





# Thyristor Power Regulator - Micro computer.

## *Operation & Maintenance Manual*

Thanks for your purchase.

Please read the manual carefully before operation, and keep the “instruction” and “Guarantee” properly.

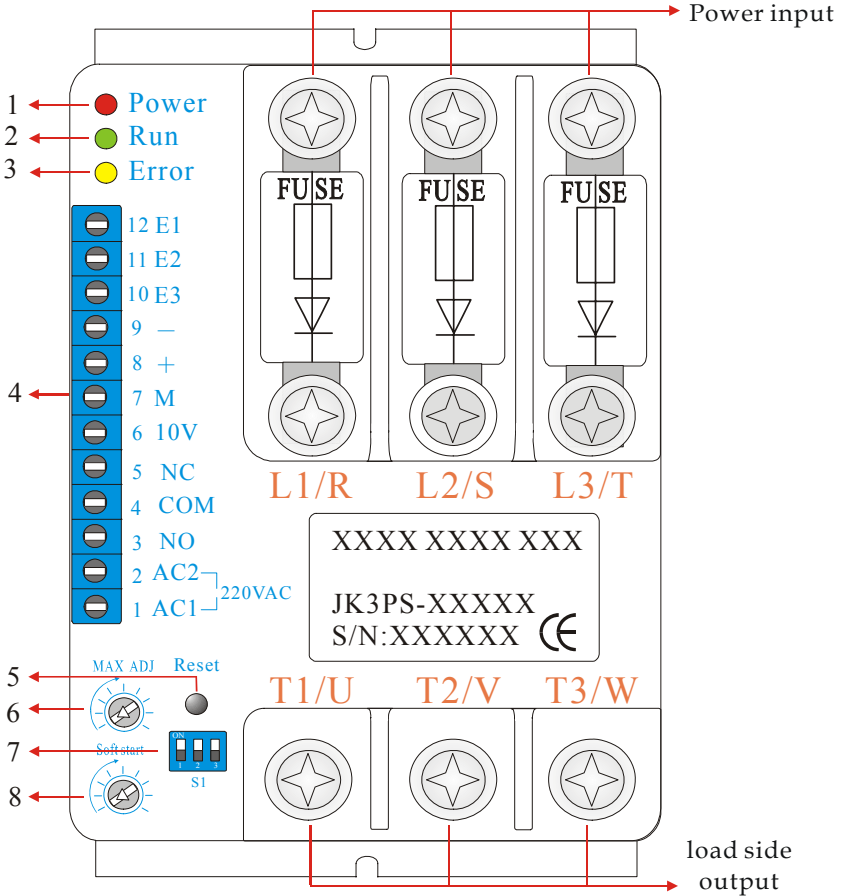
*English Edition v 06.12*

June.12.2012 Made.

# Content of SCR power regulator - micro computer model

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# I. Function of panel and instruction



1.Power: indication light of auxiliary power.

2.Run: indication light of output.

3.Error: indication light of exceptions.

4. Terminal block.

5.Reset

6.Max adj.: adjusting knob of maximum limit.

7. Signal choice of input.

8.Soft start: soft starting time (0 ~ 16 sec.)

Instruction of LED on panel:

1. Power: the indication light ON when auxiliary power (AC1, AC2) connect with 220 VAC. 50/60 Hz : auto-judging.
2. Run: LED will be glimmering for output of SCR product.
3. Error: indication light of exceptions;
  - (1) R phase disconnection: when the R-phase fuse disconnection, the LED will flicker once and the protection function is activated.
  - (2) S phase disconnection: when the S-phase fuse disconnection, the LED will flicker twice and the protection function is activated.
  - (3) T phase disconnection: when the T-phase fuse disconnection, the LED will flicker three times and the protection function is activated.
  - (4) Over-temperature: when the S.C.R. module over temperature (the body over-temperature 90°C over), LED flicker four times and the protection function is activated. When the heat sink temperature dropped to 75°C, automatic restart SCR, obey the command of the PID temperature controller's signals for the heating action.
  - (5) Loss three phase power: When the three-phase power did not into the RST side, LED sustained light and the protection function is activated.
4. Max. adj.: the current can be adjusted by adjusting knob depends on the environment or requirement.
5. Soft start: soft start time adjusting (0 ~ 16 secs).



## Q & A

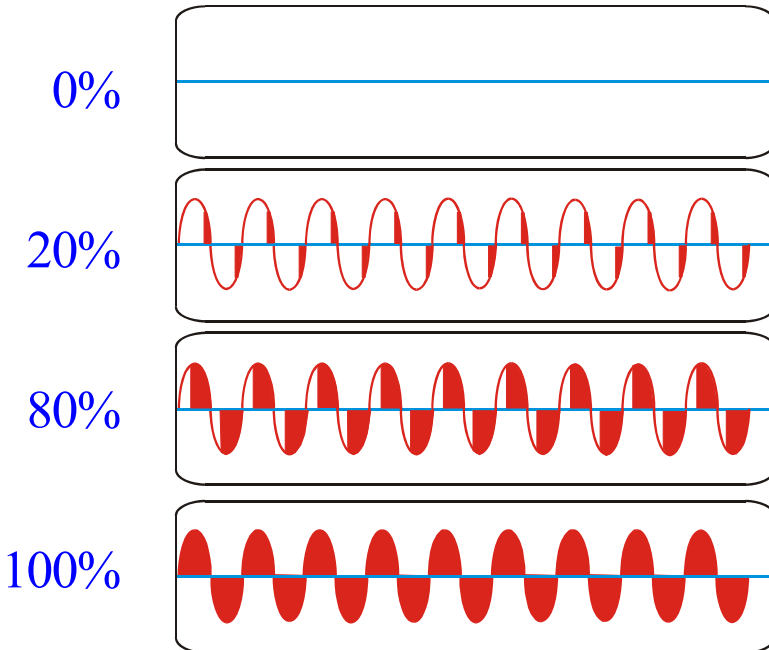
**Q: How to reset if indication light of error ON and abnormal condition has been resolved?**

**A: Please check the problem is load short or machine overheat first, then remove error condition, and press reset key to reset.**

## II. Introduction of function:

Phase Angle

Output:



Characteristics: Control SCR to AC cutting phase angle according to input signal, and cutting with each frequency, and its output stable.

Advantage: This machine can be output continuously without intermittent, suitable to resistive load or inductive load, and start the load with bigger current, eg : short wave IR lamps. (The soft start time 0 ~ 16 sec. can be choose for output reaction speed.)

### **III. Characteristics of Products & Protection:**

1. Maximum supply and exterior VR can be adjusted.
2. Signal receiving can be adjusted, offer : 4 ~20 mA, 0~5V, 1~5V, 0~10V, 2~10V. Ex-factory standard settings is 4~20 mA.
3. Use frequency ; 50/60 H, auto-judging switching.
4. Offer soft start 0 ~ 16 sec., it can be adjusted.
5. Overheat protection, auto protection with system retrip when machine I overheat.
6. The use-life of fan can be extended to 2 - 3 times when heat sink running at 55°C and stop at 45°C .
7. To check each phase's broke with 3 LED indication lights of R.S.T., eg : the user can change fuse immediately without checking by electric meter when fuse blown.
8. For protection of load short, includes semi-conductor's fast fuse to prevent.
9. For error output contact, offer one set (1A, 1B) error contact output as system emergency control when machine over heat or fuse blown.
10. LED indication light will be glimmered 3 times to warn for fuse overheat.

#### IV. Technical specification:

Main power : 220 VAC, 380 VAC, 440 VAC, 480 VAC $\pm$ 10%

Control power : 220 VAC $\pm$ 10% 【offer 110 VAC for choice, please tell our salesmen if necessary.】

Rated current : 20A, 33A, 43A, 65A

Operation frequency : 50 ~ 60 Hz $\pm$ 5%, auto-judging

Output range : 0 ~ 100 %

Output Way : linear voltage output, phase output.

Control signal of phase output : 4~20mA, 0 ~ 5 V, 1 ~ 5V, 0 ~ 10 V, 2 ~ 10V.

Use environment : -10°C ~ 50°C , humidity 90%RH↓

Working temperature : -10°C ~ 50°C

Maximum relative humidity : 93% no congeal as water drop

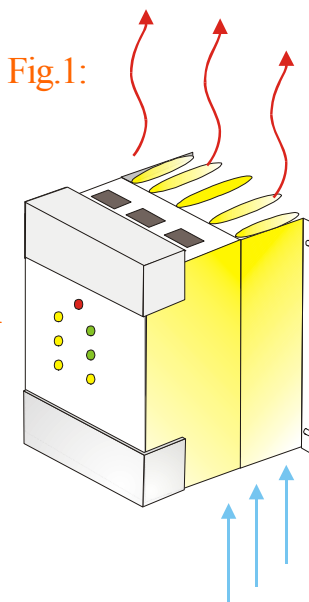


## V. Attention of Installation:

1. Ventilation : SCR power regulator must be installed in cool and ventilated place, the room temperature must be below  $50^{\circ}\text{C}$ , and higher than  $-10^{\circ}\text{C}$ .
2. SCR itself will have heat, therefore, please pay attention to fan's ventilation when install the machine, and keep 10 cm at least from other tools or machine for well ventilation.
3. Please give up hole and down hole when install in the control box in order to cool air enter from down hole and hot air out from up hole; the hole must add filter net to avoid dust or impurities blocking, and please clean regularly to avoid blocking.
4. The fan should be added if the temperature of control box is over  $50^{\circ}\text{C}$ , and give more air convection to keep the temperature of control box under  $50^{\circ}\text{C}$  for best operation.
5. Please set input signal first before installation and power supply to make sure thermometer can be coordinate with the product to run normally.

### Explanation of Installation :

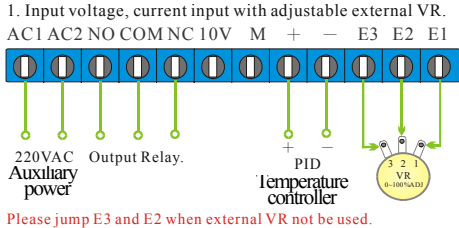
Please install the product with this direction, in order to let cool air enter from bottom, and hot air comes out from top. Please add filter net to avoid dust or impurities blocked if the control box has holes, and clean the net regularly to avoid the net blocking.



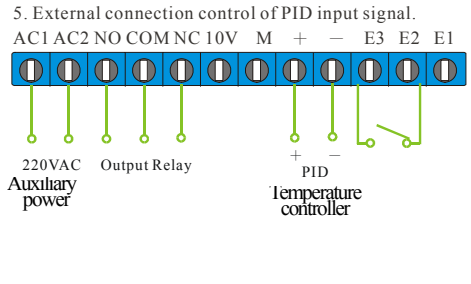
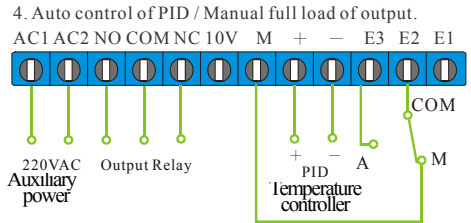
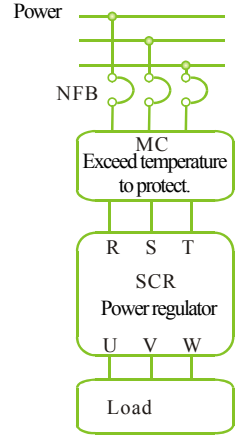
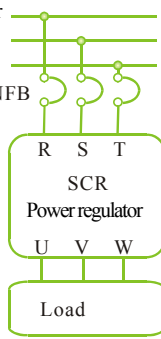
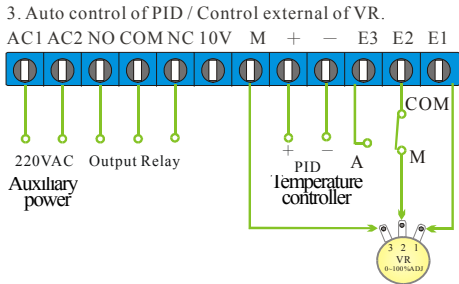
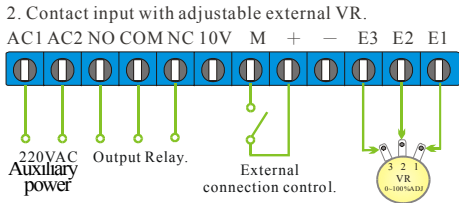


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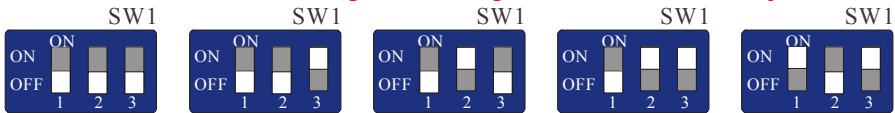
## Control wiring diagram, Phases control.



Please jump E3 and E2 when external VR not be used.



Setting input single. The white part of the dip switches need to be adjusted to the location..



0-5V

1-5V

0-10V

2-10V

4-20mA



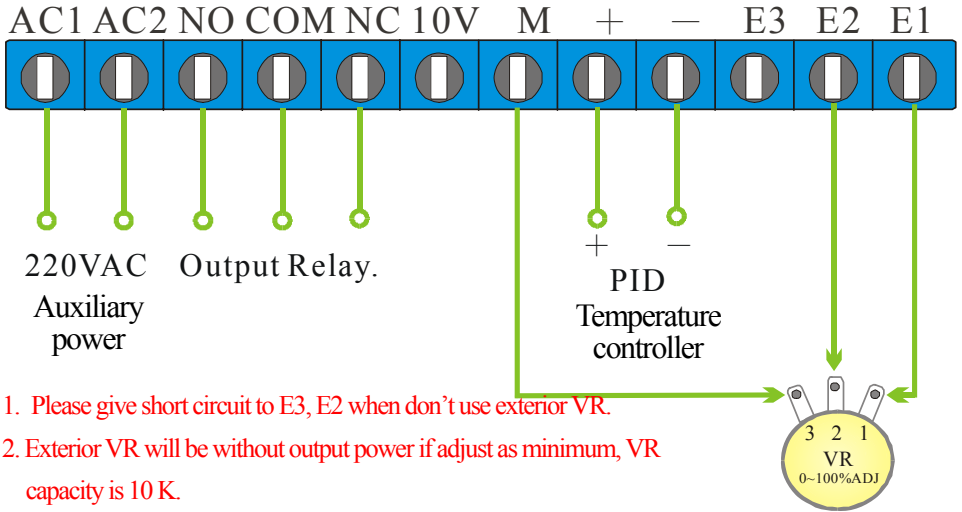
1. Please give short circuit to E3, E2 when don't use exterior VR.

2. Exterior VR will be without output power if adjust as minimum, VR capacity is 10 K.

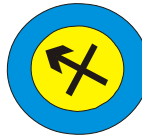
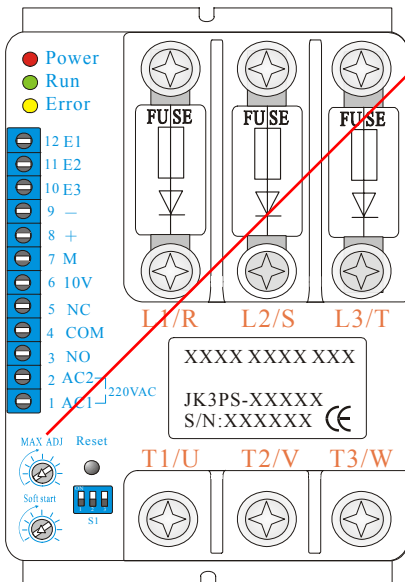
3. Point M is controller output DC5V/100mA.

## VI. How to determine the SCR whether breakdown.

1. Remove original wiring of +, E3, E2, and E1.
2. M connects +, short-circuit of E3, E2.
3. Adjust the knob on panel board, This SCR is OK if Max set output can be adjusted.
4. The value checked should be over 5VDC after check one to M with DC gear of multimeter.
5. The value of one to E3, E2 should be 4.6 ~ 5VDC.



1. Please give short circuit to E3, E2 when don't use exterior VR.
2. Exterior VR will be without output power if adjust as minimum, VR capacity is 10 K.



Max. limit knob of panel.

## VII. Environmental characteristics :

Operation position	Vertical
Relative humidity	45%↑, 93 RH, no congeal as water drop.
Room temperature	- 10°C ~ 50°C
Frequency	50 Hz or 60 Hz, auto-judging
3Ø power, voltage	220VAC <sup>+10%</sup> 380VAC <sup>+10%</sup> 440VAC <sup>+10%</sup> 460~480 <sup>+10%</sup> °
Vibration	0.5G ↓
Height	1,000M ↓ °

## VIII. Guarantee of product



We guarantee that our products are conformed to each specification list on the manual; the product can be operating normally with suitable and proper installation.

Warranty : one year from the date of production. We shall offer free maintenance if our product has any flaw certainly within warranty period. The warranty doesn't include error installation, man-made damage, and the damage caused by irresistible natural disasters.

This guarantee offer repair guarantee of the product only, not includes other damage caused by any direct or indirect accidents.

Model No. :	<input type="checkbox"/> JK3PS- <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		
Serial No. :	S/N:		
Date of Installation:	Month:	Date:	Year:
Agent:			

