

Solenoid valves SV、SSV、SV-G、NSV series

Technical data

Ambient temperature: -20 ~ 50°C
 Medium temperature: -25 ~ 120°C
 Max. working pressure: 3MPa
 Max. testing temperature: 3.5MPa
 Available medium: R134a、R22、R407C、R404A/507、air、water and oil
 Rated power:
 A.C. : 24V,36V,110V,220V,380V
 D.C. : 12V,24V,110V,220V

Ordering

Explanation	Valve code	Port size	Connection form	Normal opened code	Rated power
Model	SV	13	W	K	AC220V
Explanation	SV: With diaphragms NSV: With pistons SSV: B-flow	Port size (mm)	Omit for flare SAE W: Solder ODF G: Internal thread F: Waist flange	Omit for normal closed valve K: Normal opened valve	Rated power (V)
Notes	The model SV13WKA-C220V is an example in the table. Types SV1.6, SV2, SV3 are direct-acting solenoid valves without diaphragms.				

Usage

1. The valve must install in horizontal pipe line under vertical position. The flow direction must meet the arrow direction in valve body.
2. The coil input voltage must meet rated input voltage showed on the label. Departure coil from valve when energized in coil is not permitted in order to avoid damage the coil.
3. According to valve with manual function, it must turn manual bar to open the valve before doing system air tightness in order to avoid to damage diaphragm.
4. When brazing the valve with connect tube in system, follow points are very important:
 - a. Before brazing, coil must be departure and use wet fabric cover the valve body to avoid to damage valve part because of high temperature when brazing.
 - b. It must avoid the brazing flame face to valve body.
 - c. It is better to adopt low temperature type silver brazing bar.

Solenoid valves (with diaphragms)

SV series

Introduction



SV series two ways normal closed solenoid valves with diaphragms can be widely used in refrigeration, pneumatic and hydraulic system, also in boiler and fire-fighting, etc.

Solenoid valves use full-closed magnetic coil and DIN international standard electric plug, so it is characterized by its good insulation, waterproof, moisture proof, anti-vibration and corrosion resistance.

Operating principle

While energized in coil, the electromagnetic power opens the small orifice. Then the pressure in upside of valve reduced, so the pressure difference between both side of diaphragm happen and lead to diaphragm lift to open the main orifice. While de-energized in the coil, plug stem will drop and close the small orifice because of spring force and its weight. The flow media enters into upside of diaphragm through throttle hole, then pressure in both side of diaphragm balances, then the diaphragm will drop and close the main orifice.

Type & data

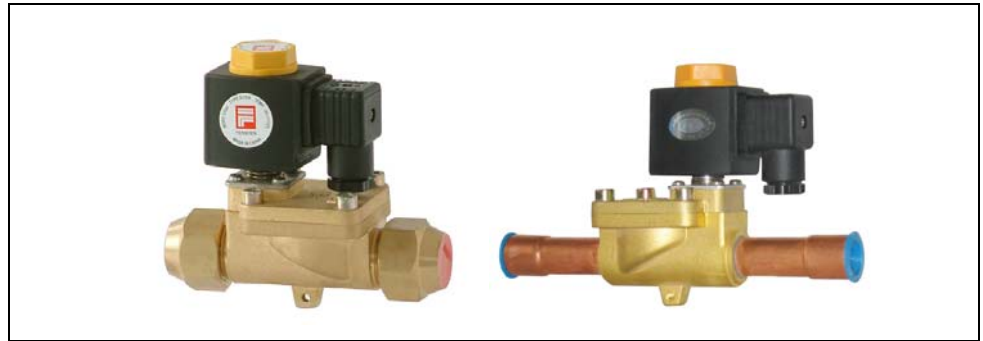
Connection form	Model	Connection dimension (in.)	Kv value (m ³ /h)	Opening diff. pressure (MPa)			Dimension (mm)					
				Min.	Max.		Length	Wide	Height			
					A.C.	D.C.						
Flare SAE	SV6	5/16	0.4	0.005	2.1	1.7	85	45	97			
	SV8	3/8	1				85	45	97			
	SV10A	1/2	1.8				85	45	97			
	SV13A	5/8	3				89	45	97			
	SV16	3/4	4.5				119	60	120			
	SV19	7/8	5				119	60	120			
Solder ODF	SV6W	5/16	0.4				0.03	2.1	1.7	125	45	97
	SV8W	3/8	1							125	45	97
	SV10AW	1/2	1.8							125	45	97
	SV13AW	5/8	3							150	45	97
	SV16W	3/4	4.5							185	60	120
	SV19W	7/8	5							190	60	120
	SV25W	1-1/8	9.5	232	72	120						
		1-3/8		250	72	120						
	SV32W	1-3/8	15	281	86	130						
		1-5/8		281	86	130						

The Kv value is the water flow in m³/h at a pressure drop across valve of 0.1MPa, ρ=1000 kg/m³

Letters after the model: "A" means improved type, "W" means solder ODF, "F" means waist flange, "K" means normal opened valves.

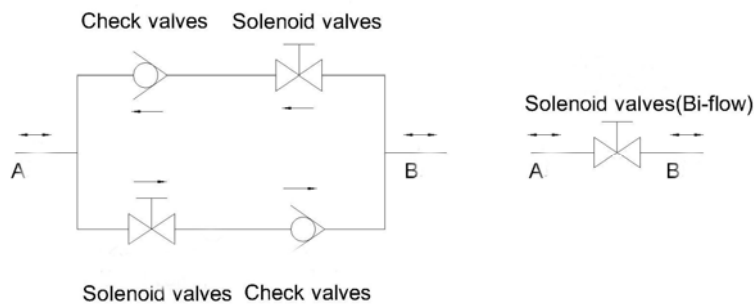
Solenoid valves (bi-flow) SSV series

Introduction



SSV series two-way bi-flow solenoid valves are mainly used for the defrosting of wind cooling heat pump refrigeration unit and the defrosting of supermarket refrigerators as well. The adoption of SSV series can reduce the amount of check valves and solenoid valves in the refrigeration system, which makes system pipeline designs more reasonable.

Operating principle



Type & data

Connection form	Model	Connection dimension (in.)	Kv value (m ³ /h)	Opening diff. pressure (MPa)			Dimension (mm)					
				Min.	Max.		Length	Wide	Height			
					A.C.	D.C.						
Flare SAE	SSV6	5/16	0.4	0.01	2.1	1.7	85	45	97			
	SSV8	3/8	1				85	45	97			
	SSV10A	1/2	1.8				85	45	97			
	SSV13A	5/8	3				89	45	97			
	SSV16	3/4	4.5				119	60	120			
	SSV19	7/8	5				119	60	120			
Solder ODF	SSV6W	5/16	0.4				0.03	2.1	1.7	125	45	97
	SSV8W	3/8	1							125	45	97
	SSV10AW	1/2	1.8							125	45	97
	SSV13AW	5/8	3							150	45	97
	SSV16W	3/4	4.5							185	60	120
	SSV19W	7/8	5							190	60	120
	SSV25W	1-1/8	9.5	232	72	120						
		1-3/8		250	72	120						
		SSV32W	1-3/8	15	281	86	130					
			1-5/8		281	86	130					

The Kv value is the water flow in m³/h at a pressure drop across valve of 0.1MPa, ρ=1000 kg/m³

Letters after the model: "A" means improved type, "W" means solder ODF, "F" means waist flange, "K" means normal opened valves.

Solenoid valves (water valves)
SV-G series

Introduction



SV-G series solenoid valves can be used as actor of automatic system in water supply system, fire control system, and water spray system in dirty proofing or agricultural. They also can be used for pneumatic hydraulic and food machine.

Solenoid valves use full-closed magnetic coil and DIN international standard electric plug, so it is characterized by its good insulation, waterproof, moisture proof, anti-vibration and corrosion resistance.

Type & data

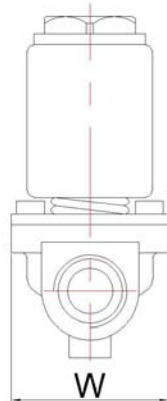
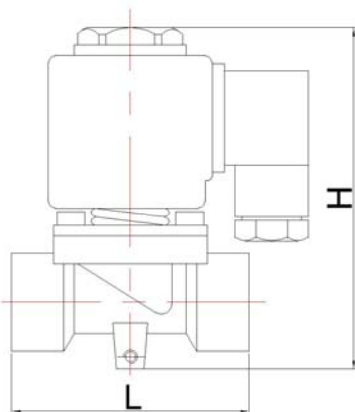
Connection form	Model	Connection dimension (in.)	Kv value (m ³ /h)	Opening diff. pressure (MPa)			Dimension (mm)		
				Min.	Max.		Length	Wide	Height
					A.C.	D.C.			
Internal thread	SV3/8G	G3/8	1	0.005	2.1	1.7	80	45	100
	SV1/2G	G1/2	1.8				68	45	100
	SV3/4G	G3/4	5				120	58	119

The Kv value is the water flow in m³/h at a pressure drop across valve of 0.1MPa, ρ=1000 kg/m³

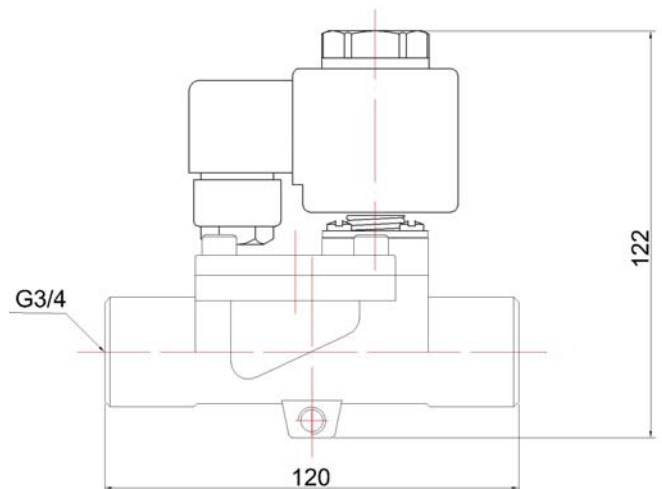
Letters after the model: "G" means internal thread, "MM" means automatic locked type (When de-energized in coil, valves need to be closed by the hand).

Dimension (Unit: mm)

SV3/8G,SV1/2G



SV3/4G



Solenoid valves (with pistons)

NSV series

Introduction

NSV series solenoid valves with pistons are widely used in refrigeration, pneumatic and hydraulic system as automatic controls, are also used in boiler and fire-fighting, etc.

The life of solenoid valves with pistons is longer than those with diaphragms.

NSV-F series are used for large or medium-sized refrigeration system.

Solenoid valves use full-closed magnetic coil and DIN international standard electric plug, so it is characterized by its good insulation, waterproof, moisture proof, anti-vibration and corrosion resistance.



Operating principle

While energized in coil, the electromagnetic power opens the small orifice. Then the pressure in upside of valve reduced, so the pressure difference between both side of piston happen and lead to piston lift to open the main orifice. While de-energized in the coil, plug stem will drop and close the small orifice because of spring force and its weight. The flow media enters into upside of piston through throttle hole, then pressure in both side of piston balances, then the piston will drop and close the main orifice.

Type & data

Connection form	Model	Connection dimension (in.)	Kv value (m ³ /h)	Opening diff. pressure (MPa)			Dimension (mm)					
				Min.	Max.		Length	Wide	Height			
					A.C.	D.C.						
Flare SAE	NSV6	5/16	0.4	0.005	2.1	1.7	76	38	95			
	NSV8	3/8	1				76	38	95			
	NSV10	1/2	1.8				76	38	95			
Solder ODF	NSV6W	5/16	0.4				0.005	2.1	1.7	136	38	95
	NSV8W	3/8	1							136	38	95
	NSV10W	1/2	1.8							136	38	95
	NSV25W	1-1/8	10	0.03	240	76	200					
		1-3/8			260	76	200					
		1-3/8										
NSV32W	1-3/8	15.5	260		76	200						
	1-5/8											

The Kv value is the water flow in m³/h at a pressure drop across valve of 0.1MPa, ρ=1000 kg/m³

Letters after the model: "W" means solder ODF, "F" means waist flange.

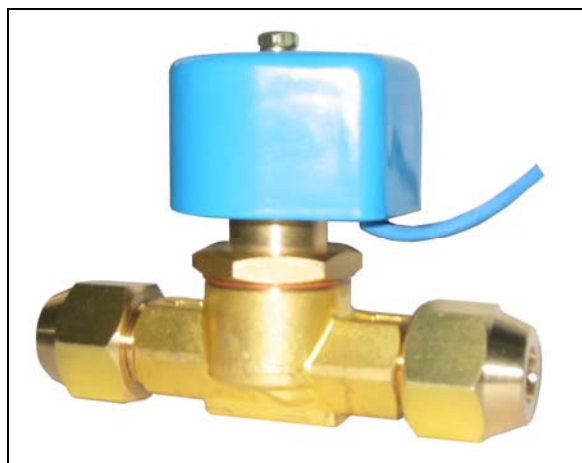
Solenoid valves (with pistons)

NSV6A

Introduction

NSV6A series 2-way normal closed solenoid valves can operate under no pressure difference, which can be used for non-corrosive refrigerant in refrigeration system.

NSV6A series solenoid valves can install horizontally and vertically.



Technical data

Max. working pressure

2.94MPa

Max. testing pressure

4.4MPa

Liquid temperature

-40~125°C

Ambient temperature

-30~50°C

Rated power

AC220V AC110V

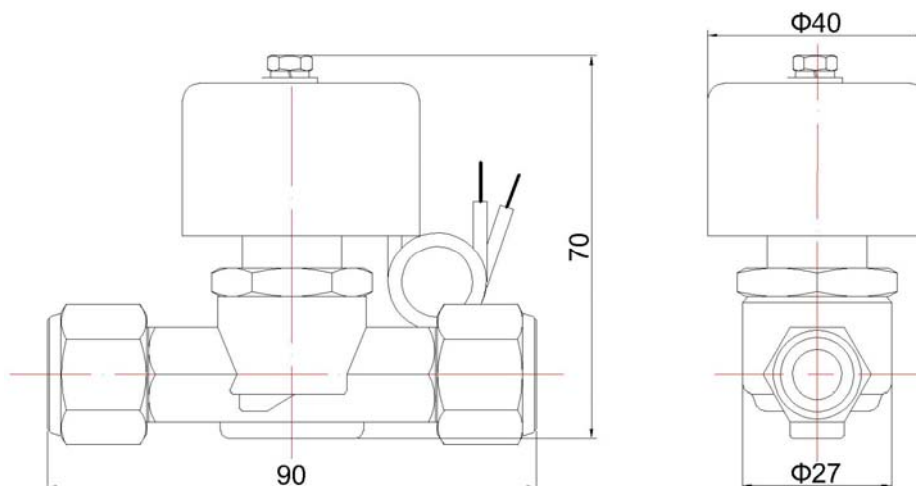
Type & data

Connection form	Model	Connection dimension (in.)	Kv value (m ³ /h)	Opening diff. pressure (MPa)		
				Min.	Max.	
					A.C.	D.C.
Flare SAE	NSV6A	3/8	0.69	0	2.45	1.96
Solder ODF	NSV6AW	3/8	0.69			

Kv value is the flow of water in m³/h at a pressure drop across valve of 0.1 MPa, $\rho = 1000 \text{ kg/m}^3$.

Dimension

(Unit:mm)



Solenoid valves (direct-acting)

SV1.6, SV2, SV3 series

Introduction



SV1.6, SV2, SV3 direct-acting solenoid valves feature compact structure, rational design, easy installation and maintenance, and act rapidly.

These series can be widely used in refrigeration, pneumatic and hydraulic systems.

Solenoid valves use full-closed magnetic coil and DIN international standard electric plug, so it is characterized by its good insulation, waterproof, moisture proof, anti-vibration and corrosion resistance.

Operating principle

The pull of the solenoid coil opens the valve port directly by lifting the seat disc off the valve seat. While de-energized in the coil, plug stem will drop and close the valve port because of spring force and its weight.

Type & data

Connection form	Model	Connection dimension (in.)	Kv value (m ³ /h)	Opening diff. pressure (MPa)			Dimension (mm)		
				Min.	Max.		Length	Wide	Height
					A.C.	D.C.			
Flare SAE	SV1.6	1/4	0.15	0	3	2.6	48	33	55
	SV2	1/4	0.16				70	30	75
	SV3	1/4	0.23		2.1	1.7			
Solder ODF	SV1.6W	1/4	0.15		3	2.6	80	33	55
	SV2W	1/4	0.16				115	30	75
	SV3W	1/4	0.23		2.1	1.7			
Internal thread	SV1.6A	3/8	0.15	3	2.6	30	33	55	
	SV1.6B	1/8(NPTF)							

The Kv value is the water flow in m³/h at a pressure drop across valve of 0.1MPa, ρ=1000 kg/m³

Letters after the model: "W" means solder ODF, "A" & "B" means different valve bodies, "K" means normal opened valves.

Discharge solenoid valves SV-XZ series

Introduction

SV-XZ series discharge solenoid valves, a kind of capacity regulators, are generally installed on the cylinder lid of compressors.

SV-XZ series discharge solenoid valves give automatic unloading adjustment of refrigeration compressor according to the capacity of evaporator. It can match the power of compressor with the requirement of refrigeration amount, and also save energy.



Type & data

Model	Figure	Installation size (mm)	Installation hole size (mm)	Max. opening diff. pressure (MPa)	Max. working pressure (MPa)	Max. medium temp. (°C)
SV2XZ4	Rhombus	37	2×Φ7.2	2.5	3	150
SV2XZ5	Square	□24×24	4×Φ4.3			
SV2XZ5K	Square	□24×24	4×Φ4.3			

Letter "K" after the model means normal opened solenoid valves.

Consult Shanghai Fengshen Refrigeration Controls Co. for special requirement.