

Solenoid valve for automatic watering

RSV solenoid valve

- For watering of protected horticulture, urban greenery, greenbelts, parks, golf courses, soccer fields, farmlands, etc.
- Pilot operated diaphragm ● Continuously energized, latch

Overview

- Low water hammer
- Molded coil with excellent water resistance
- Equipped with a self-cleaning filter for pilot flow path protection
- Equipped with flow rate adjusting and manual operation mechanisms
- Capable of battery control with a latch coil
- IP67 or equivalent (excluding the terminal box equipped coil)



Precautions

- Before inspecting the filter, close the IN-side water control valve and loosen the manual operation needle by 1/2 rotation to lower the pressure. Lightly tighten the needle by hand upon reassembly. The tightening torque is 0.8 to 1.2 Nm. Tightening the needle excessively will cause damage.
- Although the unit can be used if the solenoid valve coil will only be submerged in water temporarily, consider drainage of the water if there is the risk of the unit being submerged in water or buried under dirt for longer periods of time. (Coil with terminal box cannot be submerged in water)
- In cases when vertical piping cannot be avoided, arrange the piping so that the IN-side is at the bottom.
- The 24 VDC type is equipped with a surge suppressor device.
- The AC coils are all equipped with rectifying surge suppressors. (Half-wave)
- Avoid direct exposure to sunlight.

Specifications

Descriptions	Model											
	RSV-20A-210K	RSV-25A-210K	RSV-32A-210K	RSV-40A-210K	RSV-40F-210	RSV-50A-210K	RSV-50F-210	RSV-65A-210K	RSV-65F-210K	RSV-80A-210K	RSV-80F-210K	RSV-100F-210 (made-to-order)
Working fluid	Agricultural water											
Max. working pressure MPa	1											
Working pressure differential MPa	0.03 to 1				0.05 to 1				0.1 to 1			
Proof pressure (water pressure) MPa	3											2
Fluid temperature °C	5 to 60 (no freezing)											
Ambient temperature °C	0 to 60											
Valve seat leakage cm ³ /min	0.1 or less (water)											
Orifice size mm	25			50			80			98		
Cv	13	14	29	35	46.5	82	97	180				
Max. operating frequency cycle/min.	1											0.3
Mounting orientation	Mount with coil on top.											
Connection	Screw-in (Rc)				Flange JIS10K	Screw-in (Rc)	Flange JIS10K	Screw-in (Rc)	Flange JIS10K	Screw-in (Rc)	Flange JIS10K	
Port size	3/4	1	1 1/4	1 1/2	40	2	50	2 1/2	65	3	80	100
Weight kg	2.1	2.2	3.9	4.1	8.6	4.7	9.6	10.9	17.4	11.4	18.4	42
Electrical specifications												
Rated voltage	24 VDC, 24/100/200 VAC (50/60 Hz), P type *2											
Power consumption W	AC/2.5, DC/3											
Thermal class	Class 130 (B) (JIS C 4003)											
Coil temperature rise deg (K)	30											
Leakage current mA	6 or less/24 VAC, 1.9 or less/100 VAC, 0.7 or less/200 VAC, 4 or less/24 VDC											

How to order

RSV-20A-210 K - AC100V

A Port size

B Body material

C Coil housing

D Voltage

Code	Content	
A Port size		
20A	Rc3/4	
25A	Rc1	
32A	Rc1 1/4	
40A	Rc1 1/2	
50A	Rc2	
65A	Rc2 1/2	
80A	Rc3	
40F	Flange 40	
50F	Flange 50	
65F	Flange 60	
80F	Flange 80	
100F	Flange 100 (custom order product)	
B Body material		
K	Copper alloy	
Blank	Cast iron	
C Coil housing		
Blank	Standard	Stainless steel core (continuously energized)
P	Latch	Stainless steel core (pulse energized)
3M	Term. box	HP terminal box (G1/2) bonnet
D Voltage		
DC24V	24 VDC	
AC24V	24 VAC	50/60 Hz
AC100V	100 VAC	50/60 Hz
AC200V	200 VAC	50/60 Hz

Precautions for model No. selection

*1 The materials of the body of Item B are limited to the combinations listed in the corresponding field of the specifications.

*2 The coil housing P type in Item C is dedicated for use with controllers manufactured by CKD.

The voltage of the model No. is not required when placing an order.

Applicable controller

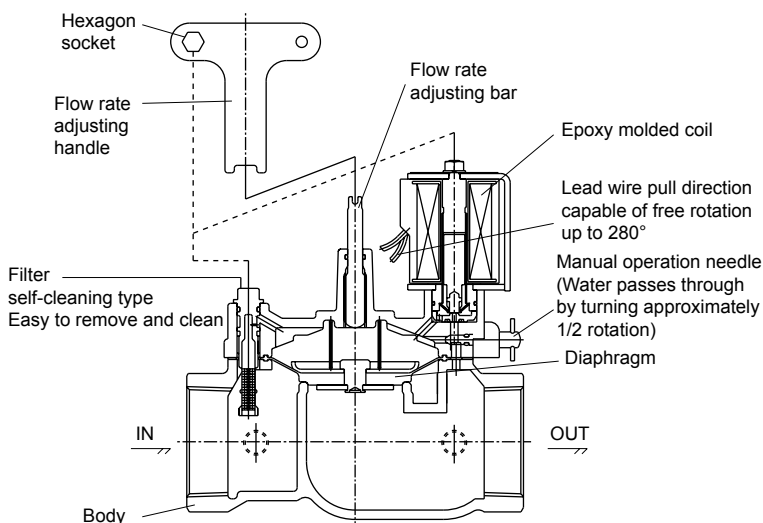
·RSC-S5, RSC-G Series

·RSC-1WP, RSC-2WP

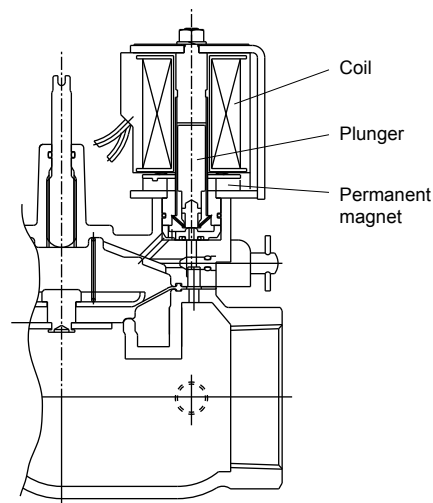
*3 Do not use products equipped with terminal boxes outdoors or within manholes.

Internal structure and parts list

● Continuously energized (NC)



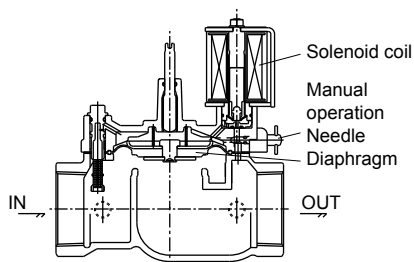
● Pulse energized (latch)



Part name	Material	Part name	Material
Flow rate adjusting handle	Steel plate (chrome finished) included	Solenoid valve coil section	Epoxy resin molded
Manual operation needle	Stainless steel	Plunger	Stainless steel
Pilot valve body	Copper alloy casting (80 or less) cast iron (100F)	Pilot valve seat	POM (80 or less)
Body	Copper alloy casting (with K code) cast iron (without K code)	Filter	Stainless steel, PBT
Diaphragm	Nitrile rubber		

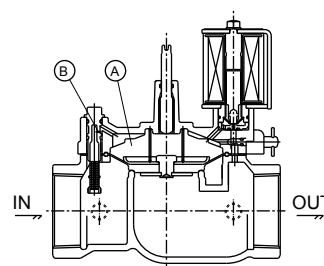
Operational explanation

● Opening operation



When the solenoid valve coil section is energized or the manual operation needle is opened, the diaphragm will be pushed up due to the IN-side inflow pressure and allow the passage of water, as the fluid within the pilot chamber (A) flows out to the OUT-side and lowers the pressure within the pilot chamber.

● Closing operation

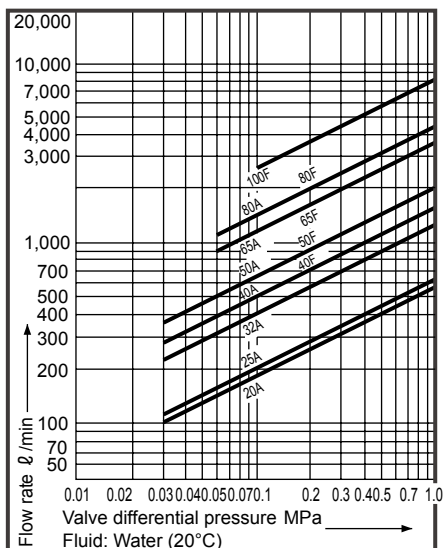


When the solenoid valve coil section is OFF or the manual operation needle is closed, as the IN-side fluid will pass through pilot hole (B) and the fluid pressure will act on the upper surface of the diaphragm, the main valve will be pushed up with the difference in pressure between the top and bottom of the diaphragm along with the spring force and maintain a state where the passage of water is blocked.

● With the latch solenoid valve

By applying a pulse voltage of red + and black - to the coil lead wires, the plunger will rise and latch (hold) with the permanent magnet to create a state where water is allowed to pass. Conversely, by applying pulse voltage of red - and black +, the plunger will recover and create a state where the passage of water is blocked.

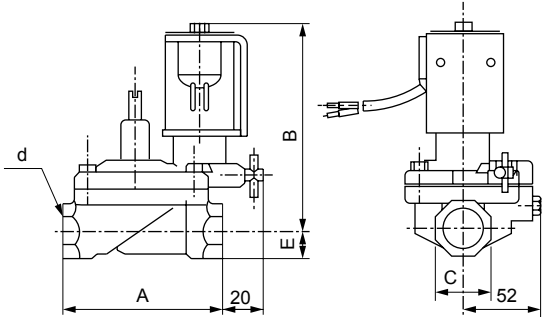
Flow characteristics



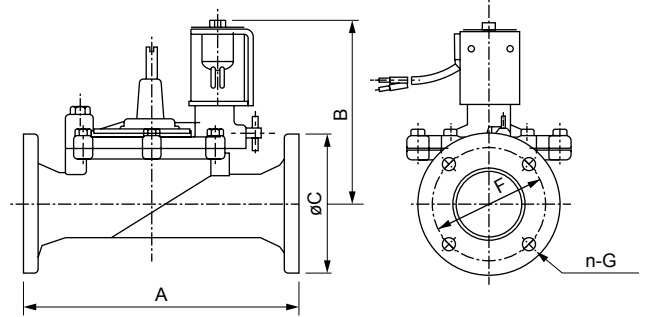
Dimensions

○ Lead wire color coding: DC coil - red-black, less than 200 VAC - blue, 200 VAC or more - red
 ○ Lead wire length: 700 mm

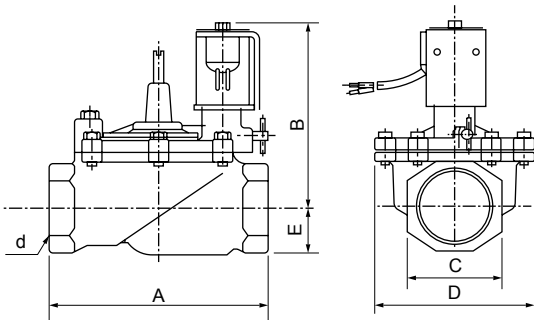
● RSV-20A-210K
25



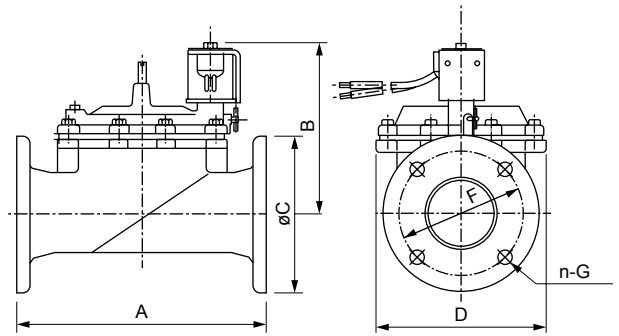
● RSV-40F-210
50



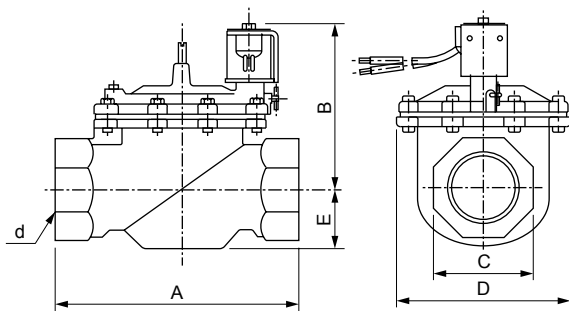
● RSV-32A-210K
40
50



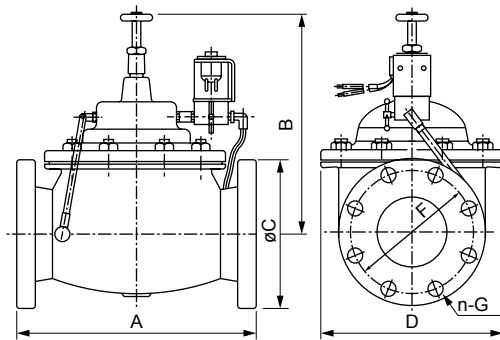
● RSV-65F-210K
80



● RSV-65A-210K
80



● RSV-100F-210



Model No.	A	B	C	D	E	F	n-G	d
RSV-20A-210K	100	129	35	-	18	-	-	Rc ³ / ₄
RSV-25A-210K	105	131	44	-	22	-	-	Rc1
RSV-32A-210K	168	141	54	130	29	-	-	Rc1 ¹ / ₄
RSV-40A-210K	176	146	60	130	34	-	-	Rc1 ¹ / ₂
RSV-40F-210	225	161	140	-	-	105	4-ø19	-
RSV-50A-210K	180	151	74	130	39	-	-	Rc2
RSV-50F-210	225	164	155	-	-	120	4-ø19	-
RSV-65A-210K	246	179	90	200	48	-	-	Rc2 ¹ / ₂
RSV-65F-210K	290	191	175	200	-	140	4-ø19	-
RSV-80A-210K	250	187	105	200	58	-	-	Rc3
RSV-80F-210K	300	201	185	200	-	150	8-ø19	-
RSV-100F-210	332	315	210	256	-	175	8-ø19	-