

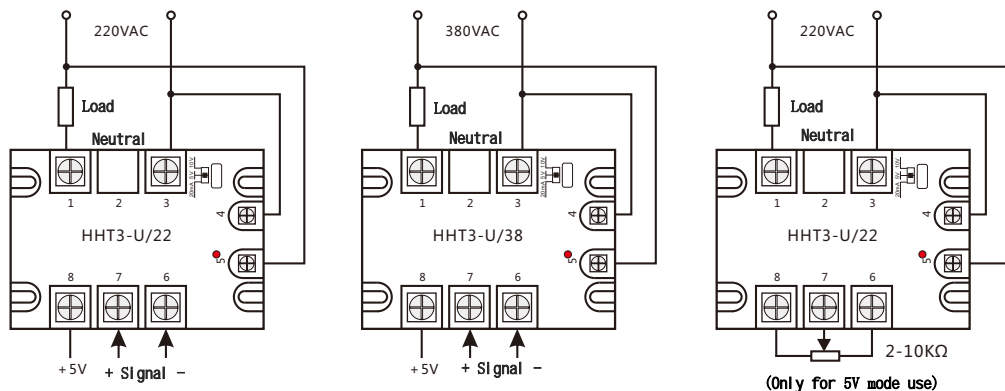
## VIII. Instructions for Use

### 1. Schematic Diagram of External Wiring

A: Automatic Control Circuit Diagram for 220VAC

B: Automatic Control Circuit Diagram for 380VAC

C: Manual Control Circuit Diagram



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## IX. Precautions:

1. Installation Method: It can be wall-mounted, installed vertically, or horizontally. When wiring, remove debris from each copper terminal and tighten the screws; otherwise, the terminals will heat up and get damaged.
2. For incoming lines and of the synchronous AC circuit, there is no phase sequence requirement. The wire gauge should be selected according to the actual operating current. Terminals and are connected to the load.
3. Overcurrent Protection: If an overcurrent occurs during use, first check whether the load has a short-circuit fault. A fast fuse can be installed in front of incoming line or of the product, and its specification can be chosen as 1.5 times the actual load current.
4. The product should be used with a heat sink. Ensure there is sufficient heat dissipation space between it and other devices in the cabinet. If necessary, install a fan for forced heat dissipation. The heat dissipation effect is related not only to the actual operating current and the size of the heat sink but also to factors such as ambient temperature (summer, winter), ventilation conditions (natural cooling, forced cooling, air volume), and installation density.
5. When selecting the product, derating is required: use 60% of the rated value for resistive loads, 30% of the rated value for silicon carbide rod loads, and 15% of the rated value for motor loads.

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### 2. Voltage Parameters and Setting

and are output terminals, corresponding to the output terminals of random-type solid-state relays. The output regulation has two specifications: 220VAC and 380VAC. Terminal is vacant and has no function on this voltage regulation module. and are the internal power supply and synchronization signal of the module, divided into two specifications: 220VAC and 380VAC. Modules with the 220VAC specification can be used in the voltage range of 170–240VAC, and modules with the 380VAC specification can be used in the voltage range of 330–440VAC. This voltage must be in phase with the load voltage. (-) and (+) are signal input terminals, receiving analog signals from temperature controllers or PLCs. is an internal 5V power supply, which is only used for manual control of the potentiometer. The high-voltage part of , , , and and the low-voltage part of , , and are fully isolated.



The red rubber plug can be opened to select the following control modes:

- 20mA: 4--20mA
- 5V: 0--5V signal
- 10V: 0--10V signal

Note: When using a manual potentiometer for adjustment, select the 5V signal mode.

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### Ordering Information :

When placing an order, please specify the product model, voltage and current ratings, and quantity. If there are special requirements, please indicate them separately.

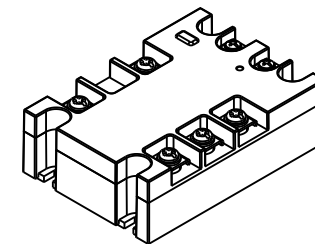
Example: HHT3-U/38 40A, 100 units

**C-Lin** 欣灵电气股份有限公司  
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使用说明书



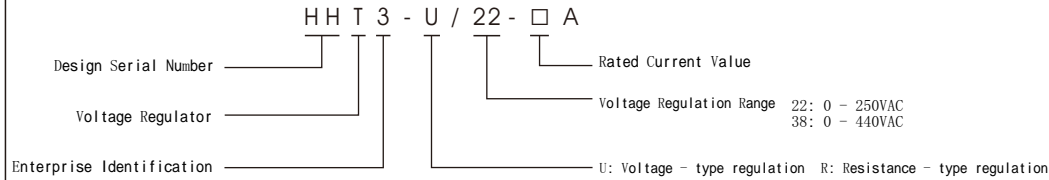
HHT3-U Single-phase AC Voltage Regulation Module

Thank you very much for using the C-Lin single-phase AC voltage regulation module.

# I. Introduction

The fully isolated single-phase AC voltage regulation module (hereinafter referred to as the voltage regulation module) is manufactured by integrating random-type solid-state relays, random-type SSR phase-shifting triggers, and synchronous transformers (which serve as the internal power transformer of the module). Its principle is: under the action of a synchronous voltage (this synchronous voltage also acts as the working voltage of the module), through synchronous phase detection, phase shifting, and triggering, a phase-shifted trigger signal can be generated via automatic control with 0-5VDC or 0-10VDC signals or manual control with a potentiometer, so as to trigger corresponding components (thyristors) to achieve phase-shifting voltage regulation. For manual control, only an external potentiometer is required to adjust AC power; for automatic control, the voltage regulator only needs to input 0-5VDC or 0-10VDC voltage or 4-20mA current for adjustment. It can replace heavy contact voltage regulators in many occasions. The product is widely used for analog adjustments of power, voltage, temperature, brightness, speed, etc. in petrochemical instrument equipment, food machinery, packaging machinery, textile machinery, and stage lighting.

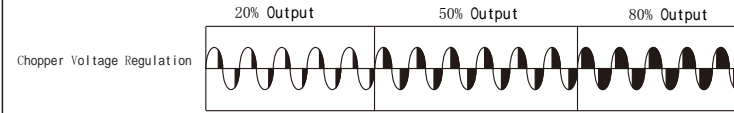
# II. Model Naming



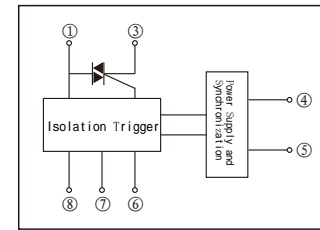
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# IV. Output Waveforms

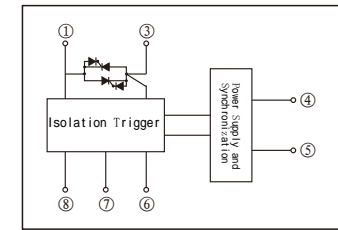
The difference between chopper voltage regulation and cycle power regulation is shown in the following figure.



# V. Internal Circuits



HHT3-U (10-40A)



HHT3-U (100A)

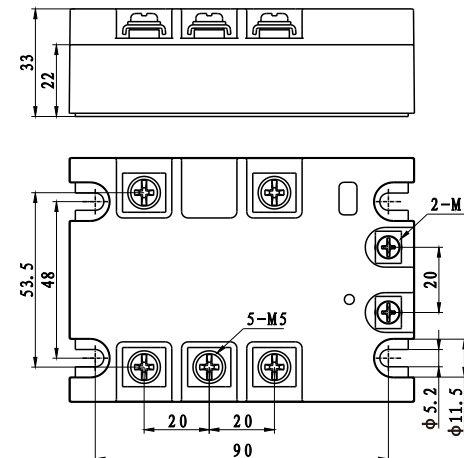
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# III. Technical Parameters

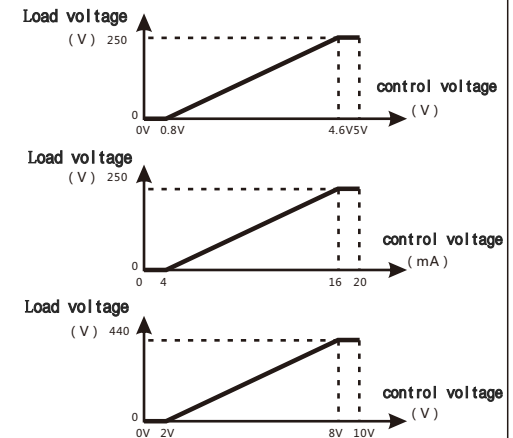
1	Control Mode	Adjustment via 0-5VDC、0-10VDC、4-20mA				
2	Output Voltage Type	AC220V			AC380V	
3	Output Voltage Range (V)	AC 0~250V 50/60Hz			AC 0~440V 50/60Hz	
4	Rated Output Current (A)	10	20	30	40	100
5	Output Voltage Drop (VAC)	≤1.6				
6	Output Leakage Current (mA)	≤10				
7	Transient Voltage (V)	1200				
8	Insulation Resistance (MΩ)	≥100				
9	Dielectric Withstand Voltage (V)	2000VAC				
10	Operating Temperature ( )	-20°C ~ +70°C				
11	Electrical Life	1,000,000 cycles				
12	Isolation Voltage	Active type, fully isolated				
13	Working Status Indication	LED				

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# VI. Outline and Mounting Dimensions



# VII. Relationship Curves between Control Voltage and Load Voltage (for Resistive Loads)



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