

Attentions

1. Please place the voltage regulator in a draughty environment where is no corrosive gas, explosive gas, conductive dust or steam, and the children can't touch it, besides, it mustn't subject to the sunshine or rain.
2. The earth terminal must be firm and reliable to ensure safety.
3. The voltage regulator will produce little heat when it works normally, it is not allowed to cover with any things, otherwise, it would be damaged for not sufficient heat emission.
4. The fluctuation of external voltage that leads the equipment regulates the voltage automatically, it is normal that there is the friction sound from gear.
5. Choose input and output leads with suitable sectional area according to the power of voltage regulator, try to reduce power consumption in the circuit, in general, $5A/mm^2$ for copper wire, and reduce half for aluminum wire.
6. The earth wire and neutral wire shall not be connected inversely, and the earth wire can't take the place of neutral wire, otherwise, it would cause the equipment body produces electricity or it can't work normally.
7. The input circuit of three-phase voltage regulator must be wired according to three-phase four-wire system, the neutral wire can't be missed absolutely, or, it would result in out of control of control circuit, then cause the damage of this equipment.
8. When the voltage regulator is energized, it is forbidden to open the case for adjusting randomly, in order to prevent the electric shock.
9. In case that the frequency of generation power grid is unstable, but the electricity is needed urgently, user can use the function of directly providing commercial power, to protect the equipment against damage for unstable frequency.
10. When the equipment has been used for a long time, a professional electric worker shall be invited to clear away the dust in the machine regularly to keep the clean between carbon brush and coil grinding surface, and adjust the contact pressure between them to get a fine contact against flashover; if the carbon brush is worn seriously, please change it in time, to prevent the equipment being damaged.
11. If the equipment works abnormally, user shall cut off the power immediately and send it to the designated place for maintenance.
12. If the safety parts for maintenance or change are not provided by us, we won't be responsible for any possible safety quality problems.

Attachment

One operation instruction One certificate of conformity One warranty card

AUTOMATIC

VOLTAGE REGULAYTOR

INSTRUCTION

AC. AUTOMATIC VOLTAGE REGULATOR

General

SVC series high-accuracy full-automatic AC voltage regulators are our leading products, made up of contact voltage regulator, servo motor and automatic control circuit. When the voltage of power network is not stable or when the load changes, the automatic control circuit will sample, amplify and send signal to drive the servo motor to adjust the position of carbon brush of contact voltage regulator, and enable the output voltage to the rated value, to get voltage stabilization finally.

The equipment possesses visible advantages such as elegant appearance, compact design, light weight, high efficiency, no distortion of output waveform, complete protection functions, long service, etc. For sake of the top quality, the key electronic elements are all imported and performed quality inspection strictly.

The equipment is suitable for areas where power grid fluctuates frequently or changes greatly along the season, widely applied to industry, scientific research, medical service, school, communication, household appliance, etc, it can provide any loads with top power supply to ensure the power device can run normally.

The equipment complies with trade standard SB/T10266-1996 (SVC series single - phase 10kVA and below products and JB/T10089-2001 (SVC series three-phase products, SVC series single-phase 15kVA and above products).

Technical characteristics

1. Output capability

When mains voltage is lower than 198V, the output capacity of this equipment reduces correspondingly; when the output voltage is 110V, its output capacity can't exceed 50% of rated capacity; the relationship between output capability and input voltage is shown as diagram 1.

2. Overload capability

When input voltage of this equipment changes from 198V to 264V, its overload capability is shown as table 1 under emergency service

(P---Output capability; Pc---Rated output capability; U---Input voltage)

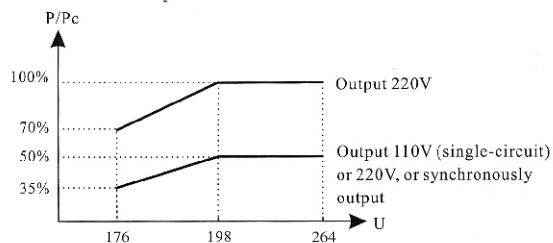


Diagram 1

Overload ratio	Overload time not permitted (min)
20%	60
40%	30
60%	5

Table 1

AC. AUTOMATIC VOLTAGE REGULATOR

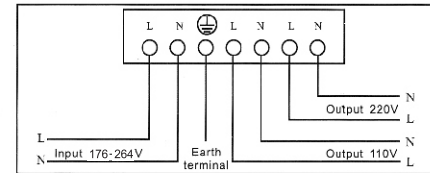


Diagram 8: Wiring diagram of SVC series single-phase 2kVA~3kVA products

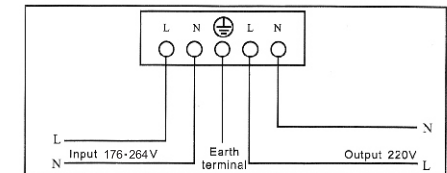


Diagram 9: Wiring diagram of SVC series single-phase 5kVA and above products

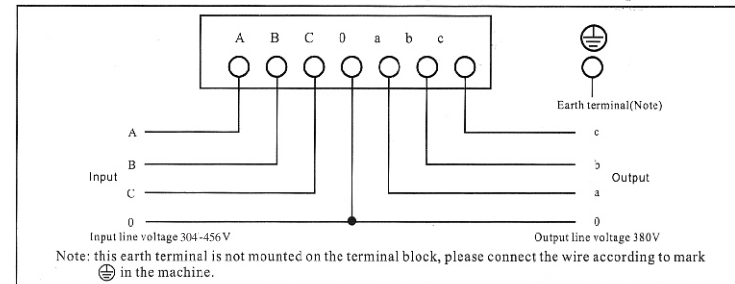


Diagram 10: Wiring diagram of SVC series three-phase 1.5kVA and above products

Operation instruction

- Before operating, please make sure the voltage of power network is within the range of input voltage permitted by this equipment, then connect the wires according to the symbol on front and back panel carefully and do not make mistake, make sure firm grounding. (Input wire of voltage regulator of single - phase 1.5kVA and below is power line, and socket is for output; please refer to diagram 8 diagram 10 for wiring of other voltage regulators.
- Turn on the power switch of the voltage regulator, the output voltmeter of single - phase voltage regulator shall indicate to 220V; rotate the output voltage changeover switch of three-phase voltage regulator to make the voltmeter indicate to 380V, and check if there is phase failure; only when it is normal voltage regulating that you can turn on the power switch of consumer.
- When single - phase voltage regulator outputs 220V and 110V at the same time, the sum of load current can't exceed the rated value. When three-phase voltage regulator outputs 380V and single-phase 220V at the same time, the current sum of each phase load cannot exceed the rated value of each phase, and three-phase load shall be balance.
- If the mains voltage is lower than 198V (three-phase voltage regulator takes phase voltage as the reference), see diagram 1: please use it through reducing the power referring to curve of output capacity.
- When it is inductive load (such as air-conditioner and refrigerator), as the starting current of inductive load is very heavy, please choose voltage regulator whose output capacity is 3-5 times of load power. For other capacitive and impactive loads, please leave enough allowance for output capacity of voltage regulator.
- When the mains voltage is rather normal, please use the commercial power, at this time, the voltage regulator does not have power loss. Open the voltage regulation circuit breaker, and close commercial power circuit breaker.
- When mains failure happens (include loss of phase) or the input voltage is too high, please turn off the voltage regulator and the power switch of consumer in time.

AC. AUTOMATIC VOLTAGE REGULATOR

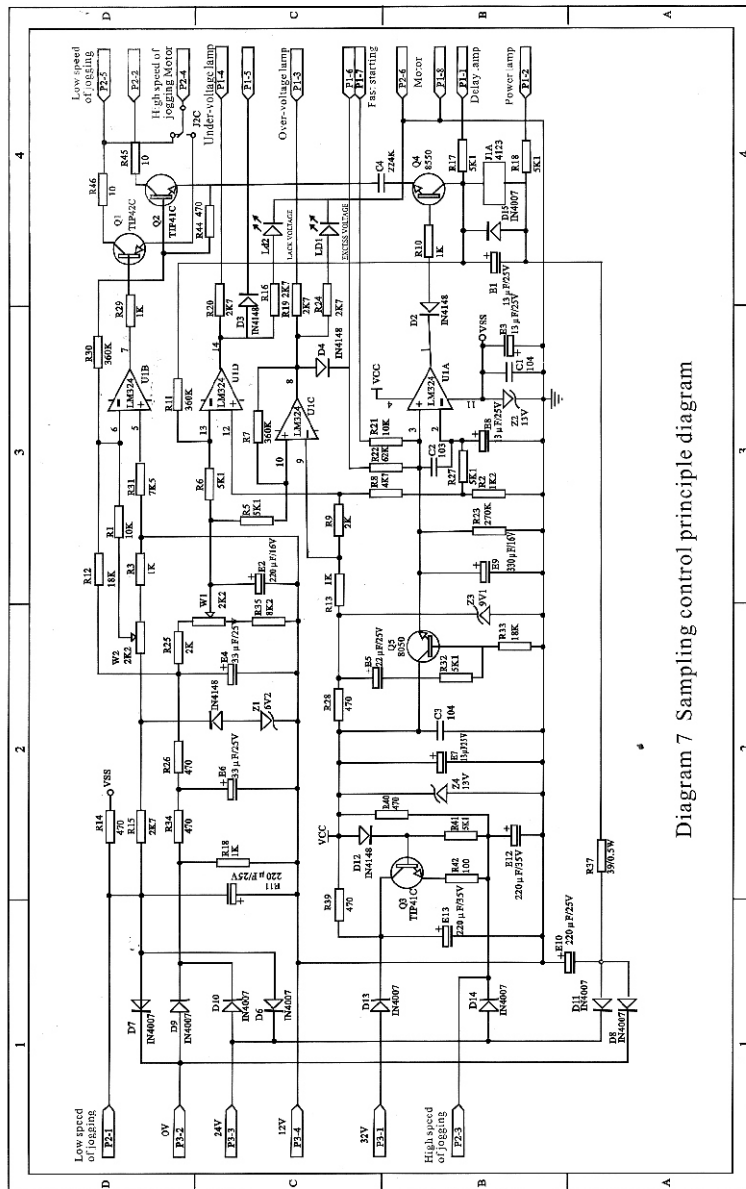


Diagram 7 Sampling control principle diagram

AC. AUTOMATIC VOLTAGE REGULATOR

3. Synchronously output 220V and 110V:
SVC-3000VA (single-phase) and below products can output 220V and 110V at the same time.
4. Directly provide commercial power:
SVC - 2000VA (single - phase) and above as well as SVC-1.5kVA (three - phase) and above products include commercial power function;
5. Overload or short - circuit protection: single - phase 1500VA and below products offer fuse to protect against overload or short circuit ; and other specifications products use circuit breaker.
6. Technical parameters

Item	Single-phase	Three-phase
Model & Spec. SVC series	500VA, 1000VA, 1500VA, 2000VA, 3000VA, 5kVA, 10kVA, 15kVA, 20kVA, 30kVA, 45kVA, 60kVA	1.5kVA, 3kVA, 4.5kVA, 6kVA, 9kVA, 15kVA, 20kVA, 30kVA, 45kVA, 60kVA
	Ultra-thin	S500VA, S1000VA, S2000VA, S3000VA, S5000VA
Input voltage range	(Single-phase three-wire system) 176~264V	Three-phase five-wire system Phase voltage: 176~264V Line voltage: 304~456V
Output voltage	(Single-phase three-wire system) 220V or 110V	(Three-phase five-wire system) Phase voltage: 220V Line voltage: 380V
Over-voltage protection value	246±4V	Phase voltage: 246±4V (phase voltage as reference)
Under-voltage protection value	184±4V	Phase voltage: 184±4V (phase voltage as reference)
	In general, under voltage protection is not provided, however, it can be set under requirement.	
Accuracy of voltage stabilization	≠ ±4%	
Frequency	50~60Hz	
Waveform distortion	No additional waveform distortion	
Load power factor	0.8	
Efficiency	≧90%	
Adjustable time	<1s (when input voltage has a change of 10%)	
Delay time	Long-time delay: 5±2min; short-time delay: 5±2s	
	In general, long-time delay function is not provided, however, it can be set under requirement.	
Electrical strength	No flashover or breakdown when it withstands 1,500V/min	
Insulation resistance	≧2MΩ	

AC. AUTOMATIC VOLTAGE REGULATOR

7. Applicable working conditions

- ① Environment temperature: $-5^{\circ}\text{C}\sim+40^{\circ}\text{C}$
- ② Relative humidity: less than 95% (25°C)
- ③ Air pressure: 86-106kPa;
- ④ Working environment: no chemical deposition, scale, harmful corrosive medium as well as flammable or explosive gas. Besides, the altitude is not higher than 1,000m.

Working principle

1. Circuit diagram (see diagram 2~diagram 6)

2. Sampling control principle (see diagram 7)

(Note: following diagrams are only for reference, if they are changed partially for improving product, we won't notice separately).

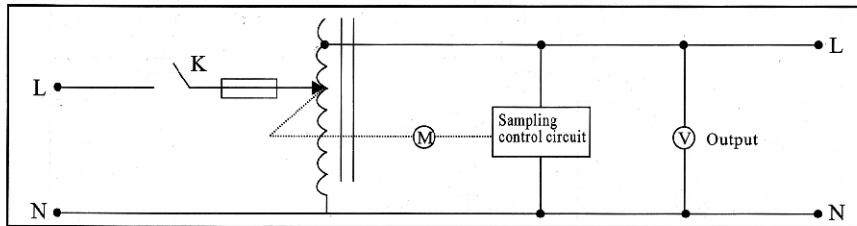


Diagram 2: Circuit diagram of SVC series single-phase 500VA~1.5kVA products

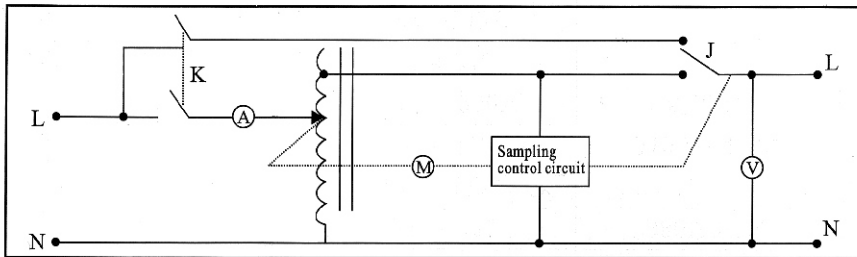


Diagram 3: Circuit diagram of SVC series single-phase 2kVA~3kVA products

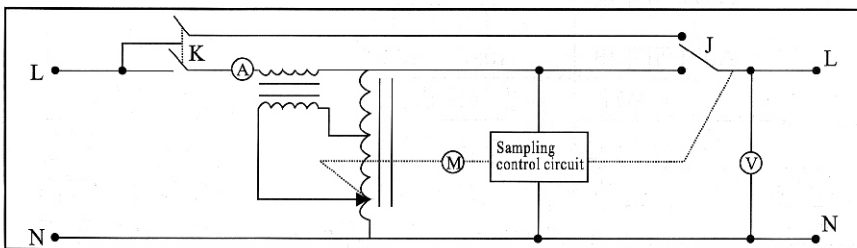


Diagram 4: Circuit diagram of SVC series single-phase 5kVA and above products

AC. AUTOMATIC VOLTAGE REGULATOR

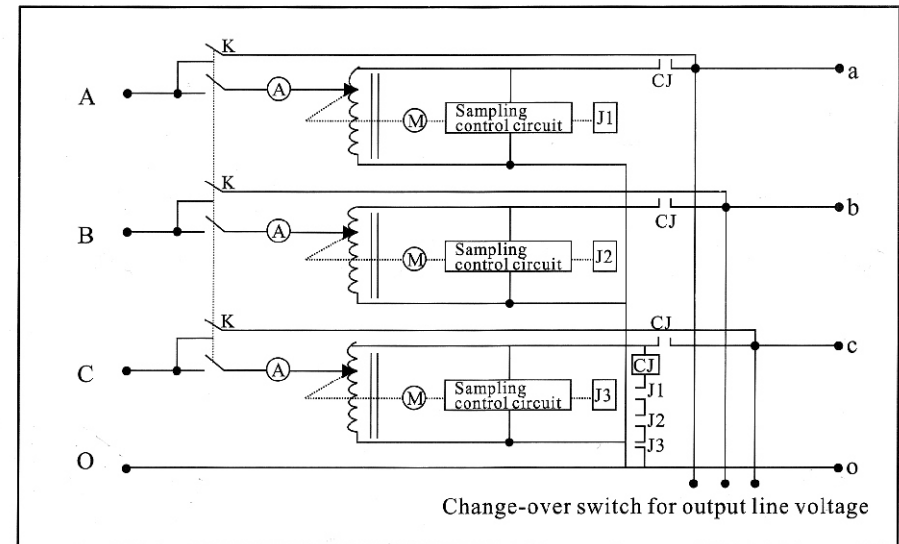


Diagram 5: Circuit diagram of SVC series three-phase 1.5kVA~9kVA products

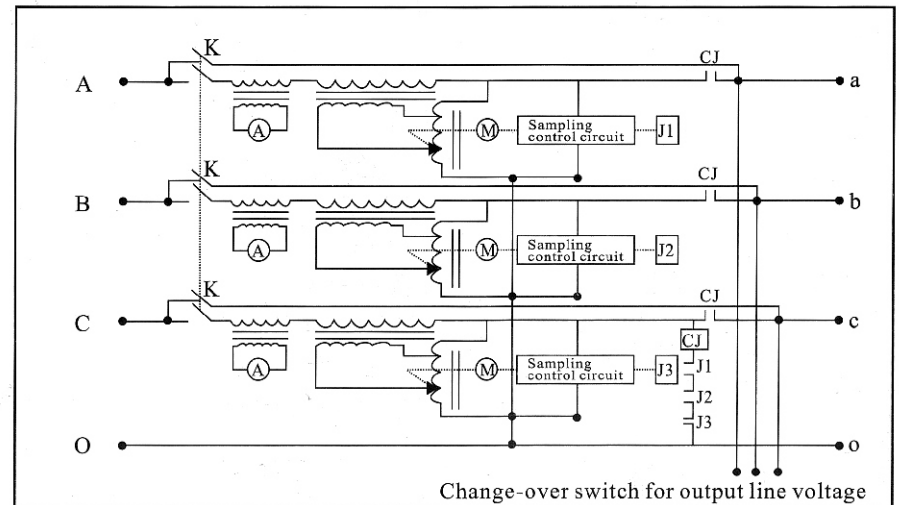


Diagram 6: Circuit diagram of SVC series three-phase 15kVA and above products