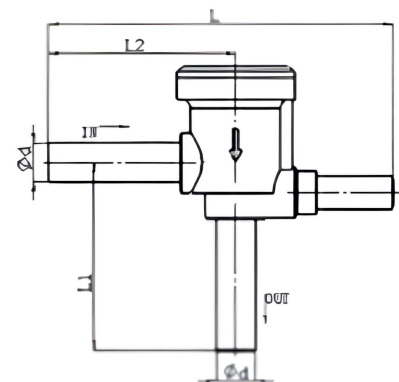
### SIZE OF VALVE BODY



PIC A



PIC B



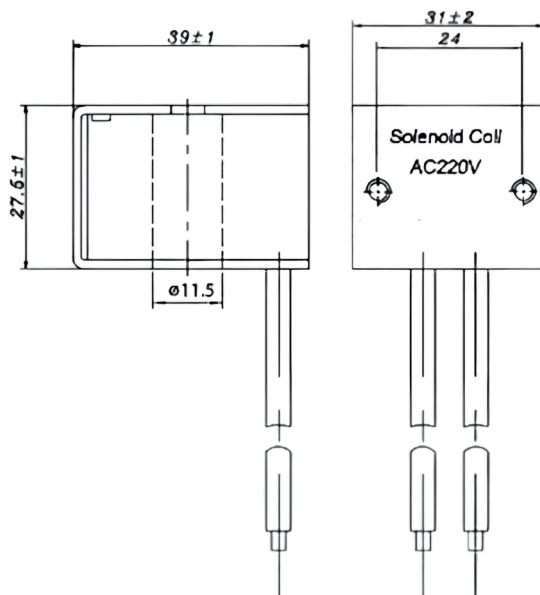
PIC C

Model	OD	Graphic	Measurement		
			[mm]		
	[mm]		L	L1	L2
RSDF2A	φ6.35	PIC A	105	62	66
RSDF4A	φ6.35	PIC A	89	46	48
RSDF6A	φ7.94	PIC A	83	35.5	36.5
RSDF7A	φ14/φ12.8	PIC B	80	66	66
RSDF8A	φ9.52	PIC A	119	70	70
RSDF10A	φ12	PIC A	121	70	70
RSDF11A	φ12.8	PIC C	121.5	69	69
RSDF13A	φ15.88	PIC C	153.5	101	101

### TECHNICAL PARAMETER OF COIL

Rated Voltage	Voltage Tolerance	Power	Insulation Class	Temperature Rise	Wiring Type
[V]		[W]		[K]	
AC220	-15%~+10%	6(50Hz)/5(60Hz)	B	< 80	Lead Wire Types
AC220-240					
AC110					
DC12					
DC24					

### SIZE OF COIL

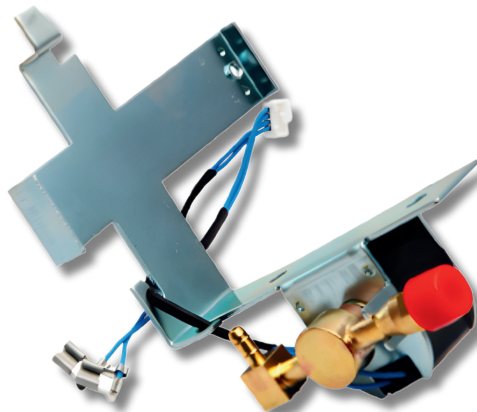


### INTRODUCTION

The RVSH series solenoid valves are widely used for water flow control in the automatic control systems of humidifier applications.

### FEATURES

- Coil: Low power consumption and high reliability
- Excellent opening performance
- Compact size



### SPECIFICATIONS

- Applicable medium: Water
- Medium temperature: +1°C to +60°C
- Ambient temperature: +5°C to +45°C
- Installation position: Installed on the water inlet pipe, with the coil facing upward and perpendicular to the valve body; valve body verticality within  $\pm 15^\circ$ , and flow direction following the arrow indication.

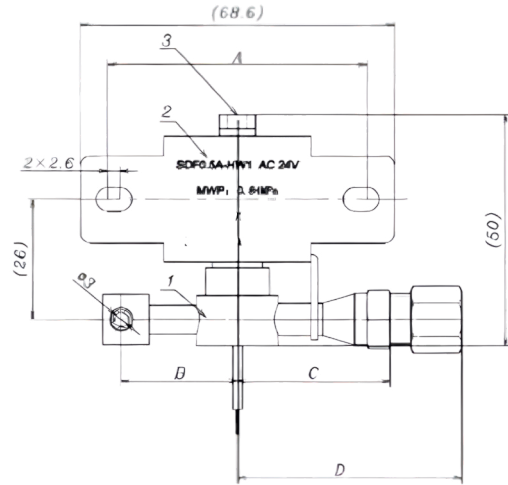
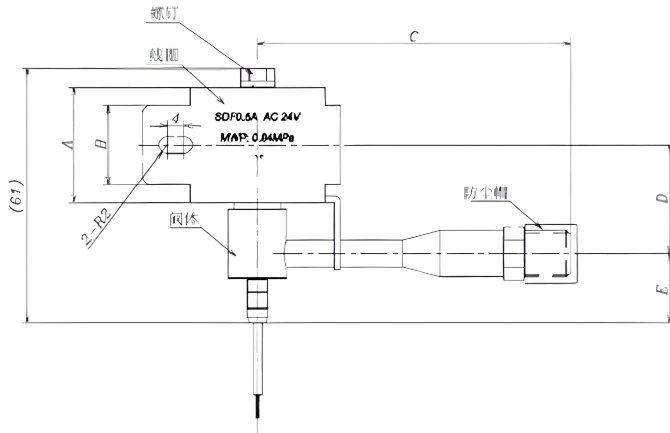
### TECHNICAL PARAMETER OF VALVE BODY

Model	Action Way	Size	Max. Working Pressure	Max. Operating Pressure Differential	Min. Operating Pressure Differential
		[mm]	[MPa]	(Mpa)	(Mpa)
RVSH0.5ASS	Direct Motion Type	$\phi 0.5$	1.0	0.84	0
RVSH0.5DSS					
RVSH0.5A-HW1					
RVSH0.5D-HW1					

### TECHNICAL PARAMETER OF COIL

Model	Rated Voltage	Voltage Fluctuation	Insulation Grade	Temperature Rise	Wiring Type
	[V]	[W]		[K]	
RVSH0.5ASS	AC24	4	B	< 75	Lead Wire Type
RVSH0.5A-HW1	DC24				
RVSH0.5DSS					
RVSH0.5D-HW1					

### SIZE OF VALVE BODY



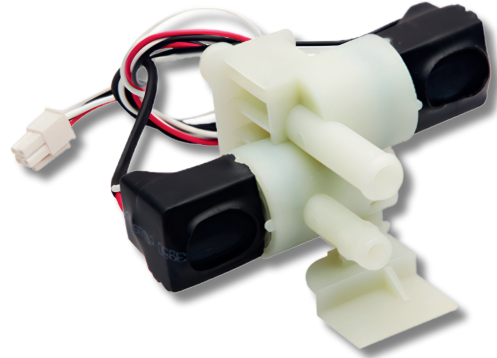
Model	External Dimensions				
	A	B	C	D	E
RVSHO.SASS	27.38	19	74.5	26.16	16.5
RVSHO.5DSS					
RVSHO.5A-HW1	56.6	25.4	33.3	49	/
RVSHO.5D-HW1					

### INTRODUCTION

The RVDSV3A/5A series solenoid valves are mainly used for water circuit control in systems such as humidifiers, enabling control of both water inlet and drainage.

### FEATURES

- Coil: Low power consumption and high reliability
- Capable of controlling both water inlet and drainage functions



### SPECIFICATIONS

- Applicable medium: Water
- Medium temperature: 4.4°C to 100°C

### TECHNICAL PARAMETER OF VALVE BODY

Model	Input Water Pressure	Discharge Water Pressure	Open Valve Capacity	
			[MPa]	[KPa]
RSDSV 3A/5A	0-0.84	0-3.5	<u>&gt; 84</u>	<u>&gt; 3.5</u>

### TECHNICAL PARAMETER OF COIL

Model	Rated Voltage	Frequency	Voltage Range	Rated Power	Insulation Grade	Temperature Rise	Wiring Type
	[V]	[Hz]	[V]	[W]		[K]	
RSDSV 3A/5A	AC120	60	AC102-132	4	B	<75	Lead wire type

# RV-BSV

## DRAINAGE SOLENOID VALVE RDRSV SERIES

### INTRODUCTION

The RDRSV series solenoid valves are mainly used for water circuit control in systems such as humidifiers, specifically for drainage control.

### FEATURES

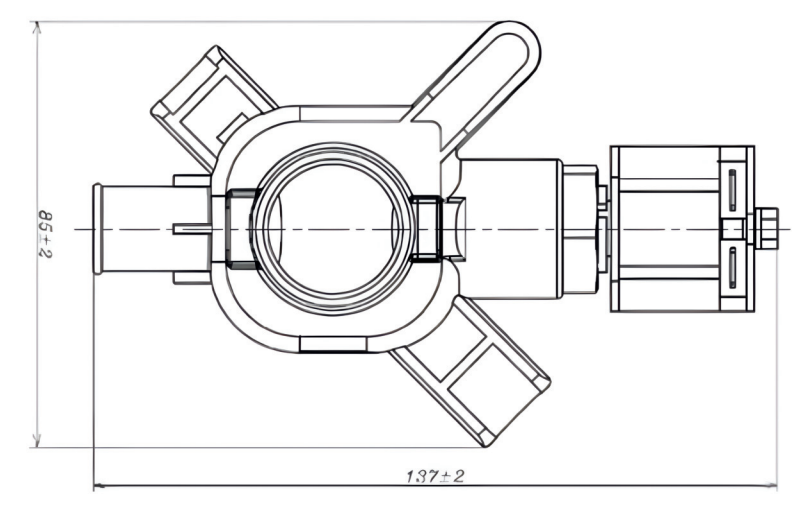
- Coil: Low power consumption and high reliability
- High flow capacity



### SPECIFICATIONS

- Applicable medium: Water
- Medium temperature: 4.4°C to 100°C

### PRODUCT DIAGRAM



### TECHNICAL PARAMETER OF VALVE BODY

Model	Diameter	Flow	Max. Working Pressure	Max. Operating Pressure Differential	Min. Operating Pressure Differential
	[mm]	(m <sup>3</sup> /h)	[Psi]	[Psi]	[Psi]
RDRSV 8D	8.6	0.9	1	1	0

### TECHNICAL PARAMETER OF COIL

Model	Rated Voltage	Voltage Range	Rated Power	Insulation Grade	Temperature Rise	Wiring Type
	[V]	[V]	[W]		[K]	
RDRSV 8D	DC24	DC20-26	5	F	<80	Lead Wire Type

### INTRODUCTION

Drainage pump is driven by the motor pump body centrifugal impeller rotation, under the action of impeller centrifugal force and atmospheric pressure fluid enters from the inlet, drains out from the outlet to fluid drained to a certain height.

### FEATURES

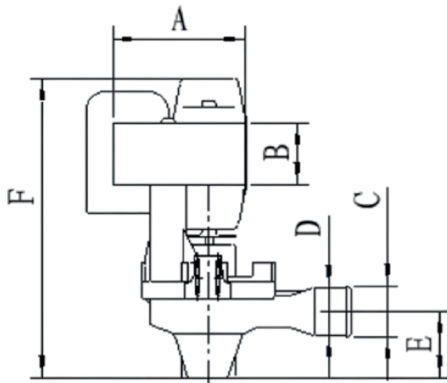
- Low noise, low vibration, low weight.
- Adequate flow, long life.
- Small, energy-saving.

### SPECIFICATIONS

- Use of fluid: condensed water.
- Fluid temperature: 0 C -+40 C.
- Ambient temperature: -10 C -+50 C.
- Relative humidity: less than 95.
- Installation status: the motor assembly is upward, with an inclination less than 10°.



### EXTERNAL DIMENSIONS



Model	Dimensions [mm]					
	A	B	C	D	E	F
RVDP 7	48	15.5	14	23	49	89
RVDP 12	48	20.5	17	23	55	96

### TECHNICAL PARAMETERS

Product Model	Rated Head	Rated Flow	Rated Voltage	Rated Current	Power Consumption
	[mm]	[ml/mm]	[V]	[mA]	[W]
RVDP 7	700	>400	AC220~240	108/96	10.8/9.6
RVDP 12	1200	>400	AC220-240	120/108	12/10.8