Product Manual

Fully Isolated AC Voltage Regulator Module

I. Product overview

① Examples of product applications

Heating: electric furnaces, injection molding equipment,
thermoplastic molding, textile equipment,
infrared heating, power distribution systems,
drying systems

Lighting: public lighting, industrial lighting, stage lighting

② Note

The product can not work under no-load conditions.
After the installation and wiring is completed, you can first connect a small power load (such as incandescent lamps) for testing, testing is normal before accessing the actual load.

③ Technical parameters

control parameter	Input Voltage Control	0-5V,0-10V
	Input Current Control	4-20mA,0-10mA
	Manual potentiometer control	10kΩ
	LED indication	The green LED is the power indicator, the red LED is the circuit system detection light, the light is on and intermittent flashing for the circuit is working properly.
output parameter	Rated Working Voltage	380±10%VAC
	grid frequency	50 Hz
	Peak off-state cutoff voltage Vp	≥1200Vpk
	Surge current (grid week)	800%
	Minimum load current	100mA
	Off-state leakage current	<12mA
	Static voltage rise rate dVs/dt	>200V/μs (enhanced)
	Commutation voltage rise rate dVc/dt	>200V/μs (enhanced)
	Adjusting the response time	≤10ms
	Maximum delay to shutdown	≤10ms
Other parameters	Medium pressure resistance	≥2000Vac
	electrical insulation resistance	>1000MΩ(500Vdc)
	Cooling method	Radiator, forced air cooling

④ Specification Selection Requirements

1, the selection of module current specifications should take into account the fluctuation of the grid voltage and load current impact during startup and other factors, it is recommended to leave an appropriate margin. In order to ensure the long-term reliable operation of the module, it is recommended to choose the following:

Resistive loads: The nominal current of the module is selected to be 3 times the rated current of the load.

Inductive loads: not recommended

2, the module if a long time in the smaller conduction angle (i.e., module high input voltage, low output voltage) output a large current, will make the module serious heat or even burned. This is because in the non-sinusoidal state of the current value measured by an ordinary meter, not the effective value, although the current value displayed by the meter does not exceed the value of the current.

The nominal value of the module is 1/3 or 1/5 of the nominal value of the module, but the effective value may even exceed the nominal value of the module several times. Therefore, it is recommended that the module be operated at a large on-state angle (i.e., output voltage set at more than 1/2 of the input

voltage). The maximum permissible output currents of the modules at different output voltages are shown in the following table:

Actual output voltage of the module	380V~	280V~	190V~	100V~	50V~
Actual value of load rated current	100%	85%	60%	40%	25%

④ Selection Table

NOTE:The single-phase SCR-H220 series cannot be used for two-phase 380V regulation. If you need this feature, please select SCR-1 H380 series.

Single phase voltage regulator relay

Product	Single Phase 380V	Single Phase220V	Recommended Heat Sink Units	
	Resistive Loads	Resistive Loads	Heat Sink	Fan
SCR-1 10A	1.3KW	0.8KW	110*100*80	80*80 220V
SCR-1 25A	3.3KW	1.9KW	110*100*80	80*80 220V
SCR-1 40A	5.2KW	3.1KW	150*100*80	80*80 220V
SCR-1 60A	7.7KW	4.6KW	150*100*80	80*80 220V
SCR-1 80A	10.3KW	6.1KW	9225	90*90 220V
SCR-1 100A	12.9KW	7.6KW	9225	90*90 220V
SCR-1 120A	15.4KW	9.1KW	9225	90*90 220V
SCR-1 150A	18KW	10.5KW	9225	90*90 220V
SCR-1 200A	20KW	11.7KW	9225	90*90 220V

Three phase voltage regulator relay

Product	3 Phase 380V	3 Phase 220V	Recommended Heat Sink Units	
	Resistive Loads	Resistive Loads	Heat Sink	Fan
SCR-3 10A	1.3KW	0.9KW	110*100*80	80*80 220V
SCR-3 25A	3.1KW	2.1KW	110*100*80	80*80 220V
SCR-3 40A	5KW	3.3KW	150*100*80	80*80 220V
SCR-3 60A	7.5KW	5KW	150*100*80	80*80 220V
SCR-3 80A	10KW	6.7KW	9225	90*90 220V
SCR-3 100A	12.5KW	8.3KW	9225	90*90 220V
SCR-3 120A	15KW	10KW	9225	90*90 220V
SCR-3 150A	18.8KW	12.5KW	9225	90*90 220V
SCR-3 200A	25KW	16.7KW	9225	90*90 220V

Special Notes

1.Resistive Loads means: incandescent lamps, resistive wires, ovens, heating rods.

2. Cannot be used for inductive loads: transformers, line country, fan motors, pump motors. Can not be speed regulation

3. Resistive Loads with large changes in thermal resistance, such as silicon-carbon rods, silicon-aluminum rods, platinum Pt, graphite than the selection of inductive loads a grade.

4. Can not use the load: household appliances (such as televisions, computers), electrical appliances with switching power supply.

II. Dimensions and Wiring

① Product external dimensions

Overall dimensions: L105mm x W72.5mm x H43mm

This series of single-phase three-phase all the current size is the same.

Product Size

Take 40 as an Example

Mounting Hole Size


N
INPUT
L
Aigoodele
1 Phase Power Regulator
SCR-1
H220 A 220VAC
N2
OUTPUT
L2
+5V
1~5V
COM
1~10V
4~20mA
RUN POWER

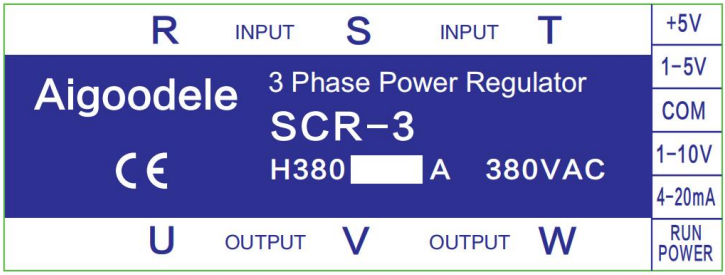

N
INPUT
L
Aigoodele
1 Phase Power Regulator
SCR-1
H220 A 220VAC
N2
OUTPUT
L2
+5V
1~5V
COM
1~10V
4~20mA
RUN POWER

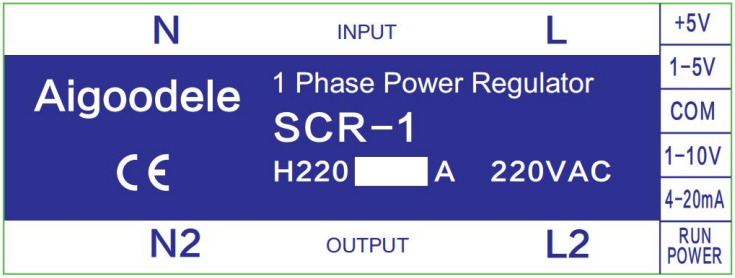

N
INPUT
L
Aigoodele
1 Phase Power Regulator
SCR-1
H220 100 A 220VAC
N2
OUTPUT
L2
+5V
1~5V
COM
1~10V
4~20mA
RUN POWER

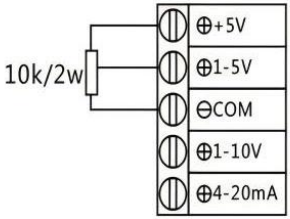
②Control terminal wiring instructions

※ Instructions for using the fully compatible input control mode

Unique all-compatible input control mode, so that the product for 0-5Vdc, 0-10Vdc, 4-20mA, 1-5Vdc, 0-10mA and other automatic methods can be adapted, without the need for special special order, but also can be used manual control.



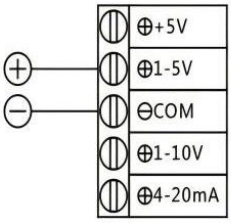




Manual Control Mode of Potentiometer

As shown in the figure, the higher the voltage at the adjustable terminal, the greater the module output+ The 5V voltage is generated by the module itself and does not need to be provided externally. It is only used in conjunction with the manual potentiometer, not for other purposes. The selected potentiometer resistance is 10KΩ

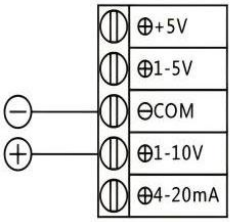
10k Manual Control Input



0-5Vdc Control

As shown in the figure, it can accept 0-5Vdc analog signals of single chip microcomputer, the positive pole of input control is connected to 0-5V terminal, and the negative pole is connected to COM terminal. The input impedance between 0-5V terminal and COM terminal inside the module is greater than 30KΩ

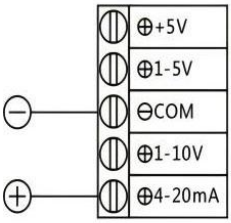
0-5VDC
1-5VDC **Control Input**



0-10vdc Control Mode

As shown in the figure, it can accept 0-10Vdc analog signals of PLC, etc. The input impedance of 0-10Vdc end relative to COM end inside the module is greater than 15K. When this mode is adopted, the+5V end and COM end are shorted, and 0-10vdc control end enters by way of

0-10VDC
2-10VDC **Control Input**



4-20mA Control Mode

As shown in the figure, 4-20mA analog signal of temperature control meter can be accepted, and the input impedance between 4-20mA end and COM end inside the module is 250Ω

4-20mA **Control Input**

Attention:

1. Each function terminal must be positive relative to COM terminal, COM terminal is negative, if the polarity is reversed, the main circuit output of the module may be out of control.

2. The control characteristics of each functional end of the product are positive, i.e., the higher the control voltage, the higher the output voltage of the main circuit of the module.

3. At the same time, it is appropriate to use an input control mode, if more than two modes are input at the same time to use , it is generally a stronger input signal to play a major role, if you want to use both manual and automatic, for example, automatic connected to the 4-20mA terminal, manually connected to the 0-5V terminal, you can switch the function through the double-throw switch.

③ Load Wiring Diagram

Default products can not be connected to the zero line