

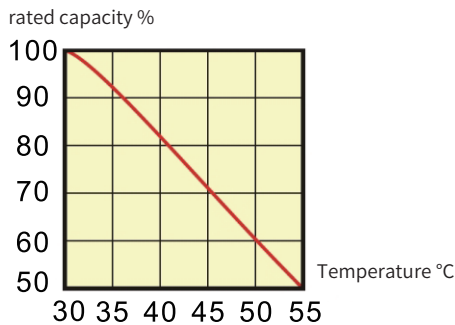
Thank you for choosing our HGW1-C/V single-phase versatile SCR power regulator. Suitable for resistive or inductive loads, it can be used for ordinary phase control, and be connected to feedback control signals for current limiting and constant current-voltage control.

Thanks to the dedicated phase control IC in its control board, the regulator features excellent sawtooth wave linearity, a wide phase-shifting range, automatic stability, and overcurrent cut-off protection, making it widely used in various temperature control applications.

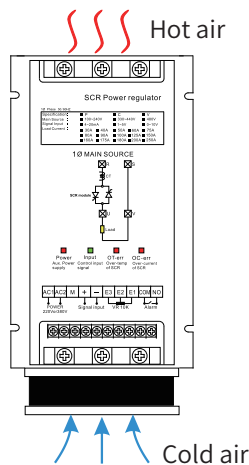
1. Installation Method and Main Circuit Wiring Diagram

Installation Method:

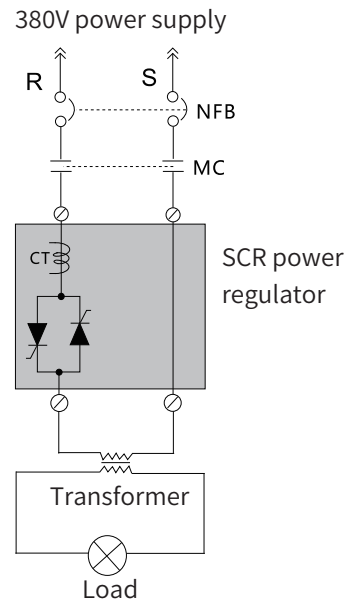
Since SCR power regulators produce internal heat, vertical mounting (per the direction indicated in the diagram) on the control cabinet's inner wall is required—with gaps left on both sides. Furthermore, the cabinet must have air convection vents, and an exhaust fan should be fitted following the "hot air rises" principle.



SCR Capacity-Temperature Attenuation Table



Standard Main Circuit Wiring Diagram :

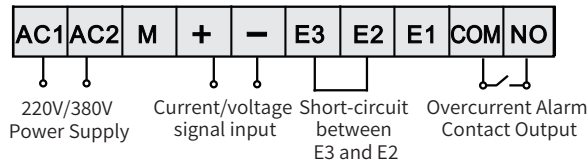


2. Terminal Wiring Diagram

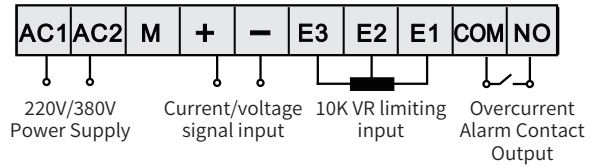
J1 Terminal Wiring Instructions (check the diagram below for various wiring methods)

AC1 and AC2 Terminals (Internally connected) : Connect to a power supply that matches the load (380V to 380V, 220V to 220V). For correct phase sequence, lead a wire from the regulator's R-phase power supply to AC1 and another from the S-phase power supply to AC2.	For "+" and "-" terminals: Used to connect to 4-20mA, 1-5V, 0-10V, and other signals output by temperature controllers or other controllers.
M Terminal: Short - circuit it with the "+" terminal to achieve contact control; connect it to the E2 and E3 terminals to enable manual potentiometer output.	For E3, E2, and E1 terminals: Connect to a 10K potentiometer to form output limiting. For COM and NO terminals: Serve as overcurrent alarm relay contact output.
J3 4-Pin Header Short-Circuit Instructions	
Short-circuit for 4-20mA: Control input signal is 4-20mA, 0-20mA, and manual input.	Short-circuit for 1-5V: Control input signal is 1-5V and 0-5V. Short-circuit for 0-10V: Control input signal is 0-10V and 2-10V.

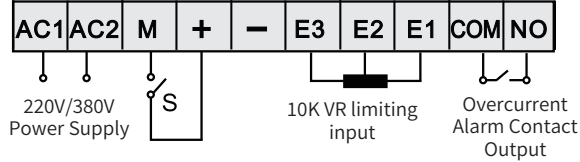
1. Current/voltage input, with non-adjustable output percentage



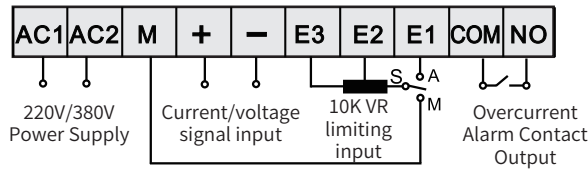
2. Current/voltage input with adjustable output percentage



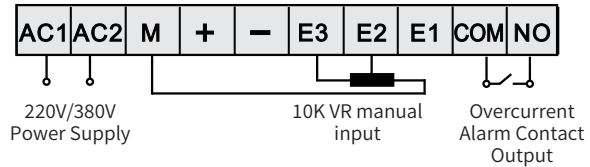
3. Contact signal control input with adjustable output percentage



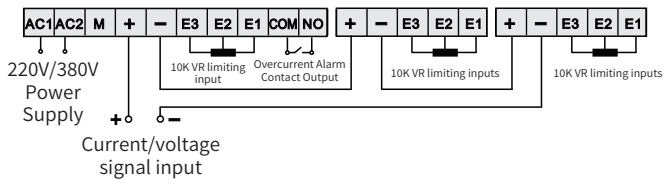
5. Manual/automatic switching (set the S switch to "M" for manual mode or "A" for automatic mode)



4. Manual potentiometer input. Rotate the potentiometer to adjust the output



6. Up to three units sharing one control signal, each with adjustable output percentage requires current/voltage



3. Potentiometer Function Description (All potentiometers are pre-adjusted at the factory; no adjustment is needed unless specifically required)

W2: Current Limiting Potentiometer

Limits the maximum current for silicon carbide rod loads; adjusts the maximum current when constant current control is applied to silicon molybdenum rod loads. Turning it clockwise decreases the maximum current.

W3: Overcurrent Protection Potentiometer

Pre-set at the factory to detect overcurrent when the current reaches 150% of the rated current, triggering an immediate output cutoff within 10ms and closing the overcurrent alarm relay. Users can adjust it according to actual load current; turning it clockwise reduces the threshold.

W4: PID Adjustment Potentiometer

Pre-adjusted at the factory. If output oscillation occurs during constant current or constant voltage control, this potentiometer can be adjusted appropriately.

W5: Sawtooth Wave Amplitude Adjustment Potentiometer

Pre-set at the factory. Users must not modify it.

4. Panel Indicators and Fault Description

POWER (Red): Power Indicator

Illuminates when the regulator's control board is powered; if not lit, check whether the power supply is connected to AC1 and AC2.

INPUT (Green): Input Signal Indicator

Brightness varies with the input signal strength; if not lit, check whether the control signal is connected to the regulator's signal input terminal and whether the signal polarity is reversed.

OT-err (Red): Over-temperature Protection Indicator

Remains off during normal operation; if lit, an over-temperature alarm is triggered. Check for fan malfunctions or excessively high ambient temperatures.

OC-err (Red): Overcurrent Protection Indicator

Remains off during normal operation; if lit, check for load short circuits or current exceeding 1.3 times the regulator's rated current. The alarm can only be reset by powering off after troubleshooting.

Load (Yellow): Output Indicator

Brightness varies with the output current; if not lit, check whether the regulator is powered or the input signal is connected.

5 Selection Table

Model Identification:

HGW1

Specification

Code

Single-phase

1

Main Power Supply

Code

100~240V

2

330~440V

4

480V

8

Current

Code

30A

030

40A

040

50A

050

60A

060

Current

Code

75A

075

80A

080

90A

090

100A

100

Current

Code

125A

125

150A

150

175A

175

200A

200

Current

Code

225A

225

250A

250

300A

300

400A

400

Output Mode

Code

Phase Output

P

Zero Output

Z

Constant Current Output

C

Constant Voltage Output

V

Current Calculation Formula:

$$\text{Single-phase: SCR Ampere} = 1.2 \times \frac{\text{Load (KW)} \times 1000}{\text{Voltage (V)}}$$

Specification and Model Table:

Specification and Mode	Current	Appearance Dimensions (mm):			Fixed Dimensions (mm)		Cooling Method
		Length	Width	Height	Length	Width	
HGW1-1-4-(030~200)-C/V	030~200A	250	140	185	170	135	Forced air cooling
HGW1-1-4-(225~400)-C/V	225~400A	290	140	185	170	135	Forced air cooling