SCR VOLTAGE REGULATOR
HGW7 SERIES

Contents

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1. Appearance and Product Features

- It is a full-featured and fully intelligent SCR power regulator, featuring phase stability, constant current, constant voltage, constant power, zero position, and direct switching between phase control and phase + zero position control.
- Multiple input methods are available, and settings can be directly configured via software using the keyboard.
- It is equipped with intelligent protection functions, including phase failure protection, over-temperature protection, over-current protection, etc.
- Boasting high output linearity, it achieves precise percentage control via a single-chip microcomputer.
- Real-time display of output and input enables continuous monitoring of the regulator's operating status.

2. Safety Instructions, Warnings and Precautions

⚠ Safety

1. Before use, please carefully read the safety instructions. (those marked with this symbol contain important safety information and must be strictly followed).
2. f this product is used in equipment that may cause personal injury or major property loss, it must be equipped with double or triple protection devices before use.
3. When the SCR is not providing output, it is not completely isolated. It is recommended to install a No-Fuse Breaker (NFB) without fail.
4. When maintaining the equipment, the main power supply must be isolated. Simply turning off the SCR is insufficient, as its output terminal will still be live, which may lead to the risk of electric shock.
5. It is recommended that the alarm output function of the power regulator be used, ensuring an alarm is triggered and output promptly whenever any abnormality occurs.

⚠ Warning

1. To ensure the long-term use of this product, please use it at the standard rated input voltage correctly.
2. Unauthorized disassembly, processing, modification, or repair of this product is prohibited, as this may result in electric shock, fire or other hazardous situations.

⚠ Precautions

1. Please confirm that the product has not been damaged during transportation before use. The operating environment has a significant impact on the performance and service life of this product.
2. Please avoid the following environments: with corrosive gases or harmful gases (when such gases are present, achieve effective isolation using a control cabinet or control room).
3. When installing the product in a control cabinet, please drill holes in the upper part of the cabinet and install an exhaust fan for heat dissipation.
4. The ambient humidity for use shall be below 90% RH (no condensation).
5. Operating ambient temperature: 0°C ~ +40°C (maximum 60°C). When the ambient temperature is between +40°C and +60°C, the rated current must be derated by 1.2% for each 1°C increase.
6. The wiring of input and output terminals must be securely fastened. The SCR is a 50cm high-current product; if the terminals are not fastened properly, arcing may occur, causing the current to increase severalfold.
7. The heatsink temperature is high during operation; do not touch it directly to prevent burns.

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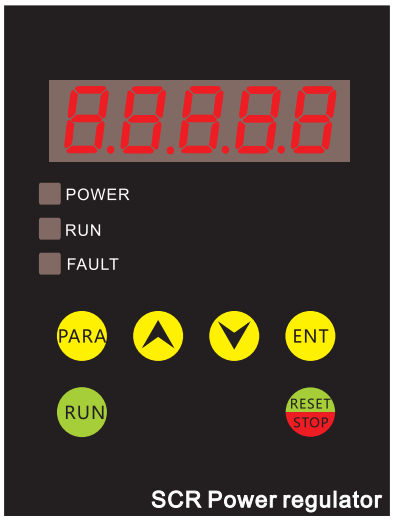
8. The input and output terminals pose an electric shock risk; avoid direct contact with conductors between these terminals and conductors.
9. Do not connect wires to unused terminals as this may cause circuit abnormalities.
10. Installation must follow the principles of thermal dynamics, and the product should be installed in a vertical (up-down) direction to ensure heat dissipation.
11. This product (including internal components) has a warranty period of 1 year under normal use conditions.
12. If the load is not connected or the load current is less than 0.6A, the SCR cannot be tested normally (a load current greater than 0.6A is required for normal operation/testing).
13. The neutral wire may be connected when loads share a common line.

3. Panel Function Description



Name	Function Description
LED Nixie Tube	Displays the device’ s current status values, parameter values, and parameter setting values.
POWER Indicator Light	Red, serves as the power indicator (illuminates when the device is powered on).
RUN Indicator Light	Green, illuminates when the power regulator operates normally.
FAULT Indicator Light	Red, illuminates when the device malfunctions (e.g., overcurrent, overheating).
Buttons PARA	Entering the parameter setting menu;
Buttons ∧	Parameters backward Switching: data increment key;
Buttons ∨	Parameters forward Switching: data decrement key;
Buttons ENT	Data Modification Confirmation Key, Switch back to the initial screen;
Buttons RUN	Keyboard Start;
Buttons RESET STOP	Keyboard Stop, Reset for fault conditions;

Note: When the display is in the parameter setting window, it will auto-return to the basic display state if no operation is performed for 15 seconds.At this point, modified but unsaved parameters will be discarded.

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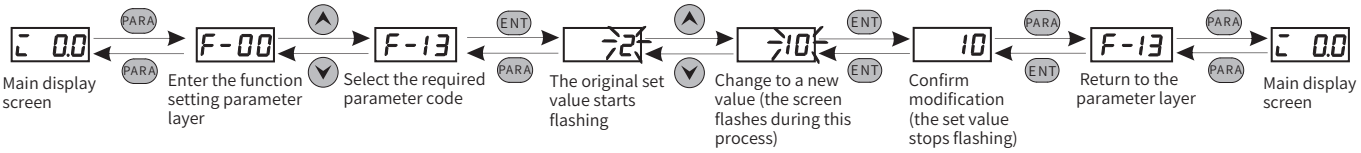
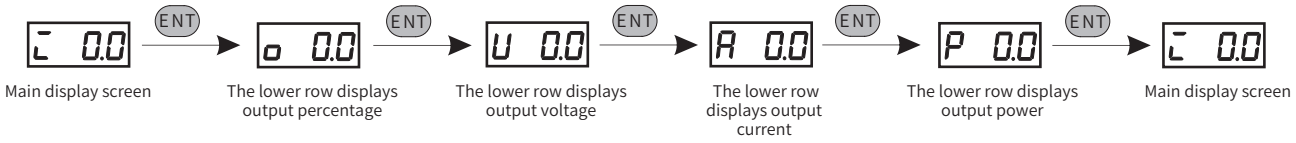
Function Setting Parameter Layer

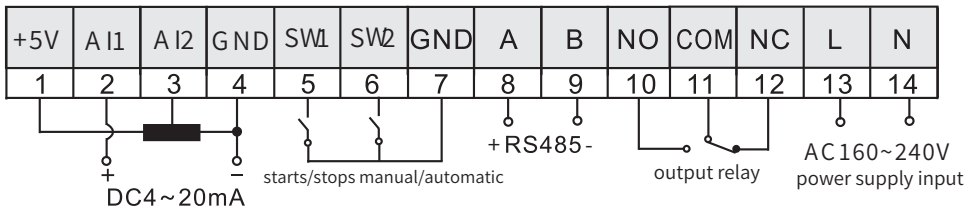
Parameter modification operation instructions (for example, changing the F-13 soft start time parameter from 2 seconds to 10 seconds; other parameter modification steps are similar):



Display Parameter Layer: The ENT key can switch the lower row to cyclically display input, output, voltage, current, and power.



4. Function description of control terminals



No.	Symbol	Function Description
1	+5V	Reference power supply +5V: Used as the given reference for external potentiometers
2	AI1	Analog input port 1: DC0~20mA/ DC4~20mA (input impedance 125Ω), which forms an input loop with terminal 4 (GND)
3	AI2	Analog input port 2: 0~5V input/ potentiometer input (center tap)/ DC 0~10V, which forms an input loop with GND
4	GND	Signal common ground: Negative pole of analog signals, common terminal of digital signals
5	SW1	Start/Stop control terminal: Cooperates SW1 with terminal 7 (GND) to form a start/stop control loop. When the two terminals are closed, the regulator operates; when open, it stops.
6	SW2	Analog input port selection: Cooperates SW2 with terminal 7 (GND). For closed-circuiting, selects analog input port 2; For opening-circuiting, selects input port 1
7	GND	Signal common ground: Negative pole of analog signals, common terminal of digital signals
8	A	RS485 communication port, RS485+
9	B	RS485 communication port, RS485-
10	NO	Relay output: By selecting function P-49 in the menu, this output terminal can be configured as either a running output signal or an alarm output signal. Load capacity AC240V/5A, DC24V/5A. NO (Normally Open) contact, NC (Normally Closed) contact.
11	COM	
12	NC	
13	L	Power supply for control board：AC220V±10%
14	N	

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⚠ Basic application wiring:

For a 4-20mA control signal input, connect the positive terminal to Terminal 2 (AI1) and the negative terminal to Terminal 4 (GND). Connect the 220V control power supply to Terminals 13 and 14; there is no distinction between live and neutral lines here. The start terminals (Terminals 5 and 7) are connected at the factory, so it starts up by default. If a start switch needs to be installed on the control cabinet, Terminals 5 and 7 can be used as switch terminals.

⚠ Safety Reminder:

When designing electrical circuits, it is recommended to utilize the alarm output function of the power regulator. The power regulator provides comprehensive protection for both the load and the power supply, and it can immediately alarm when any abnormality occurs.

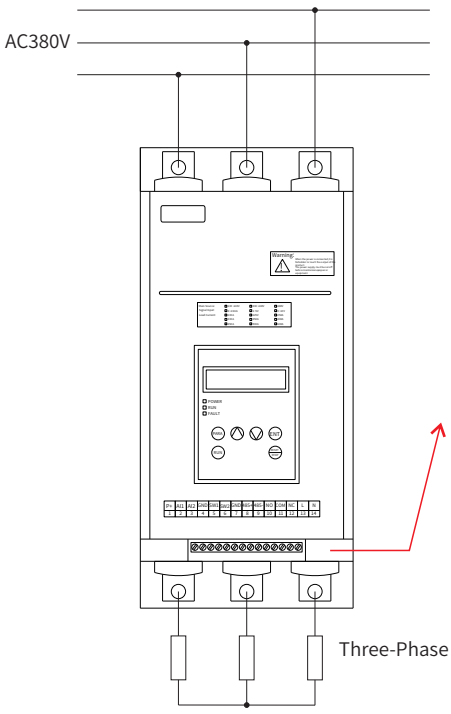
⚠

If a 0-10V analog input is required, please specify this in advance when placing an order. Then, connect the positive terminal to Terminal 3, the negative terminal to Terminal 4, and short-circuit Terminals 6 and 7.

5. Quick Start Guide

1. Main Power Supply /Main Circuit Wiring

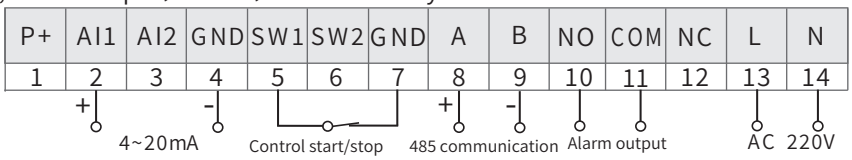
The first step after receiving the machine is to wire it. The wiring of the control board can be divided into three wiring modes according to different input signals. Regardless of which input signal is used, the wiring of the main circuit is all the same:



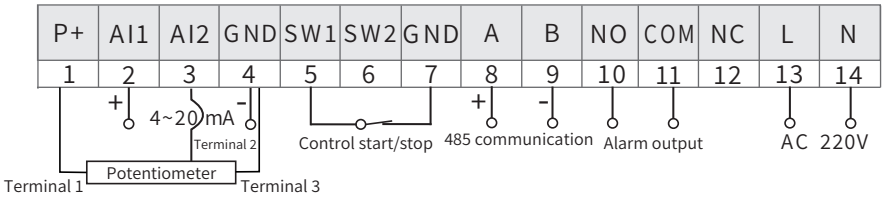
The load can be connected in Y-type or Δ-type. The neutral point of Y-type connection can be connected to neutral, but not to ground.

Control board wiring:

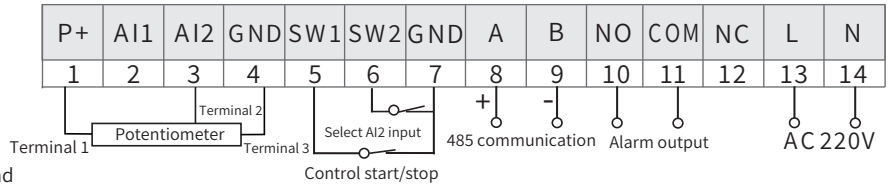
1,4~20mA Input，F11=0，F12=1 Factory Default



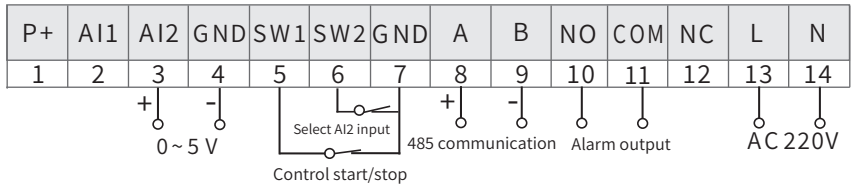
2, 4~20mA input,potentiometer limiting,F11=0,F12=2:



3, Potentiometer manual input,F11=0,F12=1



4, 0~5V input (Please specify that the order requires a 0–10V input when placing it.), F11=0,P12=1:



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2. Selection of Control Signal Input Mode

- The regulator supports both analog input and digital input modes for input signals.

This product defaults to analog input. The analog input range includes 4-20mA, 0-5V (default is 0-5V; please notify in advance if DC 0-10V input is required), and potentiometer input. For 4-20mA input, refer to the control board wiring described above for each input mode.

- If no analog signal is used during debugging, a digital input signal can also be used. Digital signals are divided into panel-set percentage and communication-set percentage, and the operation is as follows:
- 2.1 Panel-set percentage

First, set parameter F11 = 1. After returning to the main interface, press button “↑” on the panel to increase the value and button “↓” to decrease the value for setting the input; then the regulator can output.

- 2.2 Communication-set percentage

Set F11 = 1, enter the hexadecimal address and write the value. A range of 0–1000 corresponds to 0–100.0%.

3. Selection of Control Output Mode

- The regulator's control output modes are divided into phase control and zero-crossing control.
- Phase control includes phase-shift open-loop and phase-shift closed-loop; phase-shift closed-loop is further categorized into constant voltage, constant current, and constant power. Zero-crossing control modes consist of variable-cycle zero-crossing and fixed-cycle zero-crossing. The commonly used control modes are constant voltage control and constant current control.
- Constant voltage control (F20=0, F23=0) is the default control mode, regulated by PID. Output voltage = Input signal × Rated voltage. It is applicable to resistive loads such as resistance wires, heaters, and infrared heating tubes.
- Constant current control (F20=1, F23=0) is regulated by PID. Output current = Input signal × Rated current. Therefore, the rated current (F-57) should be set to the actual maximum output current of the load. Constant current control is commonly used for loads with large resistance variations, such as transformers, silicon-molybdenum rods, silicon-carbon rods, and graphite.
- Constant power control (F20=2, F23=0) is regulated by PID. Output power = Input signal × Rated current × Rated voltage. After setting the rated current to the maximum output current of the load, calculate the rated voltage according to the load power, and then set it in parameter F-56. It is generally used for PTC loads.
- Phase-shift open-loop (F23=1) is not controlled by PID and is greatly affected by the power grid. The output voltage varies with the conduction angle in a non-linear manner, with no soft start or soft shut-off.
- Cycle zero-crossing (F23=2, F26=1) is a zero-crossing control mode where the cycle is automatically adjusted to the smallest proportional cycle according to the input percentage, with fast on-off speed.
- Fixed-cycle zero-crossing (F23=2, F26=0) controls the average value of the load power by adjusting the ratio of the number of conducting cycles to the number of shut-off cycles via the trigger circuit within a 2-second cycle, with long on-off duration.

4. Soft Start and Soft Shutdown

- To control loads with large resistance changes, the soft start time (F-13) is usually increased to make the output current and voltage rise slowly.

Increasing the soft shut-down time (F-14) prolongs the shut-down duration.

- Unit: second.

5. Limiting Output Signal

- F-15 output upper limit is a limitation on the input signal, which in turn limits the output percentage, thereby limiting the output voltage and current. Unit: %, default value 100% indicates no output limitation.
- If the output upper limit is set to 80%, the analog input of 0~100% corresponds to the regulator's input percentage of 0~80%. Under constant voltage control, the output voltage varies between 0~380V*80%.

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6. Ways to Control Regulator Start-Stop

• There are three ways to control the regulator's start-stop: terminal start-stop, communication-controlled start-stop, and panel button-controlled start-stop. By default, this product uses terminals SW1 and GND to control the regulator's start and stop (parameter F10=0): it starts when the terminals are closed and stops when they are open.

• Panel Button Control for Start/Stop: Set F10=1. Press RUN to start the regulator and press STOP to stop it on the main interface.

7. Input Phase Loss Protection

• F51 is an input phase-loss protection switch. With the parameter set to 1, no input voltage triggers error "E--r2" on the display panel. After the fault is resolved, manually press the RESET/STOP button to reset. Set the parameter to 0, and there will be no phase loss alarm.

• To disable the phase loss alarm, first set F59 to 66, then set F51 to 0.

8. Load Current Imbalance Alarm

• For alarms when three-phase load power deviates, use the load imbalance alarm.

The alarm compares the output current (matching the current input percentage) with the threshold current.

When the current output current deviation exceeds the threshold current, the load current imbalance alarm is triggered.

• First, set alarm: set F52=1.

• According to the formula: Input percentage (F-01) × Rated current × Load imbalance threshold percentage (F-53) = Imbalance threshold current.

• For example:(Machine Model HGW7-4-4-100-P), For a purely resistive load, the output current is 80A at full power, and should be 40A at 50% output. An alarm is triggered when the current deviation exceeds 20A at 50% output.

• Substitute the known values into the formula: Input percentage = 50% = 0.5; Rated current = 100A; Threshold current = 20A.

Load imbalance threshold percentage =20A/05.*100=40%

• Set parameter F-53 to 40.

percentage (F-53) is 70, with a maximum setting of 70%.

• Notes on the formula:

The smaller the threshold percentage, the smaller the imbalance threshold current, and the easier it is to trigger an alarm. Conversely, a larger threshold percentage makes the alarm harder to trigger. The default value for the load imbalance threshold percentage (F-53) is 70, with a maximum setting of 70%.

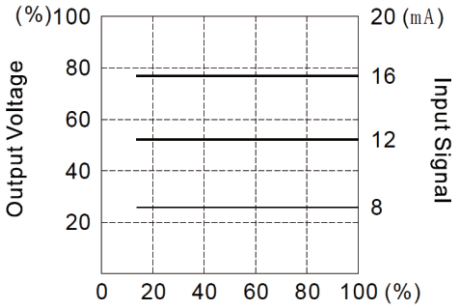
6. Function Description of Control Modes

Constant Voltage Control Mode

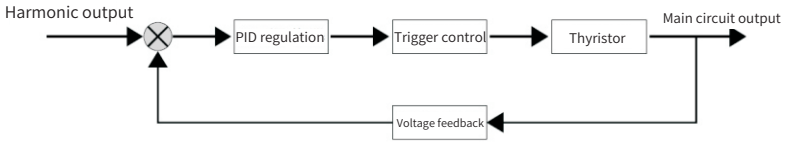
• Control mode setting: Parameter F-20 = 0, Parameter F-23 = 0.

• It is a control method that keeps the output voltage constant at the given voltage. When the grid voltage fluctuates or the load impedance changes, the regulator adjusts according to the PID law. Suitable for inductive, resistive and capacitive loads.

Constant Voltage Output Characteristic Diagram



Constant Voltage Logic Control Block Diagram



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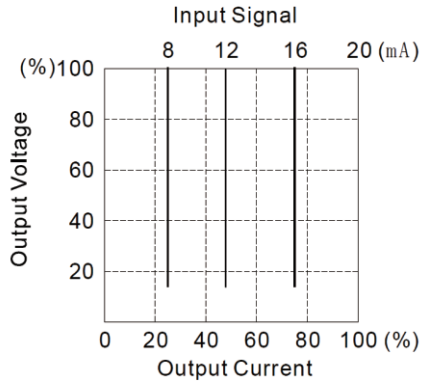
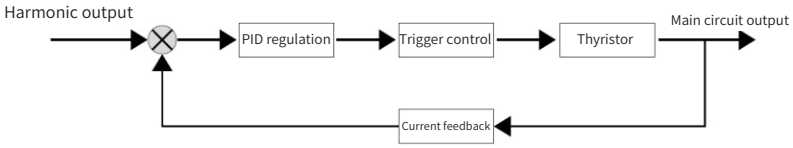
Constant Current Control Mode

- Control mode setting: Parameter F-20 = 1, Parameter F-23 = 0
- It is a control method that keeps the output current constant at the given current. When the grid voltage fluctuates or the load impedance changes, the regulator adjusts according to the PID law. Suitable for inductive, resistive and capacitive loads.

Constant Current Output Characteristic Diagram



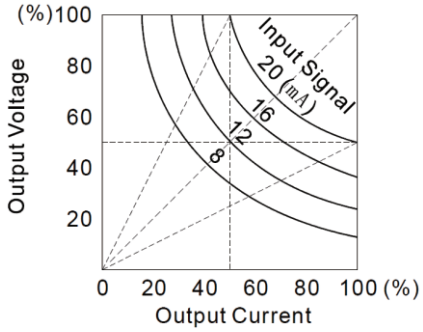
Constant Current Logic Control Block Diagram



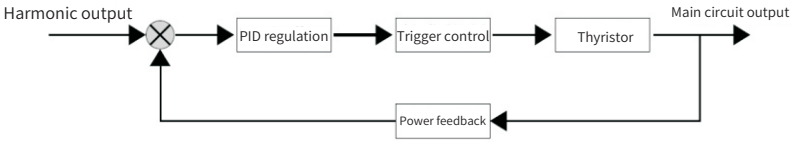
Constant Power Control Mode

- Control mode setting: Parameter F-20 = 2, Parameter F-23 = 0
- It is a control method that keeps the output power constant at the given power. When the grid voltage fluctuates or the load impedance changes, the regulator adjusts according to the PID law. Suitable for inductive, resistive and capacitive loads.

Constant Power Output Characteristic Diagram



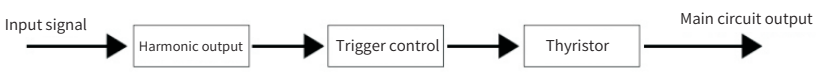
Constant Power Logic Control Block Diagram



Open-Loop Control Mode

- Control mode setting: F-23 parameter =1.
- It is a control method that directly controls the thyristor’ s turn-on level based on the input value. When the grid voltage fluctuates or the load impedance changes, the voltage or current cannot remain constant. Suitable for inductive, resistive and capacitive loads

Open-Loop logic control block diagram



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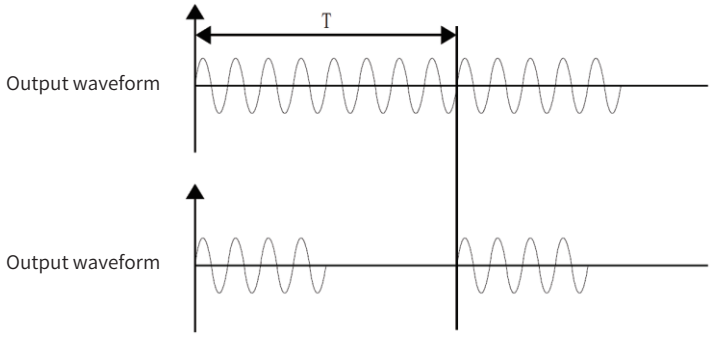
Zero-crossing Power Regulation Control Mode

- Control Mode: F-23 parameter =2, F-26 parameter is used to select the zero-crossing mode: 0 indicates fixed cycle, and 1 indicates variable cycle.
- A control method that does not cause harmonic pollution to the power grid. The number of cycles that the thyristor turns on in 100 cycles is determined by the input value, which is suitable for pure resistive loads.
- Schematic diagram of the zero-crossing power regulation output waveform, showing a given 50%.



7. Parameter description

F-00 to F-07 are read-only parameters, displaying the basic information of the regulator during normal operation.

F-00	Effective Output Percentage Display	Range	0.0~100.0%	Factory	-	Attribute	Read-only
F-01	Effective Input Percentage Display	Range	0.0~100.0%	Factory	-	Attribute	Read-only
F-02	Current Output Voltage Value Display	Range	Actual detected voltage value	Factory	-	Attribute	Read-only
F-03	Parameter Reserved	Range	-	Factory	-	Attribute	-
F-04	Phase A Output Current Display	Range	Range Actual detected current value	Factory	-	Attribute	Read-only
F-05	Phase B Output Current Display	Range	Range Actual detected current value	Factory	-	Attribute	Read-only
F-06	Phase C Output Current Display	Range	Range Actual detected current value	Factory	-	Attribute	Read-only
F-07	Current Output Power Value Display	Range	Actual detected power value	Factory	-	Attribute	Read-only

- F -08 to F -32 are function setting parameters, which can change the function parameters to make the regulator achieve the required function.

F-08	Start-Stop State	Range	0：Stop; 1: Start；	Factory Value	0	Attribute	Read-write

This communication can be used to control the start, stop status of the regulator. Through this parameter, the start and stop status of the regulator can be viewed.

F-09	Digital Given Signal Input Percentage	Range	0.0~100.0%	Factory Value	0	Attribute	Read-write

Digital setting can be made via the regulator's internal keyboard or communication method to control the regulator's output.

Note: Data entered in this function window will not be saved after a power failure.

F-10	Start-Stop Mode Type Selection	Range	0, 1	Factory Value	0	Attribute	Read-write

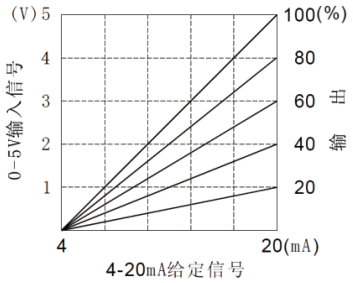
- 0: When terminal 5 (SW1) and terminal 7 (GND) are short-circuited, the regulator starts; otherwise, it stops.
- 1: Panel control: The start and stop of the regulator are controlled via the RUN and STOP keys on the display panel.

F-11	Given Signal Type Selection	Range	0, 1	Factory Value	0	Attribute	Read-write

- 0: Analog given mode: The regulator’ s output setpoint is configured via external current signals (0~20mA/4~20mA) or voltage signals (0~5V, 0~10V).
- 1: Digital given mode: The regulator’ s output setpoint is configured via the panel or communication. For example: By setting the parameter F-11 to 1, the regulator can be given control through communication and keys on the panel.

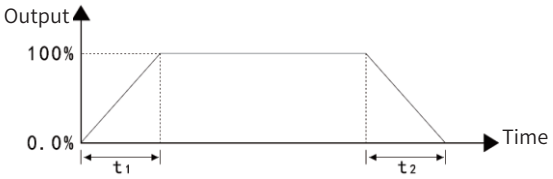
F-12	Current Analog Input Type	Range	0, 1，2	Factory Value	1	Attribute	Read-write

- Selection of the effective analog given signal source type of the regulator. 0:0~20mA; 1:4~20mA; 2: Comprehensive control of 4~20mA and 0~5V dual signals.
- Note: If integrated control of 4~20mA and 0~5V dual signals is selected, the AI1 input port will receive 4~20mA, and the AI2 input port will accept potentiometer input (0~5V). This configuration enables 4~20mA automatic input, with the potentiometer limited to 0~5V. The control output is shown in the figure.



F-13	Soft Start Time Setting	Range	0~120 seconds	Factory Value	2	Attribute	Read-write
F-14	Soft Shut-off Time Setting	Range	0~120 seconds	Factory Value	2	Attribute	Read-write

Soft start time is the time required for the regulator output to rise from 0% to 100% (see t1 in the figure below); soft shut-off time is the time required for the regulator output to drop from 100% to 0% (check t2 as below picture).



F-15	Output Upper Limit Setting Percentage	Range	0~100%	Factory Value	100	Attribute	Read-write
F-16	Output Lower Limit Setting Percentage	Range	0~100%	Factory Value	0	Attribute	Read-write
F-17	Proportional Coefficient	Range	0~200	Factory Value	80	Attribute	Read-write

The proportional gain is multiplied by the system error to generate the correction value. Increasing this parameter reduces system damping and accelerates the system’ s dynamic response. For a given load, if this parameter is excessively large, it will render the system unstable. The optimal setting is the maximum value just before the system begins to destabilize.

F-18	Integral Coefficient	Range	0~200	Factory Value	2	Attribute	Read-write

The integral gain is multiplied by the system error to generate the correction value. This correction value ensures zero steady-state error in the system. Increasing this parameter accelerates the system’ s recovery rate after a disturbance. If this parameter is excessively large, the system will tend to oscillate instead of recovering quickly.

F-19	Differential Coefficient	Range	0~200	Factory Value	0	Attribute	Read-write

The derivative gain is multiplied by the rate of error change to generate a correction value, which provides a damping effect. Optimal system performance is achieved through the best combination of the three PID parameters (proportional, integral, and derivative).

F-20	Feedback Signal Source	Range	0,1,2	Factory Value	0	Attribute	Read-write

0: Voltage signal feedback; 1: Current signal feedback; 2: Power signal feedback.

F-21	Limiter Signal Source	Range	0,1	Factory Value	0	Attribute	Read-write

0: Current; 1: Voltage

F-22	Limiting Percentage	Range	0~100%	Factory Value	100	Attribute	Read-write

Act as a limiter for an inner loop. For example, if P-21=1, P-22=50, and Vi=100%, then Vo=50% under the action of the limiter.

F-23	Control Mode	Range	0: Phase-shift closed loop; 1: Phase-shift open loop; 2: Zero-crossing trigger;	Factory Value	0	Attribute	Read-write

- 0:Phase-shift closed loop.Phase-shift triggering adjusts to minimize the error between the set value and output feedback value according to the PID regulation law. This parameter is used in conjunction with parameter P-20, and includes three control modes: (1) constant voltage, (2) constant current, and (3) constant power.
- (1): Constant Voltage Control: P-20=0, P-23=0. Maintains a constant output voltage by adjusting the error between the set value and output voltage feedback according to the PID regulation law, ensuring the output voltage approaches or equals the set value.
- (2) Constant Current Control: P-20=1, P-23=0. Maintains a constant output current; the load current is kept stable via load current feedback.
- (3) Constant Power Control: P-20=2, P-23=0. Maintains a constant output power. Voltage and current are detected, and multiplying these two values generates a power signal, which serves as the load’ s power feedback. The output power is kept constant through this power feedback.

F-25	Correction of the trigger Angle	Range	2000~10000	Factory Value	4000	Attribute	Read-write

The correction of the trigger Angle must be carried out in open-loop mode. Factory-adjusted already.

F-26	Zero-crossing trigger mode period selection	Range	0: Fixed cycle zero-crossing; 1: Variable period (resistive load)	Factory Value	0	Attribute	Read-write
F-27	AI1 high-end calibration	Range	50~150%	Factory Value	100	Attribute	Read-write

Perform high-end calibration on the 0~20mA/4~20mA signals input to the AI1 analog input port, ensuring 20mA corresponds to 100% input percentage.

F-29	AI2 high-end calibration	Range	50~150%	Factory Value	100	Attribute	Read-write

Perform high-end calibration on the 0~5V signals input to the AI2 analog input port, ensuring 5V corresponds to 100% input.

F-35 to F-37 are communication setting parameters, set according to specific communication protocols.

F-35	Communication address	Range	1~247	Factory Value	123	Attribute	Read-write
F-36	Baud rate	Range	0,1,2,3,4	Factory Value	2	Attribute	Read-write

Selection of communication baud rate: 0:2400, 1:4800, 2:9600, 3:19200, 4:38400.

F-37	Data format	Range	0:8N2; 1:8E1; 2:8O1;	Factory Value	1	Attribute	Read-write

Data format: 0: 8 data bits, 2 stop bits, no parity;
1: 8 data bits, 1 stop bit, even parity;
2: 8 data bits, 1 stop bit, odd parity;

F-48	Programmable relay output	Range	0,1	Factory Value	0	Attribute	Read-write

P-49 to P-55 are protection function parameters. Adjusting each of these function setting parameters allows modification of the configuration for each protection function of the regulator, ensuring alignment with the intended operational requirements.

F-49	Previous fault query	Range	0~100	Factory Value	0	Attribute	Read-write

Query the type of the most recent fault.

F-50	Overcurrent protection enable	Range	0: Disable, 1: Enable	Factory Value	1	Attribute	Read-write
F-51	Phase-failure protection enable	Range	0: Disable, 1: Enable	Factory Value	1	Attribute	Read-write
F-52	Load unbalance protection enable	Range	-	Factory Value	1	Attribute	Read-write
F-53	Load unbalance threshold	Range	1~70%	Factory Value	70	Attribute	Read-write

Set the load unbalance protection threshold current, which is a percentage of the rated current. Note: Formula for load unbalance protection threshold current: Input percentage (F-01) * Rated current * Unbalance protection threshold percentage (F-53) = Threshold current.

F-54	Thyristor overheat protection enable	Range	0: Disable, 1: Enable	Factory Value	1	Attribute	Read-write

F-56 to F-59 are rated parameter settings of the regulator.

F-56	Rated voltage	Range	0~1000V	Factory Value	380	Attribute	Read-write
F-57	Rated current	Range	0~6000A	Factory Value	-	Attribute	Read-write

The factory value is consistent with the rated current on the nameplate.

F-58	Rated frequency	Range	0: 50Hz, 1: 60Hz, 2: Automatic	Factory Value	0	Attribute	Read-write
F-59	Version number	Range	-	Factory Value	-	Attribute	-

8. Abnormal Code Description

The power regulator has multiple fault protection functions. When a fault occurs, the regulator will automatically provide protection and display the corresponding fault code in the display window. Users can determine the fault range based on the displayed fault code and take corresponding fault handling measures.

Fault Phenomenon	Fault Name	Fault Cause and Handling Plan
No display	Control board has no power	1, Check the control power supply; 2, Check the connection between the control board and the display board.
Output out of control	Output cannot be controlled	1, Check whether the parameter settings are correct; 2, Check whether the thyristor module is broken down.
Output unstable	Output cannot be stabilized	1, Check the PID parameter settings.
E--r1	Internal System Fault	Replace the control panel.
E--r2	Main Power Supply Fault	1. Check the main circuit power supply; 2. Check the thyristors.
E--r3	Load Overcurrent Fault	Excessive load or short circuit.
E--r4	Load Open-Circuit Fault	1. Check the load open-circuit threshold setting; 2. Check if the load is open-circuited.
E--r5	Thyristor Overheating Fault	1. Check if the power grid is overloaded; 2. Check if the cooling fan and air duct are normal; 3. Check if the ambient temperature is excessively high.
E--r6	Power frequency fault	Check the quality of the power supply grid.

9. Specification and Model Table

HGW 7 — □ — □ — □□□ — □

Specification	Code
Three-phase	4

Main power supply	Code
110~220V	2
380~440V	4
480~600V	8

Current	Code	Current	Code	Current	Code	Current	Code
30A	030	80A	080	175A	175	400A	400
40A	040	90A	090	200A	200	450A	450
50A	050	100A	100	250A	250	500A	500
60A	060	125A	125	300A	300	600A	600
75A	075	150A	150	350A	350	800A	800

Control mode setting	Code
Zero-position adjustment	Z
Open-loop phase control	P
Constant current control	C
Constant voltage control	V
Constant power control	CV

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Specification and Model Table

Specification and Model:	Current	Load Power (KW)		Appearance Dimensions (mm)			Fixed Dimensions (mm)		Weight (kg)	Screw and Locking Torque:		Cooling Method	Illustration
		220V	380V	Length	Width	Height	Length	Width					
HGW7-4-4-030-P	30A	9.5	16.5	290	134	224	275	104	6	M8	40kgfcm	forced air cooling	Figure 1
HGW7-4-4-040-P	40A	12.5	20	290	134	224	275	104	6	M8	40kgfcm	forced air cooling	
HGW7-4-4-050-P	50A	15.5	27	290	134	224	275	104	6	M8	50kgfcm	forced air cooling	
HGW7-4-4-060-P	60A	19	33	290	134	224	275	104	6	M8	50kgfcm	forced air cooling	
HGW7-4-4-075-P	75A	23.5	41	290	134	224	275	104	6	M8	70kgfcm	forced air cooling	
HGW7-4-4-080-P	80A	25.5	44	290	134	224	275	104	6	M8	70kgfcm	forced air cooling	
HGW7-4-4-090-P	90A	28.5	49	335	164	213	316	104	10	M8	85kgfcm	forced air cooling	Figure 2
HGW7-4-4-100-P	100A	32	55	335	164	213	316	104	10	M8	85kgfcm	forced air cooling	
HGW7-4-4-125-P	125A	40	68.5	335	164	213	316	104	10	M8	95kgfcm	forced air cooling	
HGW7-4-4-150-P	150A	45	75	335	164	213	316	104	11	M8	170kgfcm	forced air cooling	
HGW7-4-4-175-P	175A	53	88	335	164	213	316	104	11	M8	200kgfcm	forced air cooling	
HGW7-4-4-200-P	200A	58	100	420	244	236	401	160	13	M10	220kgfcm	forced air cooling	Figure 3
HGW7-4-4-250-P	250A	73	125	420	244	236	401	160	13	M10	220kgfcm	forced air cooling	
HGW7-4-4-300-P	300A	87	150	435	263	248	416	160	15	M10	250kgfcm	forced air cooling	Figure 4
HGW7-4-4-350-P	350A	100	177	435	263	248	416	160	18	M10	250kgfcm	forced air cooling	
HGW7-4-4-400-P	400A	115	200	435	263	290	416	160	22	M10	250kgfcm	forced air cooling	Figure 5
HGW7-4-4-450-P	450A	130	220	435	263	290	416	160	25	M10	250kgfcm	forced air cooling	
HGW7-4-4-500-P	500A	150	240	435	263	290	416	160	25	M10	250kgfcm	forced air cooling	
HGW7-4-4-600-P	600A	175	300	525	388	330	495*3	140*2	37	M12	300kgfcm	forced air cooling	Figure 6
HGW7-4-4-800-P	800A	235	410	525	388	330	495*3	140*2	37	M12	300kgfcm	forced air cooling	

* The above parameters are for reference only. The actual parameters are subject to the material.

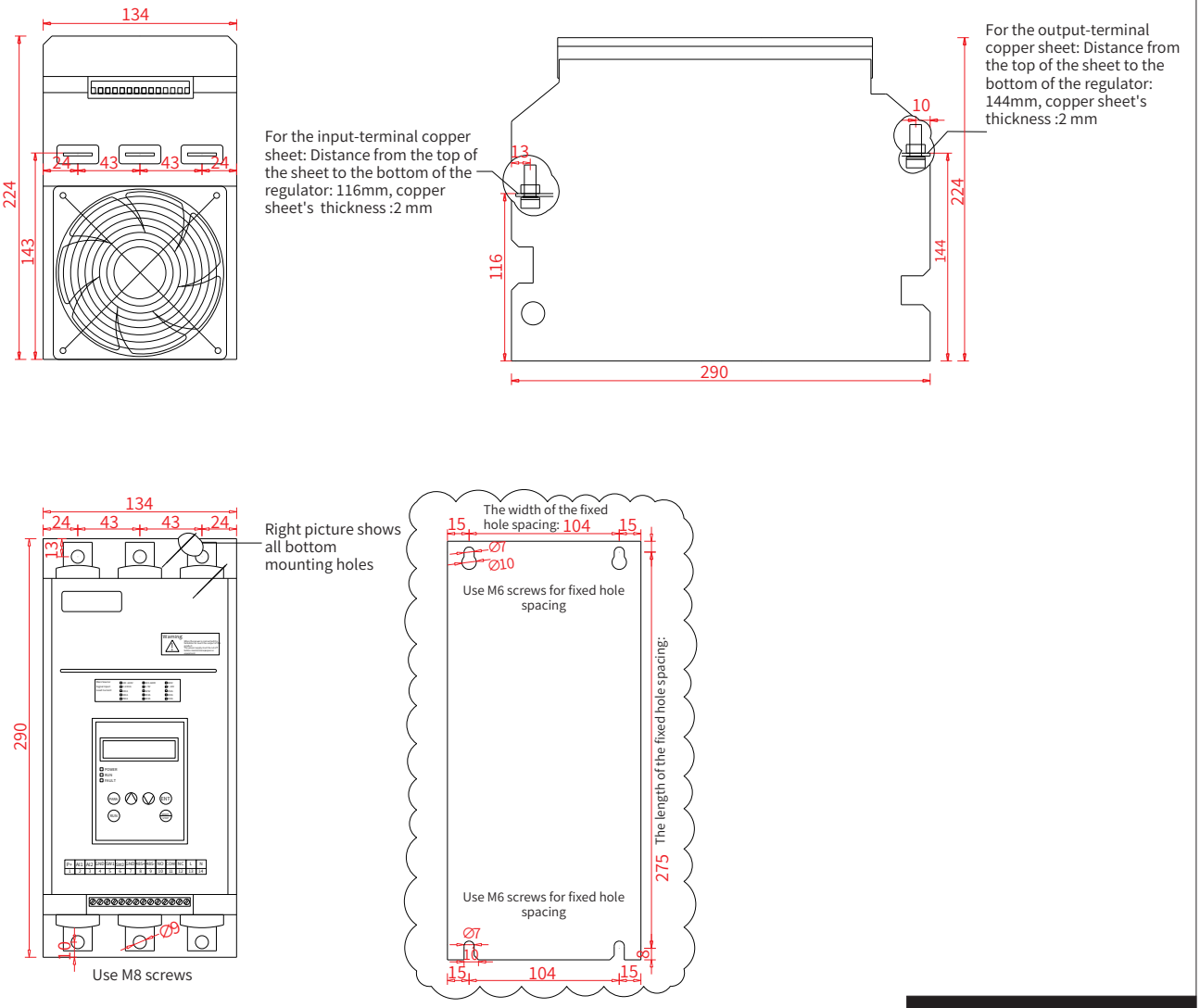

Figure 1
HGW7-4-4-030-P
HGW7-4-4-040-P
HGW7-4-4-050-P
HGW7-4-4-060-P
HGW7-4-4-075-P
HGW7-4-4-080-P

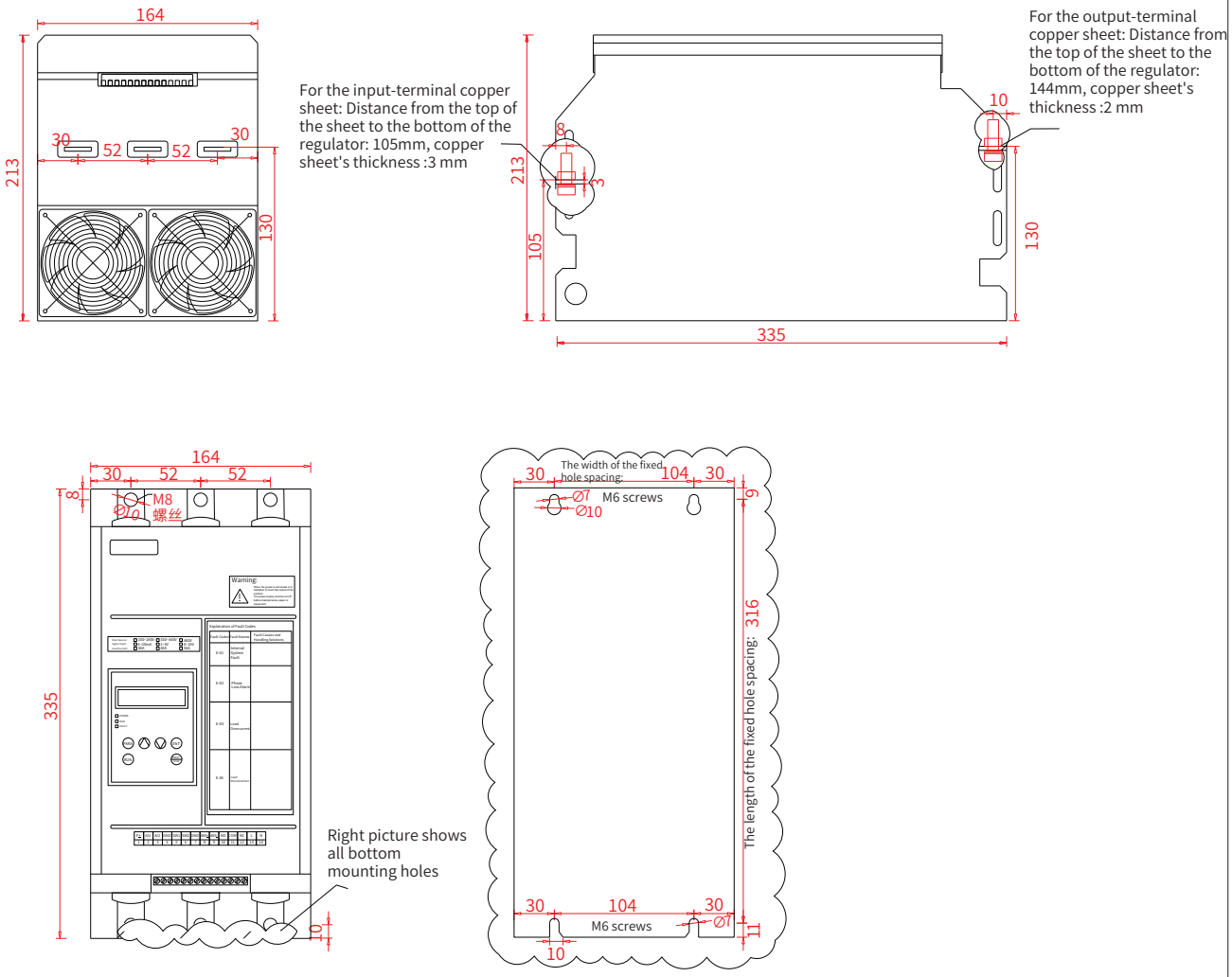

Figure 2
HGW7-4-4-090-P
HGW7-4-4-100-P
HGW7-4-4-125-P
HGW7-4-4-150-P
HGW7-4-4-175-P

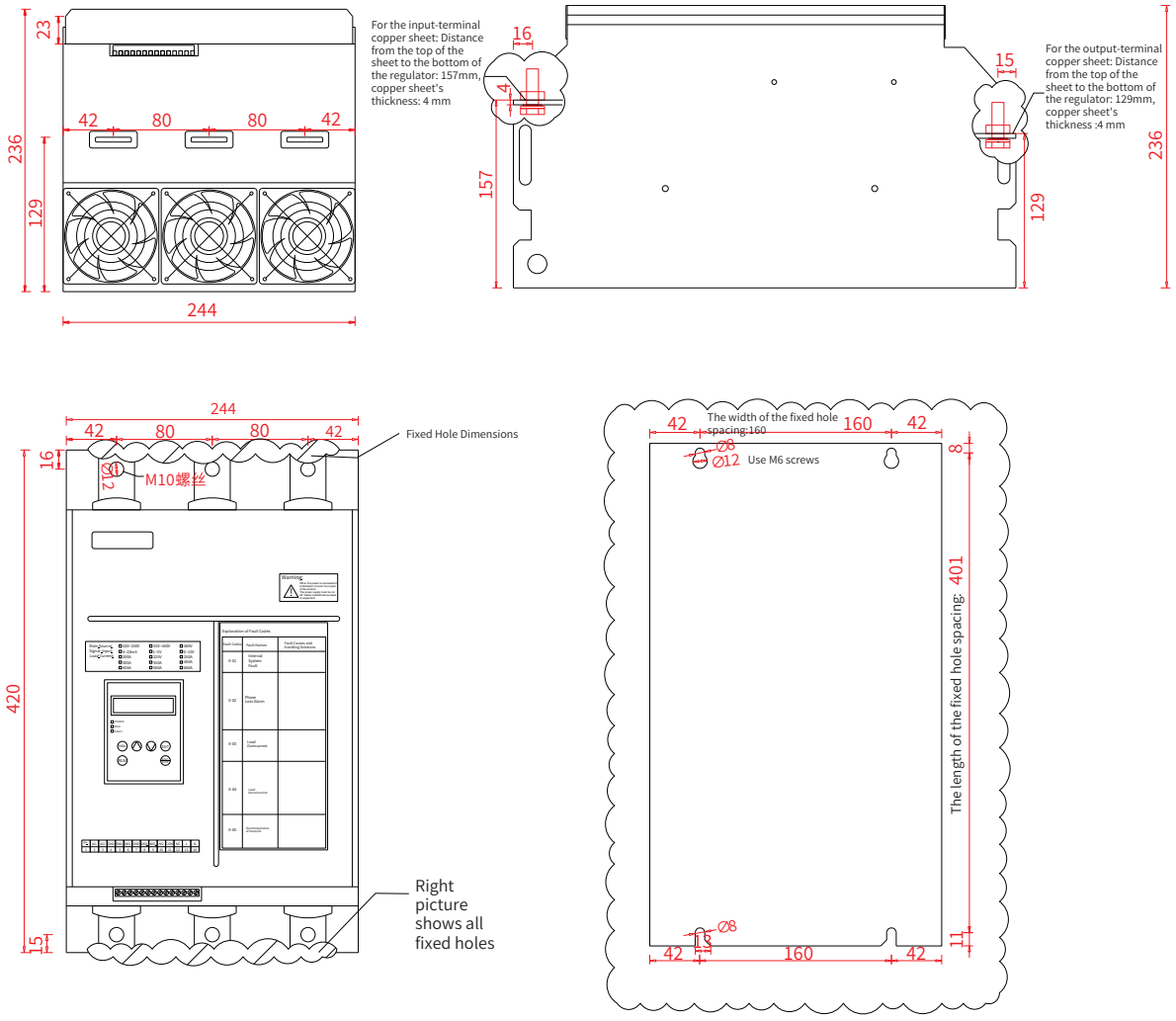

Figure 3

HGW7-4-4-200-P

HGW7-4-4-250-P

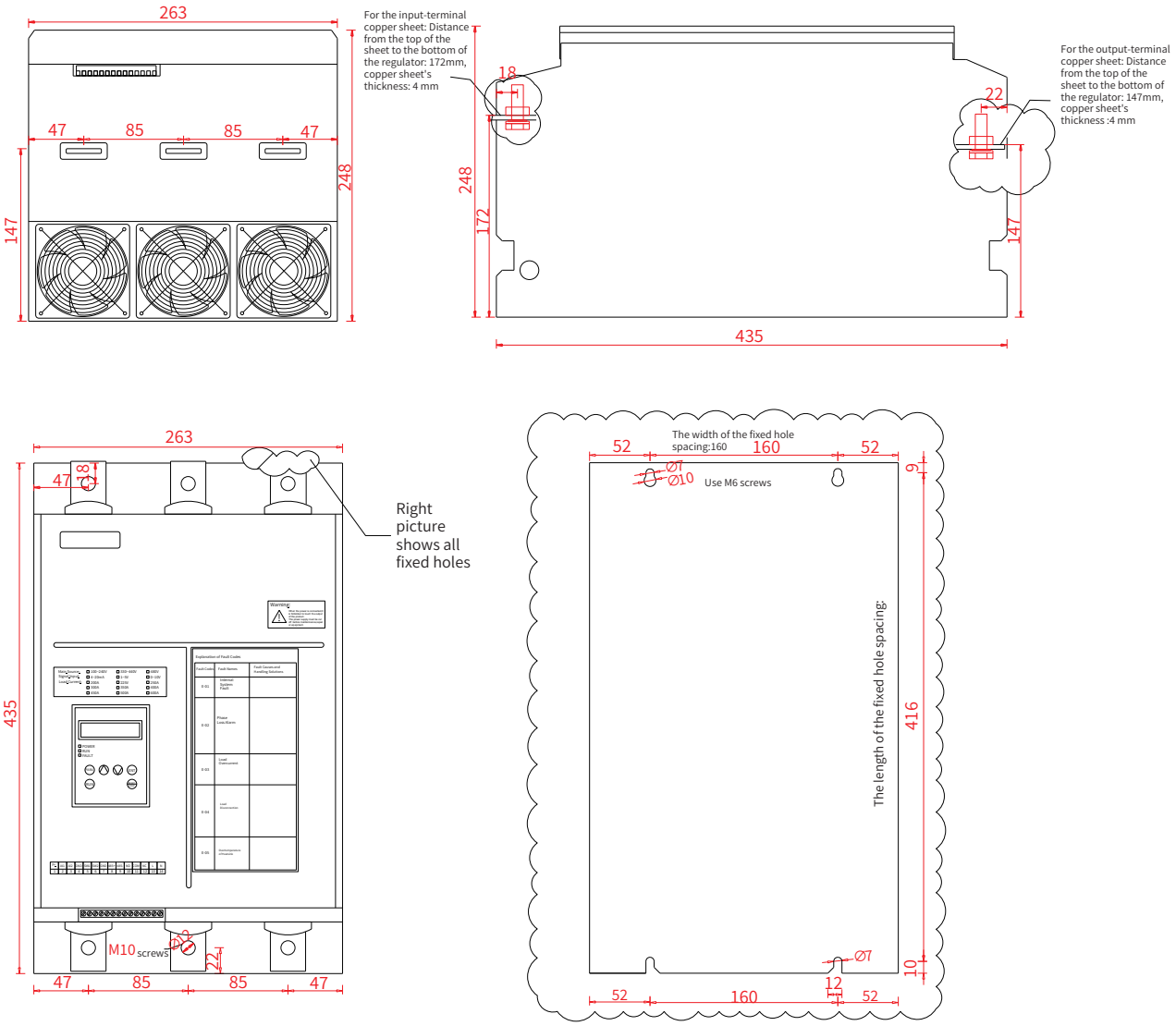

Figure 4

HGW7-4-4-300-P

HGW7-4-4-350-P

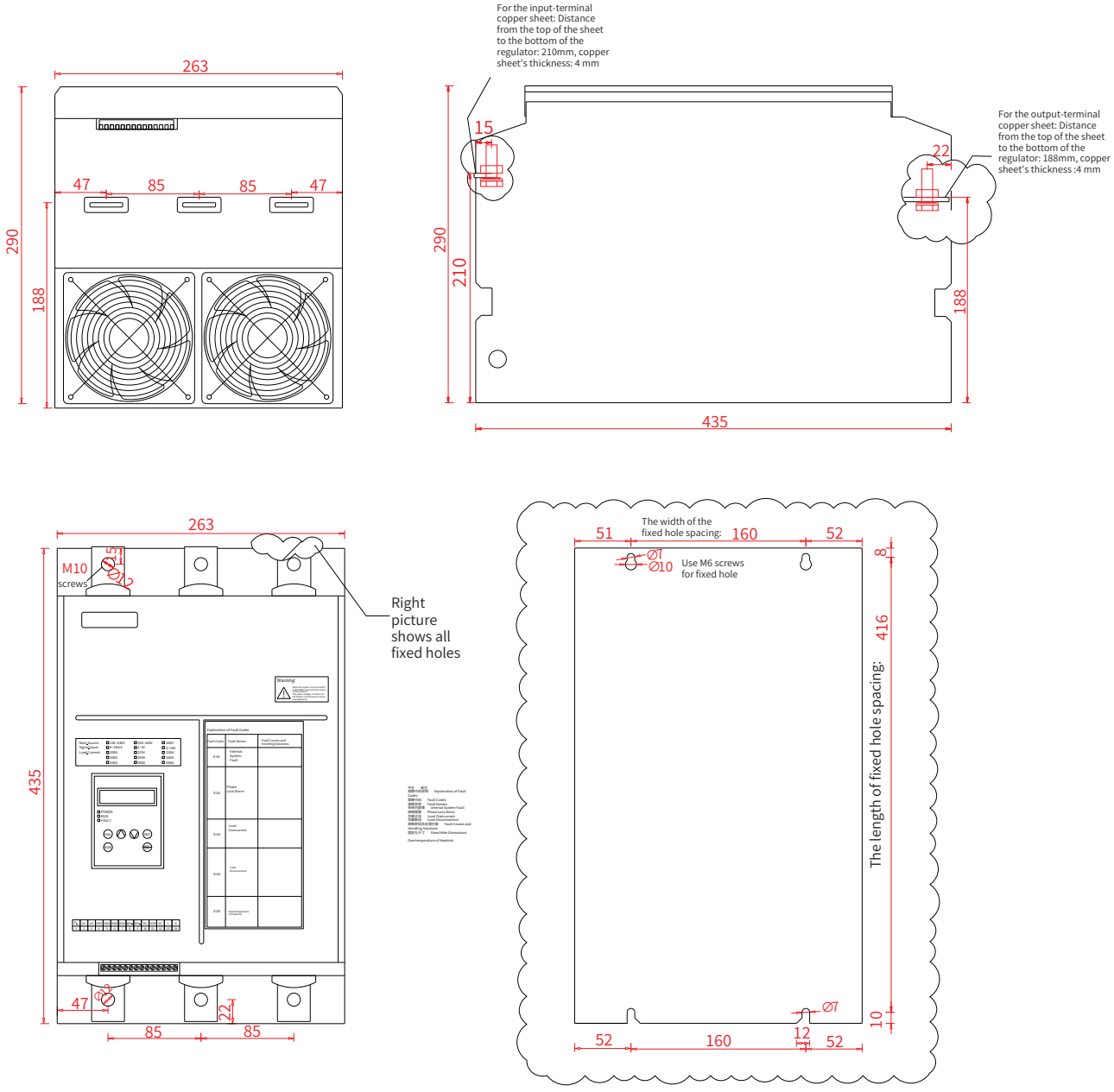

Figure 5

HGW7-4-4-400-P

HGW7-4-4-450-P

HGW7-4-4-500-P

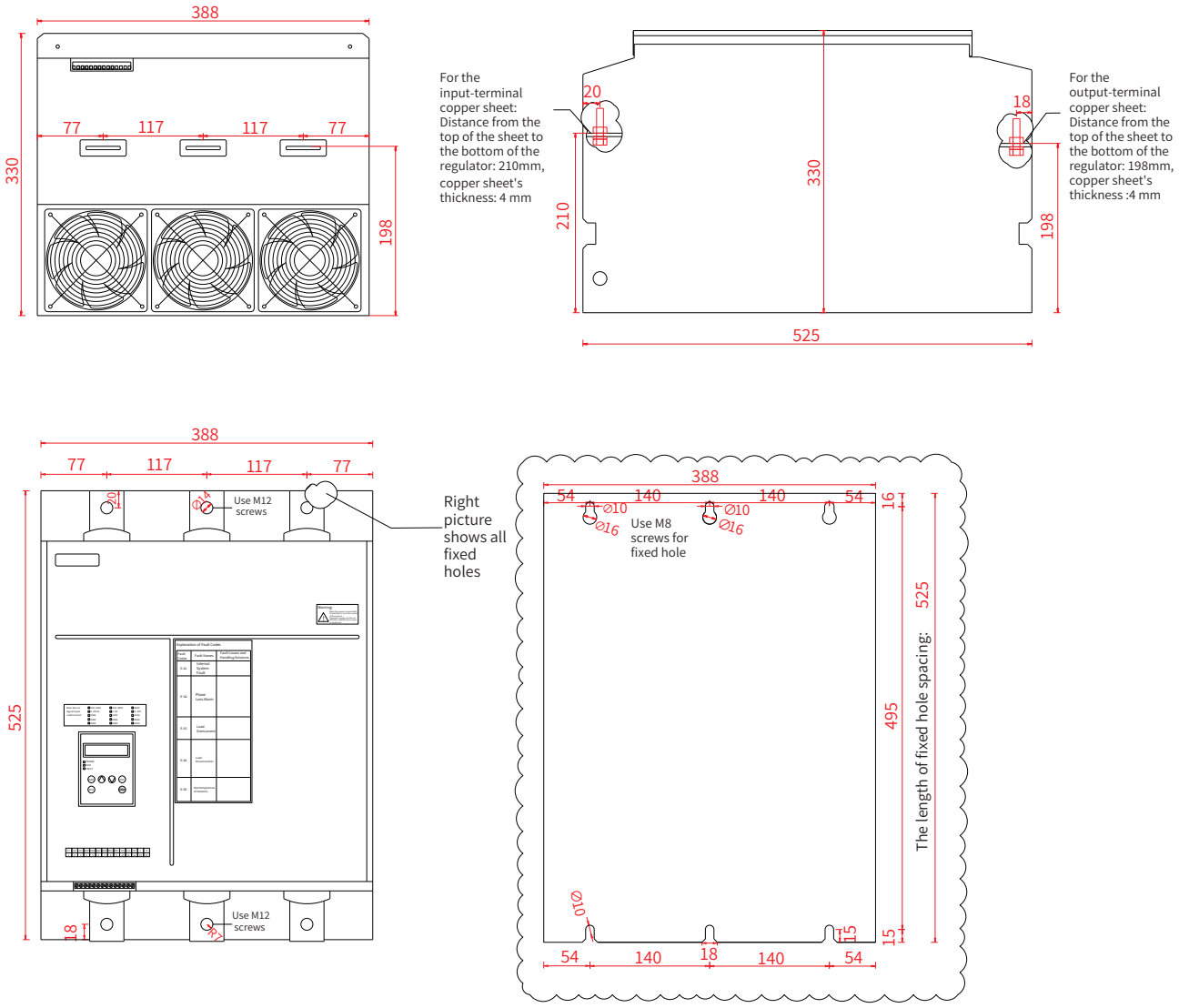

Figure 6

HGW7-4-4-600-P

HGW7-4-4-800-P

Thank you for purchasing the HGW7 series SCR power regulator. This manual mainly covers the installation, wiring procedures, and relevant precautions of the product. Before operation, please read this manual carefully to fully understand the product' s usage methods. Please keep this instruction manual properly for future reference.