

☆Preface☆

Thank you very much for choosing the L5000 series UV LED power system produced by Shenzhen UWET Electric Technologies Co., Ltd. The power supply integrates constant current output, stepless dimming, digital management, human-computer interface, communication interaction, and light board management, providing intelligent and integrated solutions for UV LED application.

This is the manual for the L5000S series digital power system for program version 3.5 or above. It will provide you with detailed L5000S series LED power installation, wiring, functional parameters, daily maintenance, troubleshooting details and other precautions.

To properly use the L5000S Series UV LED Power Supply (hereinafter referred to "LED Power Supply"), maximize the excellent performance of the product and ensure the safety of users and equipment, please read this manual in detail before using the product. Incorrect use may cause abnormal product operation, failure, reduce the service life, resulting in equipment damage, personal casualties and other accidents!

This manual is not sent with LED power supply, please log in to our official website to download. Due to continuous improvement and upgrade of the products, if there is a change of the information provided by the company, please forgive us for no further notice.

L5000S Series UV LED Power Supply Manual

Version V 1.5

Revised by date of November, 2022

Content

☆Preface☆	1
Content	2
Chapter 1. Product Information	5
1.1 Product Introduction	5
1.2 Description of the power supply model	7
1.3 Available Channel Specification:	9
1.4 Technical indicators and specifications of the products	9
1.5 Installation dimensions	11
Chapter 2 Wiring Connection	15
2.1 Notes for wiring	15
2.2 LED power supply wiring	16
2.2.1 Basic wiring	16
2.2.2 Led Output Wiring	18
2.2.3 Control board wiring and terminal wiring	21
Chapter 3. The Operation of the LED Power Supply	25
3.1 Introduction to the basic functions of the operation panel	25
3.2 Picture analysis of the operation panel	28

3.3 Indicator Light Description in Operation Panel -----	37
Chapter 4 Function Parameters -----	38
4.1 Basic parameters -----	38
4.1.1 Basic power supply control -----	38
4.1.2 Digital terminal function -----	42
4.1.3 Analog terminal function -----	45
4.1.4 temperature terminal function -----	48
4.1.5 MODBUS communication setting -----	50
4.1.6 panel function -----	53
4.1.7 Factory Setting Reset -----	54
4.2 grouping management -----	54
4.2.1 grouping channel choosing -----	55
4.2.2 Group Power Setting -----	56
4.2.3 Query the current group information -----	56
4.2.4 Clearing Group Information -----	57
4.3 Channel management -----	57
4.4 Fault management -----	59
4.5 Extension Management -----	61
Chapter 5 Communication Protocol -----	64

5.1 Communication Protocol Description -----	64
5.2 read & write address file -----	64
Address for reading power status -----	64
5.2.1 D0 group base state -----	64
5.2.2 Power Control Write Address -----	84
5.2.3 Quick communication function -----	92
5.3 Example communication program -----	98
5.3.1 Simense S7-200 SMART Series PLC Communication routines -----	98
5.3.2 Mitsubishi FX3U Series PLC communication program -	98
5.3.3 Vellon touch screen communication setting method -	98
5.3.4 Communication setting method of kunlun on-state touch screen -----	98
Chapter 6 Quick application -----	99
6.1 Fault code description -----	99
6.1.1 Abnormal code table of main power supply -----	100
6.1.2 Abnormal code table of channels -----	101
Chapter 8 Maintenance and Care -----	103
7.1 Daily Inspection and Maintenance -----	104

7.2 Inspection and replacement of vulnerable parts -----	105
7.2.1 Filter Capacitor -----	105
7.2.2 Cooling Fan -----	105
7.3 Storage -----	106
7.4 Warranty -----	107

Chapter 1. Product Information

1.1 Product Introduction

L5000S series LED power supply is a high-tech product developed for the drive of U VLED lights, with high-performance MCU as the control core, high-precision constant current control algorithm to ensure the stable output of energy, to create excellent curing equipment for customers. This product is widely used in coating, printing, wood coating, PCB, military medical treatment and other more than 20 fields.

L5000S series power supply is an upgrade of L3000 series products, L5000S adopts the channel box and the main power box separation design, the channel board can be assemble or disassemble , greatly improves the convenience of product installation and maintenance. Its main features are:

1) Optional channel board power. The channel board offers both 550W and 850W power options. Each channel output current is independently adjustable, and has a calibration register with one-thousandth output accuracy that can balance the bead difference by setting the calibration register. A logical main driver can support up to 48 channel controls, with a total power of 36KW.

2)The communication speed is fast. Isolation CAN bus communication between Main control driver and channel module, Control command, arrive in milliseconds . The main control driver is standard equipped with RS485 communication interface, supporting MODBUS RTU protocol, optional extended communication card, and supporting MODBUS TCP protocol based on Ethernet communication.

3)Multiple protection functions. The main power supply module has missing phase protection, under voltage protection, over current protection, etc. The channel module itself supports over voltage protection, under voltage protection, over temperature protection, self-inspection protection, etc. In the case of optional current detection extension card, the LED substrate can be diagnosed, and the short circuit and open circuit each LED bead can be accurately detected (Need to buy separately).

4)Flexible control mode. Support for synchronization, asynchronous, grouping operation mode, visual grouping channel selection, grouping information query, can support up to 16 groups.

5)Abundant external terminal function. One main power supply supports 4 digital input, 4 digital output, 2 analog input, 2 NTC temperature input and 1 analog output.

1.2 Description of the power supply model

DC POWER SUPPLY	
MODEL:	L5000-4TB150
POWER INPUT:	3PH AC350-440V 50/60HZ
INPUT CURRENT:	MAX 25A
OUTPUT:	DC 350-420V
EFFICIENCY:	98%
POWER FACTOR:	0.93
COOLING MODE	Forced-Air
AMBIENT TEMP:	<45 °C
AMBIENT HUMIDITY:	<95%
IP GRADE:	IP20
<div style="border: 1px solid black; height: 20px; width: 100%;"></div>	
SHENZHEN UWET ELECTRIC TECHNOLOGIES CO.,LTD MADE IN CHINA	

Figure 1.1 Main Power Label

The general format of the main power supply model is prefix + power, the following three main power supply models are commonly used:

Main Power Model	Power
L5000-4TB075	7.5KW
L5000-4TB150	15KW
L5000-4TB170	17KW

MODEL:	L5000S-15
SPEC:	LT-198V-05A-15
POWER INPUT:	DC350V-420V
INPUT CURRENT:	MAX 32A
OUTPUT VOLTAGE:	DC160V-198V
OUTPUT CURRENT:	DC 1-5A
CHANNELS:	15
CHANNEL POWER:	MAX 850W
CHANNEL SORT:	1-16
EFFICIENCY:	96%
CHARACTER:	Constant Current
RESPONSE TIME:	<300ms
COOLING MODE:	Forced-Air
AMBIENT TEMP:	<45 °C
AMBIENT HUMIDITY:	<95%
IP GRADE:	IP20
<div style="border: 1px solid black; width: 100px; height: 30px; margin: 0 auto;"></div>	
SHENZHEN UWET ELECTRIC TECHNOLOGIES CO.,LTD MADE IN CHINA	

Figure 1.2 Channel Chassis Label

The channel box needs to be used together with the main power supply connecting through the CAN bus. The following two types of channel boxes are commonly used:

Channel Chassis Model	Channel Chassis Number
L5000S-15	Up to 15 channels installed
L5000S-20	Up to 20 channels installed

In addition to 15- and 20-channel split units (main power supply+channel chassis separately into two chassis), we also offer a wide range of all-in-one units (main power supply+channel chassis separately in one chassis) for you to choose from :

All-In-One Unit	Channel Number	Max. Power
L5000S-08-YT	Up to 8 channels installed	Single phase 3.6KW Three phase 4.5KW

L5000S-10-YT	Up to 10 channels installed	7.5KW
L5000S-15-YT	Up to 15 channels installed	7.5KW

1.3 Available Channel Specification:

Rated Voltage	550W Output Current	850W Output Current	Voltage Range
48V	10A	16A	36V-48V
87V	7A	10A	65V-87V
110V	5A	7.5A	85V-110V
135V	4A	6.5A	115V-145V
180V	3A	5A	145V-200V
240V	2.2	4	200V-240V

The above table shows the common channel board specifications, if your LED luminaire voltage is not listed in the above table, please contact our sales representative.

1.4 Technical indicators and specifications of the products

Input Voltage		3PH AC 360V-440V 50/60HZ	1PH AC 180V-250V 50/60HZ
output	Voltage	Direct Current (determined according to the model)	
	Current	Direct Current (determined according to the model)	
Control Mode		Constant Current Control	
Control Feature	Current setting resolution ratio	0.1%	
	Current Limit	Range within power tolerance	
	Voltage Limit	Range within power tolerance	
	Power	Determine according to the model	

	Limit	
	Working time record	Read LED working time in operation
	RS485 communication	Standard configuration of RS485 communication interface, support start-stop control, current given, parameter reading, etc
	Running Function	External contact terminal controls machine start / stop
	Faulty Analysis	fault record query and the trouble shooting analysis function
Display	Operation State	The output voltage, output current, output power can be monitored
	Parameter Setting	Relevant parameter can be set according to the actual requirements
Protection / Alarm function		Overcurrent, overvoltage, undervoltage, overheat, short circuit, etc
Environment	Ambient Temperature	-10 C to + 50 C (not frozen)
	Surrounding Humidity	Below 90% (no frost)
	Surrounding Environment	Indoor (no direct sunlight, no corrosion, flammable gas, no oil mist, dust, etc.)
	Altitude	Less than 1,000 m
Structure	Levels of protection	IP20
	Cooling method	Independent air duct design for forced air cooling

1.5 Installation dimensions

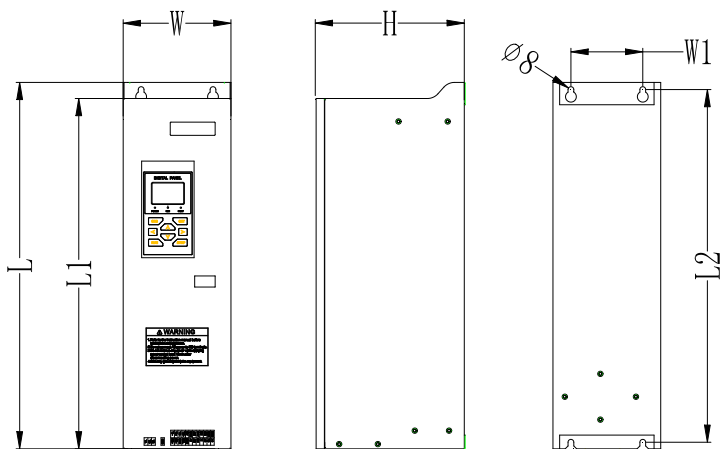


Figure 1.3 Main Power Supply Chassis

L5000 main power supply chassis size							
Model	L	W	H	W1	L2	L1	Screws
L5000-4TB075	512	135	207	90	493	489.5	M6
L5000-4TB150	512	150	207	100	493	489.5	M6
L5000-4TB170	512	150	207	100	493	489.5	M6

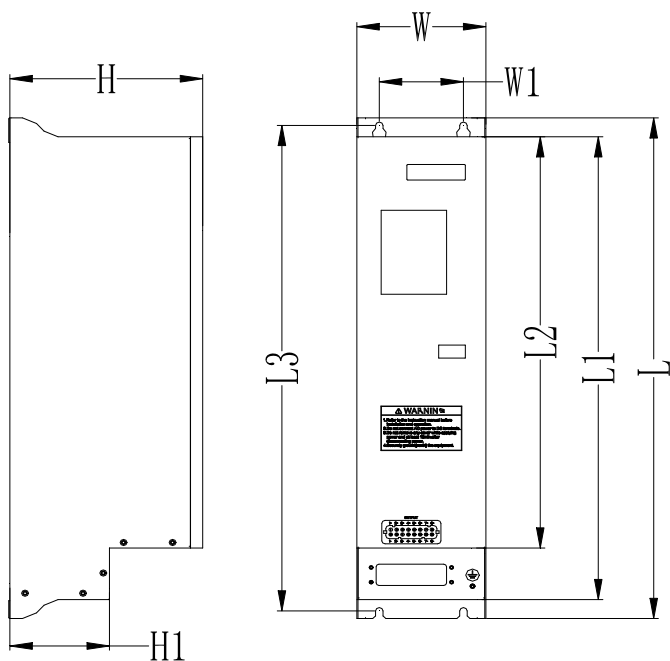


Figure 1.4 Channel Chassis Size

L5000 Channel Chassis Size									
Model	L	W	H	W1	L3	L2	L1	H1	Screw
L5000S-15	596	196	191	141	576	490	551	107	M6
L5000S-20	596	254	191	200	576	490	551	107	M6

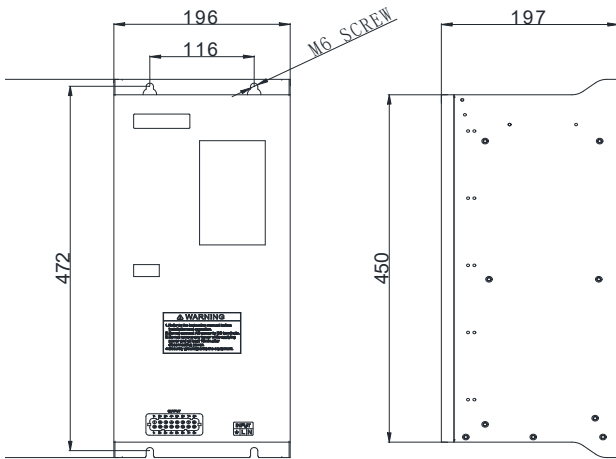


Figure 1.5 L5000S 1 phase、3 phase 8 channel All-in-One power supply size

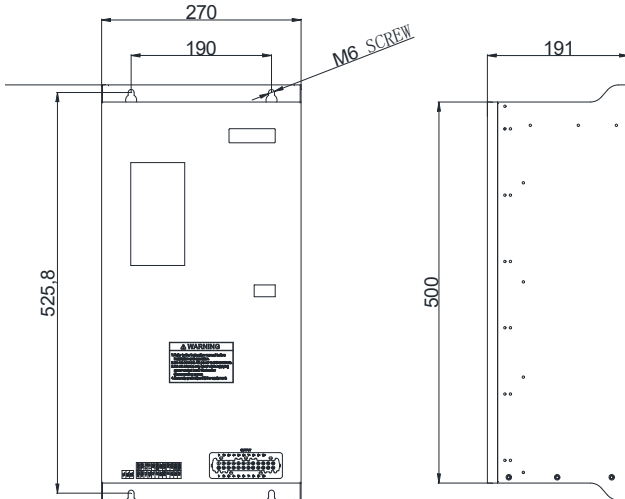


Figure 1.6 L5000S 3 phase 10 channel All-in-One power supply size

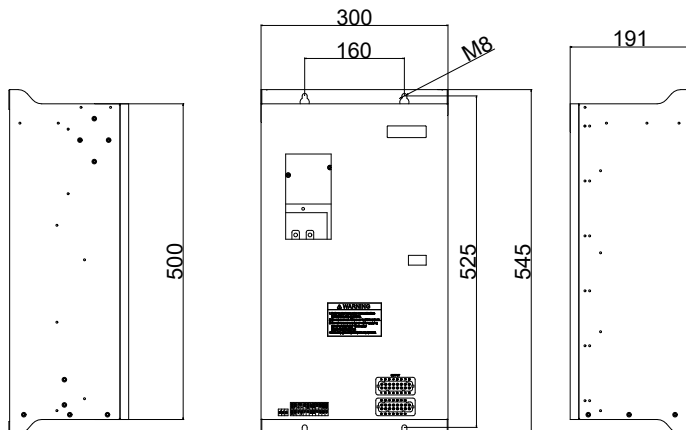


Figure 1.7 L5000S 3 Phase15 channels All-in-One power supply size

Chapter 2 Wiring Connection

2.1 Notes for wiring

- 1) Make sure that there is a circuit breaker connected between the LED power supply and its input power supply to prevent the accident from expanding when the LED power supply fails
- 2) To reduce electromagnetic interference, please connect the coil of electromagnetic contactors, relay and other devices in the circuit around the LED power supply to install the surge absorber.
- 3) For the wiring of the analog signal, please use the shielded wire above 0.3 mm². The shielding layer is connected to the ground terminal of the LED power supply (keep the single end of the shielding layer grounded), and the wiring length is less than 30 m.
- 4) Relay input and output circuit wiring shall be selected with a stranded wire or shielded wire above 0.75 mm².
- 5) The main circuit wiring must conform to the power level of the power supply.

Recommended specifications for electrical appliances as shown in the following below:

LED Power Level	Input Voltage (V)	Input Current (A)	wire (major loop) (mm ²)	Air breaker (A)	electromagnetic contactor (A)
3.6KW	220	15	4	25	20
7.5KW	400	13	4	20	20
15KW	400	26	6	40	40

2.2 LED power supply wiring

2.2.1 Basic wiring

(1) Basic wiring terminal table

Type	Terminals	Terminal Instruction	Remarks
Input	R、S、T	Three-phase 400V power supply input	Input power supply
	L、N	Single-phase 220V power supply input	
DC Bus	DC+,DC-	Main chassis DC bus output or Channel chassis DC bus input	Power the channel box
Control Signal	CNH,CNL, FAN+,FAN-	CNH, CNL for the C AN bus communication line, FAN +, FAN-for the channel box fan power supply line	Control signal of the main power supply to the channel box
Grounding	E	Earth	Ground Terminal

(2) Split Machine (Main Power Supply + Channel Chassis Separately into two Chassis)

When using the main power supply separated from the channel chassis, you need to connect the DC bus cable, communication cable and fan power supply cable to the main power box and the channel box. Line diameter can be shown in the following table:

Cable type	Current	Line Diameter	Remarks
DC bus	$I \approx \frac{\text{channel total power}}{400V}$	4mm ² Or 6mm ²	Calculated by the actual power level
Communication cable	≤0.05A	≥0.5 mm ²	Double air pair with shielding layer
Fan power	≤2A	≥0.5 mm ²	Recommended 1 mm ² for distance longer

supply		than 20M
--------	--	----------

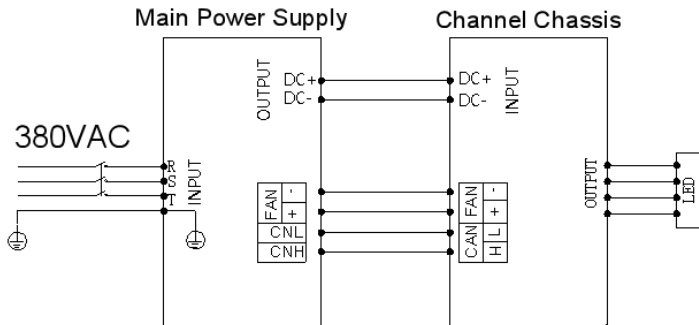


Figure 2.1 Electrical diagram of split power supply wiring

(3) 8-channel all-in-one machine wiring

220V Single-phase 8-channel all-in-one machine built-in 3.6KW DC bus module, can support up to 8 channels , but the total power can not exceed 3.6KW. When the 850W constant current module is selected, 4 channels can be installed, the maximum power of each channel is 850W. When 5 channels, the maximum power of each channel is 720W.

In addition, the 8-channel all-in-one machine also has a 380V three-phase input version, with a maximum power of 4.5KW, and the same wiring with the 10-channel all-in-one machine

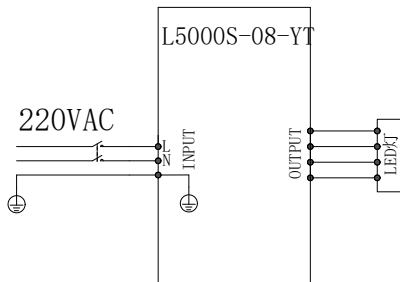


Figure 2.2 8 channels all-in-one machine wiring

(4) Three-phase 8 channel (4.5KW), three-phase 10 channel (7.5KW) all-in-one machine wiring

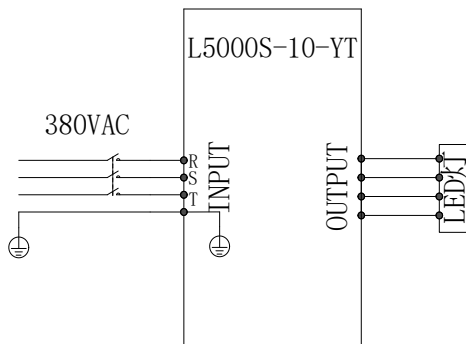


Figure 2.3 three-phase all-in-one machine wiring

The three-phase 8-channel all-in-one machine has a built-in 4.5KW DC bus module, which can support up to 8-channel output, and can install 850W or 550W constant current modules, with a total power of no more than 4.5 KW.

The three-phase 10-channel all-in-one machine has built-in a 7.5KW DC bus module, which can support up to 10-channel output, and can install 850W or 550W constant current modules, with a total power of no more than 7.5 KW.

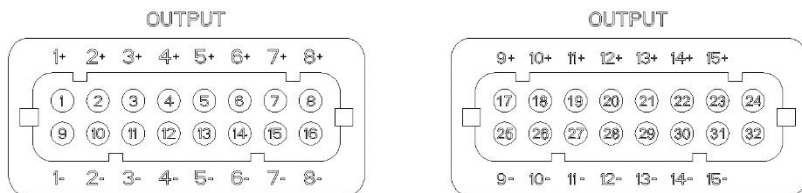
2.2.2 Led Output Wiring

LED driver adopts aviation plug output, and wiring please refer to wire printing. Generally, the output of each channel is represented by number +/- . For example, "V 1 +" indicates the positive pole of channel 1 output, and "V 5-" indicates the negative electrode of channel 5 output. The following figure is the LED output terminal wire mark of the 12-channel box, and the pin number and definition refer to the following table. Other Chassis is similar.

Figure 2.4 12 channel LED output terminal diagram

Aviation Plug number	Silk Screen	Terminal Function	Aviation Plug number	Silk Screen	Terminal Function
1	1+	Channel 1+	13	1-	Channel 1-
2	2+	Channel 2+	14	2-	Channel 2-
3	3+	Channel 3+	15	3-	Channel 3-
4	4+	Channel 4+	16	4-	Channel 4-
5	5+	Channel 5+	17	5-	Channel 5-
6	6+	Channel 6+	18	6-	Channel 6-
7	7+	Channel 7+	19	7-	Channel 7-
8	8+	Channel 8+	20	8-	Channel 8-
9	9+	Channel 9+	21	9-	Channel 9-
10	10+	Channel 10+	22	10-	Channel 10-
11	11+	Channel 11+	23	11-	Channel 11-
12	12+	Channel 12+	24	12-	Channel 12-

The L5000S-15 channel chassis uses two 16-pin terminals, as shown below



Fugirue 2.5 Schematic diagram of L ED output terminal of channel box

Aviation Plug number	Silk screen	terminal function	Aviation Plug number	Silk screen	terminal function
1	1+	Channel 1+	9	1-	Channel 1-
2	2+	Channel 2+	10	2-	Channel 2-
3	3+	Channel 3+	11	3-	Channel 3-
4	4+	Channel 4+	12	4-	Channel 4-
5	5+	Channel 5+	13	5-	Channel 5-
6	6+	Channel 6+	14	6-	Channel 6-
7	7+	Channel 7+	15	7-	Channel 7-
8	8+	Channel 8+	16	8-	Channel 8-
17	9+	Channel 9+	25	9-	Channel 9-
18	10+	Channel 10+	26	10-	Channel 10-
19	11+	Channel 11+	27	11-	Channel 11-
20	12+	Channel 12+	28	12-	Channel 12-
21	13+	Channel 13+	29	13-	Channel 13-
22	14+	Channel 14+	30	14-	Channel 14-
23	15+	Channel 15+	31	15-	Channel 15-

2.2.3 Control board wiring and terminal wiring

The L 5000S series power supply has rich external I O terminal functions, and the main functions are:

The 4-channel digital input terminal, X1, X2, X3, X4

The 4-channel digital output terminal, the relay (TA, TB, TC), OC1, OC2, OC3

R S485 Communication Terminal, RS +, RS-

2-Channel temperature detection terminal, T +, T1-, T2-

2 Through channel analog quantity input terminal, AI1, AI2

1 Channel analog volume output terminal AO1

Control terminal, CNH, CNL (some machines are labeled as C AN +, CAN-), FAN +, FAN-

FAN	+	T1-	10V	GND	AO1	24V	CM1	OC1	OC2	OC3	X4	TC	TB	TA
	-	T2-												
CNL		RS-			AI2									
CNH		RS+												

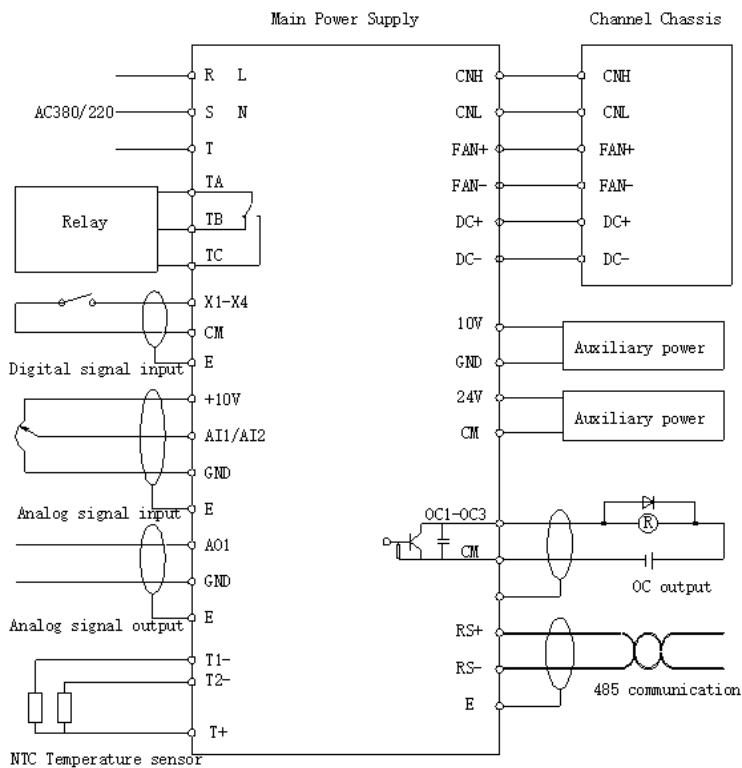
Figure 2.6: Screen printing of control board terminal

Table 2-4 Function description of LED power control board terminal

Terminal Type	Terminal Symbol	Terminal Function	Remarks
Digital input	X1,X2,X3,X4,CM	The 4-way switch signal input terminal	Switch signal input, effective connection with CM
Digital output	TA,TB,TC	relay output	TA, TB are often closed, TA, and TC are often open Contact capacity: AC 250V / 1A
	OC1,OC2,OC3	Open-circuit electrode output	When the output is valid, the OC terminal is connected to the CM
485 Communication	RS -,RS +	R485 communication interface	MODBUS RTU communication, connect to the touch screen, PLC
direct-current assist Power 1	10 V	Provide + 10V / 100mA power supply	Analog input reference power supply
	GND	10V, AI, and AO reference points	10V, AI, AO public end
read analogue input	AI1,AI2	Voltage signal input end	0~10V voltage input for power given signal or other signal
Analog output	AO1	Voltage and current	0~10V (0-20mA)

Terminal Type	Terminal Symbol	Terminal Function	Remarks
		signal output end	analog output
Temperature sensor interface	T+, T1-,T2-	A 2-way NTC temperature sensor input	T + is the N TC public end, Those with $B x = 3950$, $R_p = 10K$, or $Bx = 3950$, and $R_p = 5K$ are recommended Thermal resistance
direct-current assist	24V	Provide + 24V / 100mA power supply outward	
Power supply 2	CM	Reference point for X1-X4 input, OC1-OC3 output	X, OC, 24V public end

2.3 Basic power supply wiring diagram



Chapter 3. The Operation of the LED Power Supply

3.1 Introduction to the basic functions of the operation panel

The operation panel is the standard configuration of the LED power supply. Users can set the parameters, status monitoring and fault query of the LED power supply through the operation panel. Accordingly, the operation panel can be divided into three working modes: state monitoring mode, internal parameter modification / query mode, and state parameter query mode.

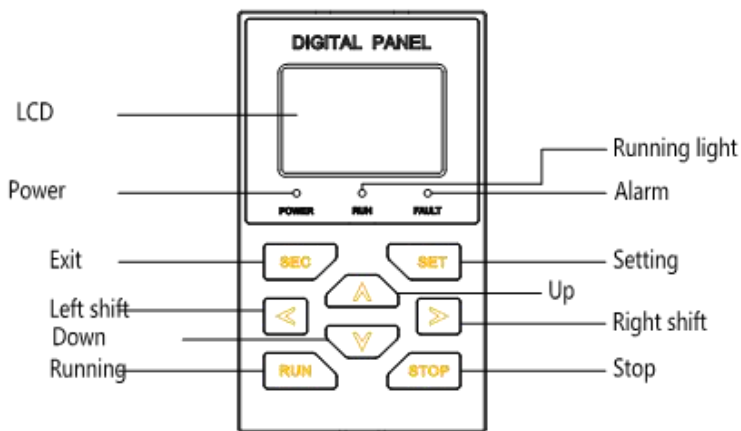






Figure 3.1. Schematic diagram of the operation panel

The functions of each key shall refer to the following table:

ITEM	Function
Keyboard Function	<p>Return key.</p> <p>In the status monitoring mode, press the key to enter the status parameter, monitoring parameter query mode, and you can view the operating status parameters. In any other operation state, pressing the key alone returns to the previous menu.</p>
	<p>Set key.</p> <p>Confirm the current status or parameters (parameters are stored in the internal memory) and proceed to the next level function menu.</p>
	<p>Up Key.</p> <p>The data modification (plus) key. Use to move the menus or to modify the function code.</p>
	<p>Down key.</p> <p>Modify the data (Minus)key. Use to move the menus or to modify the function code.</p>
	<p>Left Key.</p> <p>In the state of data modification by moving   key, it could choose which number could be revised. The selected number will flash on the screen.</p>
<p>Right Key.</p> <p>In the state of data modification by moving   key, it could choose which number could be revised. The selected number will flash on the screen.</p>	




ITEM	Function	
		Run key. Effective when the startup channel is set to a panel
	 	Stop key. Effective when the startup channel is set to a panel.

Table 3.1 Description of the operation panel keyboard function

3.2 Picture analysis of the operation panel

(1) Basic surveillance picture

After the power supply is energized, boost screen and enter the basic monitoring screen in about 3 seconds. The basic monitoring screen is shown in the following figure:

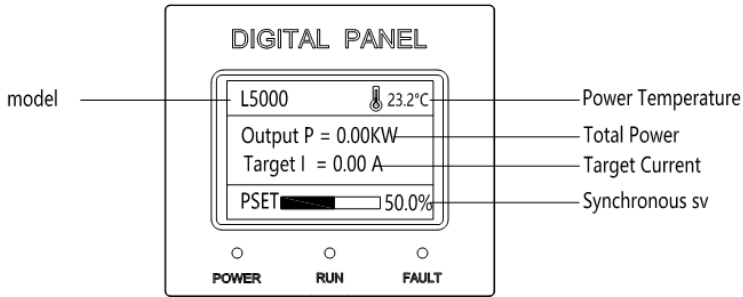


Figure 3.2 Basic monitoring screen

The basic monitoring screen shows the output power and the target current of the whole power supply machine. In the synchronous mode, the given percentage below changes with the given.

(2) Channel status picture

In the basic monitoring screen, press the right shift key (>) to enter the channel status screen. The screen display information is shown in the following figure:

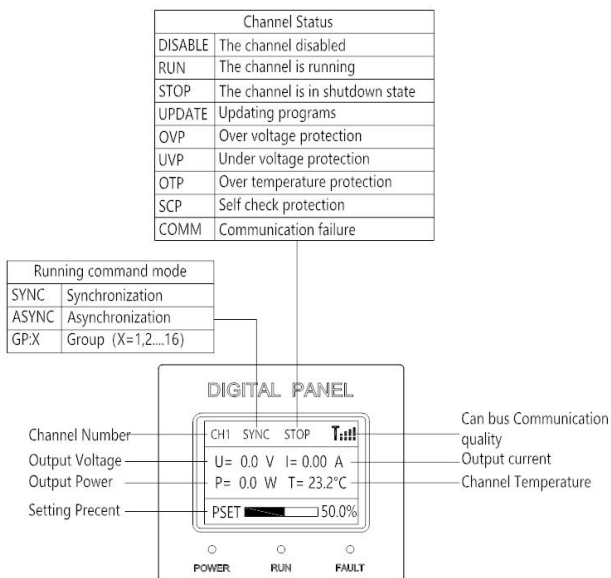


Figure 3.3. Channel status picture

(3) Fault monitoring picture

Press the left key (**←**) to enter the fault monitoring screen (Figure 3.4), Press the left key in the fault monitoring screen to display 5 fault records (Figure 3.5). For the failure occurred after the power-on, the fault record screen shows the seconds away from the new fault. Press the Return Key (**↵**) on the fault monitoring screen to return to the basic monitoring screen.

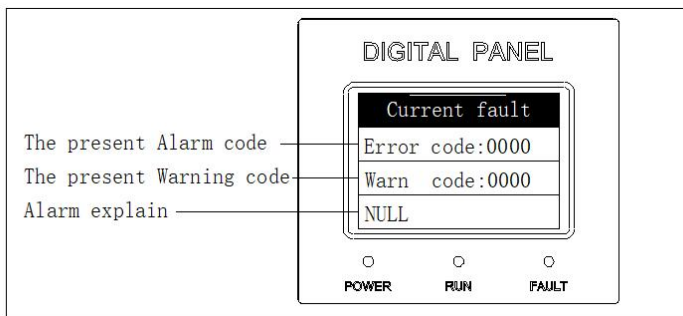


Figure 3.4 Current Fault Display

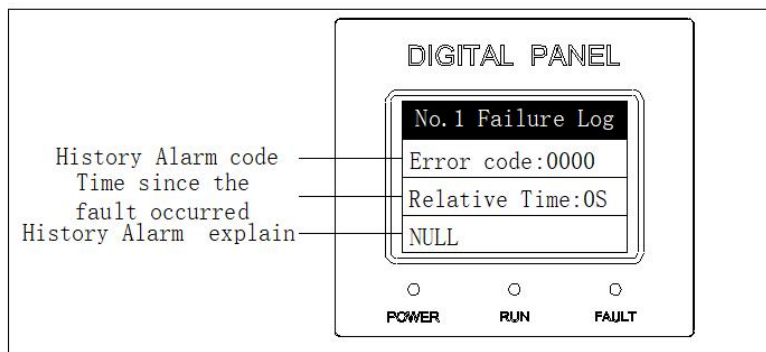


Figure 3.5 Fault Record Shows

(4) Quick monitoring function

Press the Return key (**ESC**) in the basic monitoring screen to enter the quick monitoring menu, press up key,down key to choose quick monitor item, press (**SET**) to enter matching quick monitor page.

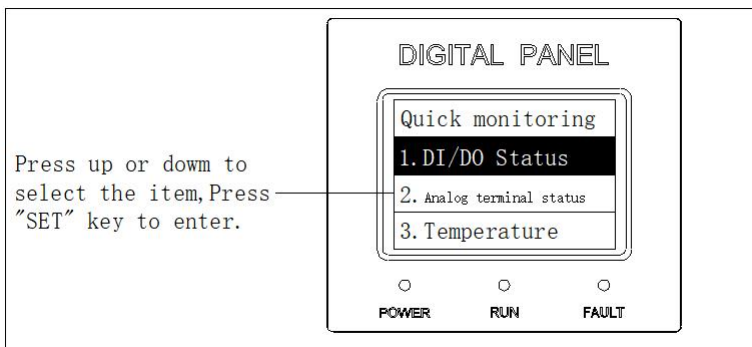


Figure 3.6 Quick Monitoring Menu

The digital terminal status screen is used to view the status of the digital input terminals (X 1, X2, X3, X4) and the digital output terminals (OC1, OC2, OC3, and the signal relay).

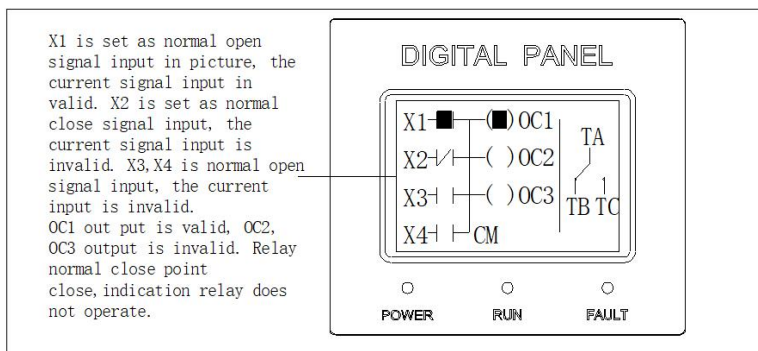


Figure 3.7. Digital terminal status\

The analog terminal state screen is used to view the status of the AI terminal state. The first line shows whether the AI value is within the correct range. Taking AI1 as an example, if the value of the current input signal is higher than the upper alarm value of A I1, "A I1-" is

displayed ↑ ; otherwise, if the value of the input signal is lower than the lower alarm value of AI1, "AI1-" is displayed ↓ . It should be noted that the upper and lower arrows (“ ↑ ”,“ ↓ ”) displayed in this screen only indicate whether the input signal is in the set range, and whether the output alarm is depends on the set value enabled by the A I alarm function. If the input signal of A I1 and AI2 is a current signal of 4-20MA, a 500 Ω resistance is required to convert the current signal into a voltage signal. For specific wiring and parameter setting, refer to the analog terminal function chapter.

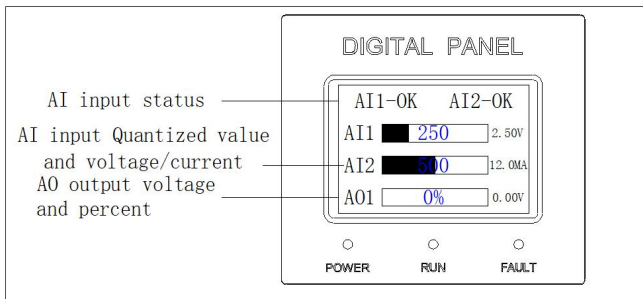


Figure 3.8 Simulated terminal states

The first line of the temperature terminal state screen indicates the input temperature range by the arrow symbol (“ ↑ ”,“ ↓ ”), the second line shows the currently set thermistor material standard B value and standard temperature resistance value R_p , and the third and fourth lines show the input temperature values of T 1 and T2 in form of input ratio. If the temperature sensor is not connected or disconnected, the temperature value shows "OPEN", and "SHORT" if the temperature sensor is short circuit. The following figure shows the screen displayed when T 1 is not connected and T2 is normally connected.

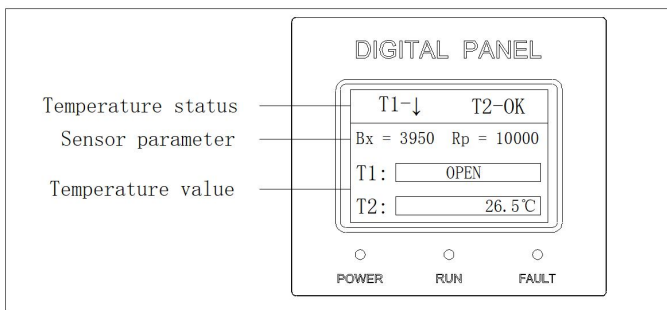


Figure 3.9. Temperature terminal state

(5) Parameter setting function

Press the Settings key (**SET**) to enter the main menu. The main menu is displayed in the form of icon and text. Move left or right to switch between the menu. After entering the corresponding menu function, select the appropriate sub-items until the last level menu sets the parameters or selects the setting option. Refer to the functional parameter section for specific parameter meanings and functions.

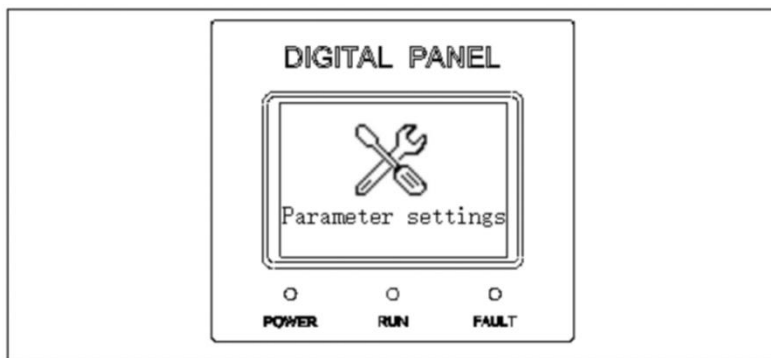


Figure 3.10. Main Menu

Numerical parameter setting and option parameter setting are relatively simple, do not do much here. Briefly described only with channel enabling settings and grouping channel selection settings.

- The channel enables the setting

The enabling value of the "**Basic Parameters-> 1. Basic Power Control-> 06. Enabling command channel**" is set to "0. Number Set". The enable value set by the panel takes effect. By selecting the menu "**Basic Parameters-> 1. Basic Power Control-> 07.C H1-16 Settings / 08.CH17-32 Settings / 09.CH33-48 Settings**". The Channel setup is shown in the figure below.

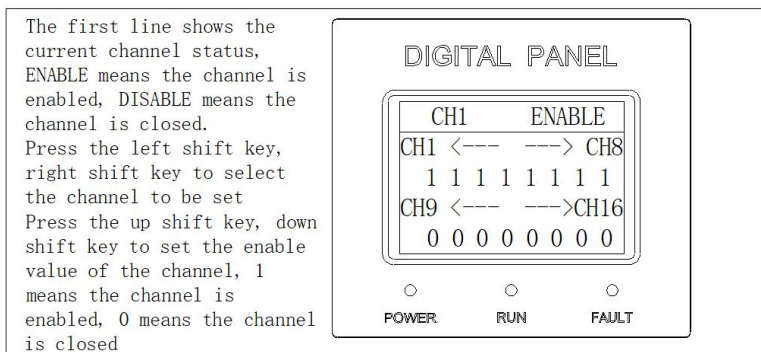


Figure 3.11 Channel enables to set the screen

- Group channel selection

When a host connects to multiple LED lights, or when the LED lights require segmented control, the grouping function can be used to divide several channels of the machine into groups, with up to 16 groups being set. The grouping function is valid when the power running mode is set to grouping or the power given mode is set to grouping. Refer to the functional parameters section for specific grouping functions.

Enter the group selection by selecting the menu "**2. Group Management-> 1. Group Channel Selection**", After selecting the appropriate group, Press the Set Key (SET) to enter the channel selection. On the right is a list of optional channels, on the left is a list of selected channels, Press left key (←) / Right key (→) could switch between selected and

optional. Press Up (▲) and Down (▼) to select the channel to operate, Press the set key (SET) to move the current channel to the other side. After setting, press the return key (ESC) to pop up **whether to save the changes**, and select **Save changes and (SET) key** to return to **channel Selection**.

The grouped channel selection is shown in the picture below.

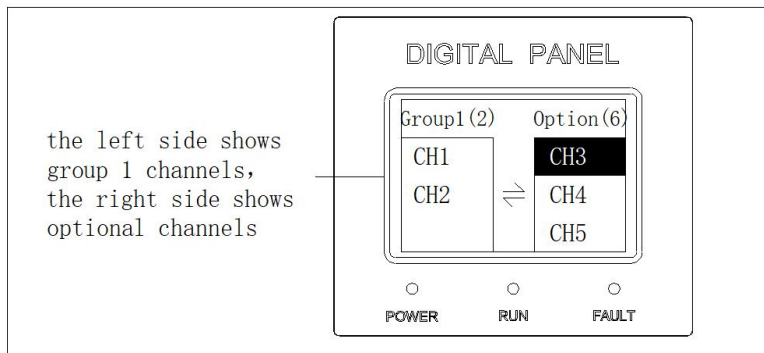


Figure 3.12 Grouping channel selection

(6) Monitor parameter images

Press Set Key to enter the main menu, press Right Key (▶) to select monitoring status, press Set Key (SET) again to enter the status monitoring group selection menu (Figure 3.13), press Up Key (▲) and Down Key (▼) to select the monitoring parameter group to view, press Set Key (SET) to enter the parameter value display screen (Figure 3.14), and adjust function code to view different parameters.

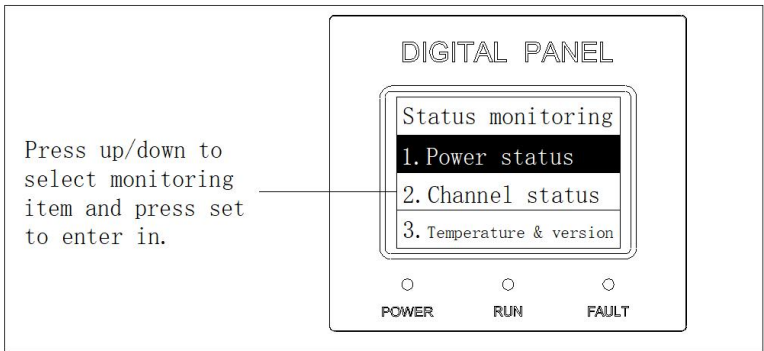


Figure 3.13. Status Monitoring Group Menu

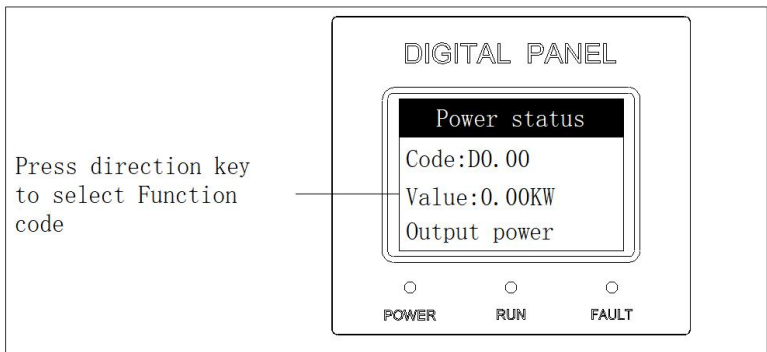


Figure 3.14. Status Monitoring Group Menu

3.3 Indicator Light Description in Operation Panel

There are three LED indicator lights below the operation panel display to indicate the power status.

Mark	color	Description	
POWER	Red	Slow Blink	Open 0.5s, Close 0.5s, power supply is preparing
		Twice lights one off	Open 0.8s, close 0.2s, Open 0.8s, close 1.2s, said phase close
		Fast Blink	Open 0.1s, close 0.1s, lack of voltage
		Open	Input Normal
RUN	Green	Open	More than one channel is running
		Close	All channels is not running
FAULT	Yellow	Blink	A channel is in the alarm state
		Open	Power supply is in fault state

Chapter 4 Function Parameters

4.1 Basic parameters

4.1.1 Basic power supply control

1. Power supply start Mode

Default: Control box command start

<i>NO.</i>	<i>Option List</i>	<i>Description</i>
0	Control box command start	Only the synchronous mode is valid
1	X terminal start	Synchronous mode and group mode are valid
2	RS485communication start	Synchronous, asynchronous, and group modes are available
3	The extension communication card is started	Synchronous, asynchronous, and group modes are available
4	The extension IO start	Only group mode is available

Select a way to turn on the power (light) from the menu option.

2. Power given channel

Default: digital setting

<i>NO.</i>	<i>Option List</i>	<i>Description</i>
0	digital setting<panel>	Synchronous mode
1	Analog terminal setting	Synchronous mode or grouping of no more than 2 groups
2	X terminal multi-segment setting	Remain
3	RS485communication setting	MODBUS RTU communication setting
4	The extension communication card	MODBUS TCP communication card setting

	is started	
--	------------	--

The power given channel is used to select a way to adjust the output power (current)

0.Digital setting<panel>

Press Up key (^) and down key (v) in digital panel on the Basic Monitoring Page to change the given power

1.Anlaog terminal setting

The power supply supports two analog inputs, which can be used to set the power in synchronous mode or within two group mode. When the power given channel is set as an analog terminal, you need to set the selected AI terminal in the function parameter group of the analog terminal. (See section 4.1.3 Simulating Terminal Functions)

2.X terminal multi-segment setting

This function is used for compatible models of file control, which has been rarely used

3.RS485 communication mode

The synchronous power write address is hexadecimal 1001H(hexadecimal 4097), and the asynchronous power write address is hexadecimal 2003H(hexadecimal 8195)-- hexadecimal 2032H(hexadecimal 8242). The group power write address is hexadecimal 3001H(10 base 12289)-- hexadecimal 3010H(10 base 12304), and the written data is a 16-bit unsigned number from 0 to 1000, representing 0.0% to 100.0% of the power output. The write parameter value can be lower than the lower limit power, but the actual output power of the power supply cannot be lower than the lower limit power. For more information on communication, see chapter.

4.Extended communication card Settings

The expansion card is an Ethernet board dedicated to the L5000 power supply and supports MODBUS TCP. For more information about the expansion card, see I5000-TCP Board Description.

3. power supply running mode

Default: synchronous starting

NO.	Option List	Description
0	Synchronous start	All channels of power supply are controlled together
1	Synchronous start	Each channel individually controls the start and stop
2	Group start	Several channels are divided into a group for control

LED power supply adopts multi-channel output, the start and stop and power of each channel are individually controllable. In synchronous mode, all channels control the start and stop together. In asynchronous mode, each channel controls the start and stop separately. In group mode, any output channels of the power supply are divided into a group, which can be divided into a maximum of 16 groups.

4. Power given mode

Default: Synchronization of a given

NO	Option List	Description
0	Synchronization of a given	All channels of power supply are dimmed together
1	Asynchronous given	Each channel is dimmed separately
2	Group mode given	Several channels are divided into a group of dimmers

The function of the power given mode parameter is similar to that of the power supply operating mode parameter.

5. Power supply Channels

Default: confirmed by Power supply Model

Parameters name	Setting range	Description
Power supply channels	0-48	Number of channels that the power supply can manage

Generally, this parameter is set to the maximum channel address value.

6. Enable the command channel

Default: Digital setting

No	Option List	Description
0	Digital setting	All channels of power supply are dimmed together
1	Standard 485 terminal setting	Each channel is dimmed separately
2	Extended communication card Settings	Several channels are divided into a group of dimmers

Each output channel has a corresponding enable bit register, and the channel that is not enabled is forbidden to output. Generally, this function is used to close several output channels in synchronous mode.

For example: there are 12 substrates for an LED lamp, and only 6 substrates in the middle work when curing a product. Then the three substrates on the left and the three substrates on the right can be set to 0.

0.digital setting:

7.CH1-16 enable Settings, 8.CH17-32 enable Settings, 9. CH33-48 Enable Settings Directly set the enable values.

1. Standard 485 terminal setting:

Set by MODBUS RTU protocol over RS485 port, set the address to hexadecimal 1002H(10base 4098)-- 1004H(10base 4100).

2. Extended communication card Settings

Set through the L5000-TCP board

7. Ch1-16 Enable setting, 8.CH17-32 enable setting, 9.CH33-48 enable setting

Default: confirmed by power supply model

Parameters name	Setting range	Description
Digital enable setting	0-65535	Parameter screen by bit setting

Refer to Figure 3.11 Parameter enable setting screen.

10.Lower power value

Default: 30.0%

Parameters name	Setting range	Description
Lower power value	5.0-100.0%	Minimum operating power of LED lamp

When the output current is too small, the power supply will enter the discontinuous mode (DCM) and the output quality of THE LED will be reduced. Since the LED lamp can be started instantly, you do not need to set the STANDBY mode for the LED lamp. It is recommended to turn off the LED directly when it is standby.

11. Synchronous digital power Settings

Default: 100.0%

Parameters name	Setting range	Description
Synchronous digital power Settings	Lower power value-100.0%	The panel quickly sets the given power

This parameter is valid only when the power given channel is set to digital < panel >

4.1.2 Digital terminal function

1.digital input terminal function choosing(X1,X2,X3,X4)

Default: start command

No	Option List	Description
0	Start command	Synchronous start terminal
1	Fault reset signal	Used for user
2	scram signal	Stop all channels when emergency stop signal is in effect
3	Outer fault 1	Outer fault 1
4	Outer fault 2	Outer fault 2
5	Outer fault 3	Outer fault 3
6	Remain	
7	Remain	
8	Group mode group 1 is enabled	The starting terminal of group 1
9	Group mode group 2 is enabled	The starting terminal of group 2
10	Group mode group 3 is enabled	The starting terminal of group 3
11	Group mode group 4 is enabled	The starting terminal of group 4
12	Remain	
13	Remain	
14	Remain	
15	PANEL UPDATE	The panel program update is enabled

The emergency stop signal input is soft emergency stop. After the signal input is effective, the power supply stops output, but the power supply is not disconnected. External fault input function can be connected to temperature switch, frequency converter fault alarm. When multiple terminals are configured with the same function, the smaller terminal number takes effect. For example, if both X1 and X2 are set to start, the X1 signal is valid and the X2 signal is invalid.

2. Digital output terminal function selection (relay 1, OC1,OC2,OC3)

Default:

Relay1 : Fault signal output,

OC1: Alarm signal output,

OC2: Fault signal output,

OC3: Fault signal output

NO.	Option List	Description
0	Fault signal output	Output when the power supply fails
1	Alarm signal output	output when the power supply alarm
2	Remain	
3	Power supply is running	Output when more than one channel is running
4	Power supply is ready	Output after the power self-check is normal
5	Remain	
6	Communication written	Terminal status is controlled by communication
7	Reserve	

When multiple digital output terminals are configured with the same function, all outputs are valid

3.X terminal mode(X1,X2,X3,X4)

Default: normally open

NO	Option List	Description
0	Always open	Normally open signal input
1	Always close	Normally close signal input

By default, the SIGNAL input of the X terminal is normally on. To access the normally closed signal, change the signal type of the corresponding X terminal to normally closed.

4.X terminal filtering time

Default: 10ms

Parameters name	Setting range	Description
X terminal filtering time	5-10000ms	X signal input hold time

The input of X signal is valid after the time set by this parameter is maintained.

5.OC terminal output character (OC1, OC2, OC3)

Default: contact with CM when output

NO.	Option List	Description
0	contact with CM when output	The OC level is low when the output is valid
1	Not contact with CM when output	When the output is valid, the OC level is in high resistance state

4.1.3 Analog terminal function

1.AI terminal function choosing (AI1,AI2)

Default: Power given

No	Option List	Description
0	Power given	Normally open signal input
1	Light intensity detection	Normally close signal input
2	water temperature examination	Cooling water temperature detection
3	lamp board temperature checking1	lamp board temperature checking
4	Lamp board temperature checking 2	Lamp board temperature checking
5	Grouping mode group 1 is given	Set the power size of group 1
6	Grouping mode group 2 is given	Set the power size of group 2

2.AI input range

Default: 10.0V

Parameters name	Setting range	Description
AI input range	0.0-10.0V	AI quantization value corresponding to the voltage value

3.AI Quantization value

Default: 1000

Parameters	Setting range	Description
AI quantization value	0-65535	The actual physical value corresponding to the input voltage value

4.AI Upper alarm value

Default: 0

Parameters name	Setting range	Description
AI upper alarm value	0-65535	

5.AI 下限报警值

默认值: 0

Parameters name	Setting range	Description
AI lower alarm value	0-65535	

6.AI alarm function enable

Default: disability

NO.	Option List	Second choosing
0	AI1 upper alarm enable	0: Disability 1: enable
1	AI1 lower alarm enable	0: Disability 1: enable
2	AI2 Upper alarm enable	0: Disability 1: enable

3	AI2 Lower alarm enable	0: Disability 1: enable
---	------------------------	-------------------------

After the corresponding alarm function is enabled, the fault will be output if the input value is not in the allowed range.

7.AI Alarm filtering time

Default: 100ms

<i>Parameters Name</i>	<i>Setting range</i>	<i>Description</i>
AI alarm filtering time	0-10000ms	

8.AO1 terminal function choosing

Default: Disability

<i>NO.</i>	<i>Option List</i>	<i>Description</i>
0	temperature control output	0: Disability 1: enable
1	Speed control output	0: Disability 1: enable
2	communication read and write	0: Disability 1: enable
3	Follow the power set value	0: Disability 1: enable

9.AO1 output range

Default: 100%

<i>Parameters Name</i>	<i>Setting Range</i>	<i>Description</i>
AO1 output range	0-100%	AO1 Upper limit of output voltage or current value

The value of the output voltage or current when AO1 signal is 100%. The default output voltage is 10V and the corresponding current is 20MA. For example, if the upper output voltage is 5V, set this parameter to 50%.

10.AO1 terminal function choosing

Default: voltage type

<i>No</i>	<i>Option list</i>	<i>Second choice</i>
0	AI1 signal type	0: voltage type 1:current type
1	AI2 signal type	0: voltage type 1:current type

2	AO1 signal type	0: voltage type 1:current type
---	-----------------	--------------------------------

The AI input signal only supports voltage input. If the input signal is current, a resistor is needed to convert it into voltage signal. AO output supports voltage and current type, with jumper cap selection

4.1.4 temperature terminal function

1.Tn terminal function choosing(T1,T2)

Default: Temperature checking and alarm

NO.	Option list	Description
0	Temperature checking and alarm	
1	Reserve	
2	Reserve	

2.temperature sensor B value

Default: 3950

Parameters Name	Setting Range	Description
temperature sensor B value	0-65535	temperature sensor parametes

3.Temperature sensor RP value

Default: 10000 ohm

Parameters Name	Setting Range	Description
Temperature sensor RP value	0-65535	Temperature sensor parameters

4.Tn Upper alarm value(n=1,2)

Default: 75.0°C

Parameters Name	Setting Range	Description
temperature upper alarm value	0.0-150.0°C	

5.Tn Lower alarm value(n=1,2)

Default: 5.0°C

Parameters Name	Setting Range	Description
------------------------	----------------------	--------------------

Temperature lower alarm vlaue	0.0-150.0°C	
-------------------------------	-------------	--

6. Temperature difference alarm value

Default: 50.0°C

Parameters Name	Setting Range	Description
Temperature difference alarm value	0.0-150.0°C	

7. Temperature Alarm Enable

default: disability

No	Option List	Second Choice
0	T1 Upper alarm enable	0: disability 1: enable
1	T1 Lower alarm enable	0: disability 1: enable
2	T2 Upper alarm enable	0: disability 1: enable
3	T2 Lower alarm enable	0: disability 1: enable
4	temperature difference enable	0: disability 1: enable

8. Temperature alarm filtering time

Default: 1000ms

Parameters Name	Setting Range	Description
Temperature alarm filtering time	0-10000ms	

4.1.5 MODBUS communication setting

1. From the station address

Default: 1

Parameters Name	Setting Range	Description
From the station address	0-247	

2. Baud Rate

Default: 9600

NO.	Option List	Description
0	4800	
1	9600	
2	19200	
3	38400	
4	57600	
5	115200	

3. Verification Mode

Default: even parity check

NO.	Option List	Description
0	Even check	
1	Odd check	
2	No check	

3. stop bit

Default: one stop bit

NO.	Option List	Description
0	One stop bit	
1	Two stop bit	

4. Communication timeout

Default: 3000ms

Parameters Name	Setting Range	Description
Communication timeout	0-60000	

If the timeout stop enabling bit of advanced communication is set to enable and no correct MODBUS data frame is received within the specified time, the communication timeout fault is reported

5. Communication advanced Settings

Default: Disability

NO.	Option List	Second Choice
0	Broadcast write is enabled	0: Disability 1: enable
1	Error reply enabled	0: Disability 1: enable
2	Timeout shutdown enabled	0: Disability 1: enable
3	Parameter change enabled	0: Disability 1: enable
4	L3000 compatible mode	0: Disability 1: enable

Does not respond to broadcast commands (command frames sent by the host at address 0) when broadcast writes are disabled.

When L3000 compatibility mode is enabled, the unit of D000H read is W, and the power of 1000H address write is 0 to 100, indicating 0 to 100% current output. The following example describes the differences between L3000 compatibility mode and L3000 compatibility mode.

L3000 compatible mode	influencing parameter		show value	Communication value
disability	D000H	Output power	2.35KW	235
	1000H	Power given	50.0%	500
Enable	D000H	Output power	2351W	2351
	1000H	Power given	50%	50

6. Quick Communication Settings

Default: disability

No.	Option List	Second Choice
0	Optional 1	0: disability 1: enable
1	Optional 2	0: disability 1: enable
2	Optional 3	0: disability 1: enable
3	Optional 4	0: disability 1: enable
4	Optional 5	0: disability 1: enable
5	Optional 6	0: disability 1: enable
6	Optional 7	0: disability 1: enable
7	Optional 8	0: disability 1: enable
8	Optional 9	0: disability 1: enable
9	Optional 10	0: disability 1: enable
10	channel voltage	0: disability 1: enable
11	channel current	0: disability 1: enable
12	channel power	0: disability 1: enable
13	Channel temperature	0: disability 1: enable
14	channel version	0: disability 1: enable
15	Compatible with the sorting	0: disability 1: enable

Quick communication Settings are a method of stitching together read discontinuous address data into a single instruction read. Compared with direct target address reading, this method can reduce communication instructions and improve communication efficiency. To use the quick communication function, generally follow the following steps:

- Plan parameters to be read, and check the number of optional parameters
- the bit value corresponding to the optional parameter number is enabled
- Virtual gateway Sets the optional parameter address
- Queues read data via C000H's address

For more Settings and examples of the quick communication function, see 5.2.3 Quick Communication.

7. Optional parameter n Address (n=1,2,3.....10)

Default: 0

<i>Parameters Name</i>	<i>Setting Range</i>	<i>Description</i>
Optional parameter n Address	0-65535	

The address of the parameter to be picked out is set to the parameter value.

Optional parameter address conversion rule: drop the "D" of the group index value, plus the value of the substring (ones and tens).

For example:

Group index	Sub-index	Parameters Name	Optional Address Set Value
D0	0	Output power	0
D1	31	channel 11 current value	131
D2	1	channel 2 temperature value	201

4.1.6 panel function

1. language

Default: (Chinese)

NO.	Option List	Description
0	Chinese	Switch to Chinese display
1	English	Switch to English display

2. Back light

Default: No operation delay close

NO.	Option List	Description
0	No operation delay close	
1	Always open when running	
2	Always open	

3. No operation off time

Default: 30Sec

Parameters Name	Setting Range	Description
No operation off time	5-3600Sec	Delay extinguishing panel backlight

4.1.7 Factory Setting Reset

1. factory data reset

Default: 0

NO.	Optional List	Description
0	No action	
1	Recovery Parameter Settings	
2	Clearing fault Records	

4.2 grouping management

The group management menu group is used to set the group channel, set the group power, query the current group information, and clear the group information. The L5000 supports a maximum of 16 power supply groups. You can select any channel as a group. The group

setting can only be performed by panel.

4.2.1 grouping channel choosing

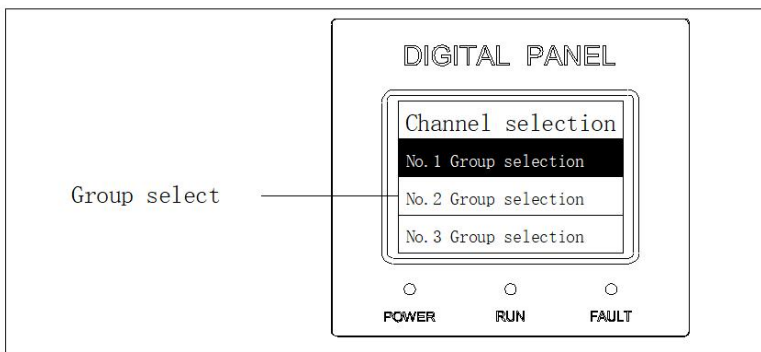


Figure 4.1 Group selection screen

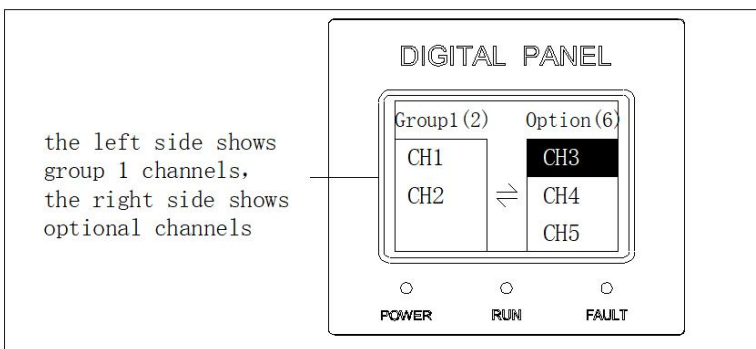


Figure 4.2 Group channel selection screen

Select "Group Management -> Group Channel Selection" from the menu to enter the group selection screen (Figure. 4.1), select the corresponding group and enter the group channel selection screen (Figure. 4.2). After the selection is complete, press the (ESC). A choice will pop up, press left key (←) or right key (→) to make a choice, and press the SET key to save.

4.2.2 Group Power Setting

In some simple applications or tests, you can SET the group power through our digital panel, press the Up key(▲) and down key(▼) to adjust power value on the Group Power Setting screen (Figure. 4.3), and press the SET key (SET) to save.

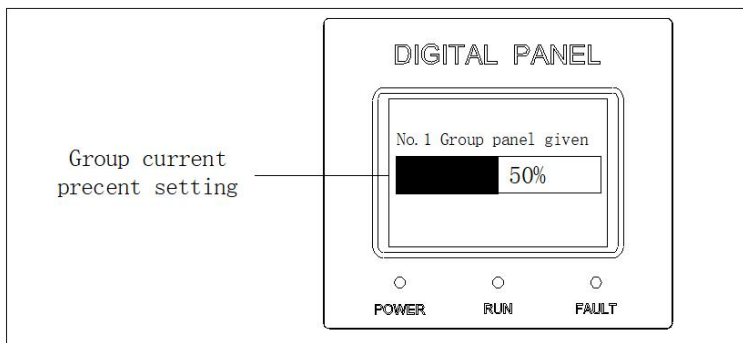


Figure 4.3 Group Power Digital Setting

4.2.3 Query the current group information

To display the group information directly, this function can displays the group information. Figure 4.4 shows that the power supply is divided into two groups. The first group includes channels 1, 2, 7 and 8, and the second group includes channels 3, 4, 5 and 6.

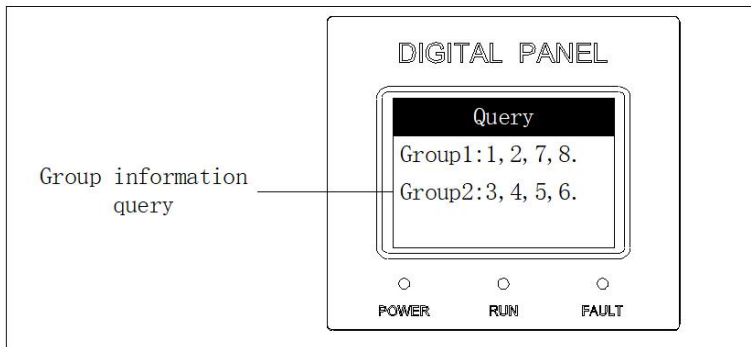


Figure 4.4 When group information is queried

4.2.4 Clearing Group Information

This function can quickly clear all group information. You are advised to clear the current group information before setting a group. Press the SET key to select this function, and a message will displayed to clear data. Select OK to clear group information.

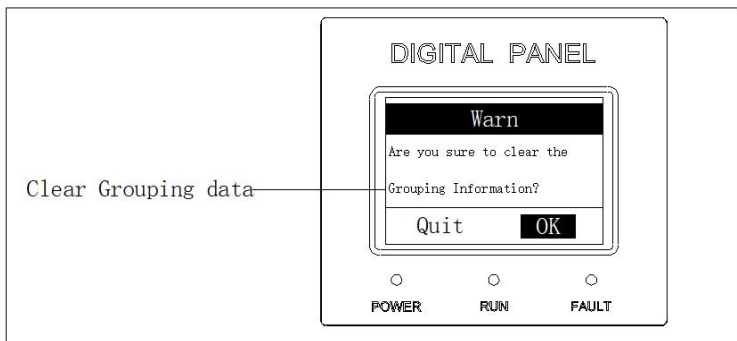


Figure 4.5 Clear the group information prompt

4.3 Channel management

Channel management menu includes channel parameter batch Settings and channel n parameter Settings (n=1,1,3.....). ", the sub-menu is the same, the difference is that all channel parameters are set in batches and changed at the same time. If you do not need to change all parameters at the same time, please select the corresponding channel to change. The default value in the channel management menu depends on the model.

1.Upper current value

Parameters Name	Setting Range	Description
Upper current value	1.00-Model upper current	The current value corresponding to a given power of 100%

The upper current value can be adjusted downward from the upper current of the model. Set this parameter according to the actual lamp board current

2. Over-voltage

Parameters Name	Setting Range	Description
Over-voltage	Determined by model	When the output voltage exceeds this value, a fault or alarm is reported

The over voltage protection is generally used to detect LED cable disconnection. You are advised to set it to a value slightly smaller than the no-load voltage of the model. The default value is 2V lower than the no-load voltage. For example, if the no-load voltage is 180V, the over voltage protection value is 178V.

3. Under voltage protection value

Parameters Name	Setting Range	Description
Under voltage protection value	Confirmed by Model	If the output voltage is lower than this value, a fault or alarm is reported

Under voltage protection is used to detect LED cable short circuit, LED bead damage, or channel output abnormality. The set value should be less than the minimum normal operating voltage of the lamp board.

4. Over temperature protection value

Parameters Name	Setting Range	Description
Over temperature protection value	40-95°C	If the channel temperature is higher than this value, a fault or alarm is reported

Generally, the over temperature protection value does not need to be adjusted. Over temperature fault Check whether the power fan works normally, whether the air channel is blocked, and whether the ambient temperature is too high.

5. Delayed start time

Parameters Name	Setting Range	Description
Delayed start time	0-60000ms	Delay time after a start command is received

Generally, the delayed startup time is set to 0. If you need to set this parameter for special applications, set this parameter based on actual conditions.

4.4 Fault management

1. Action when the channel is faulty

Default: The faulty channel is stopped and an alarm is generated

NO	Option List	Description
0	The faulty channel is stopped and an alarm is generated	If a channel fails, disable the faulty channel only
1	Stop all channels and alarm	Any channel failure all stop

When a channel fault occurs, such as over voltage, under voltage, over temperature, or abnormal communication, an alarm or alarm is generated based on the set value of this parameter. When a channel fault occurs, if this parameter is set to 0, the fault channel stops and generates an alarm signal. The yellow indicator on the panel blinks. If this parameter is set to 1, all channels stop output and output fault alarm signals. The yellow indicator on the panel is steady on.

2. Fault reset mode

Fault: Automatic shutdown reset

NO.	Option List	Description
0	Automatic shutdown reset	Fault reset signal multiplexed stop signal
1	X terminal reset	Set up an X terminal for fault reset
2	RS485 communication reset	Write 3 to address 1000H reset

3	The extended communication port is reset	The Ethernet expansion card causes a reset
---	--	--

After the power failure, automatically stop output, and output fault code and alarm signal. Some systems will cut off the start signal after a failure, because by default the fault reset signal is multiplexed with the stop signal, so when the start signal is cut off, the fault is also reset. This will cause the power supply to stop but the panel does not show the fault. To avoid this situation, you can set the fault reset signal to another reset source. The fault will be cleared only after the reset source signal takes effect.。

3. Emergency stop fault, external fault n filter time (n=1,2,3)

Parameters Name	Setting Range	Description
Fault filtering time	0-60000ms	External input fault at least hold time

Emergency stop fault and external fault 1, 2, and 3 are fault signals input by X terminal. After the corresponding input is valid and the setting time of this parameter is maintained, the power output will be faulty accordingly.

4. Overvoltage alarm option

Default: check overvoltage

NO.	Option List	Description
0	Over pressure detection	The output voltage exceeds the set value alarm
1	thread break detector	Only when the voltage and current meet the condition does the alarm occur

Set the overvoltage alarm option parameter to 0. If the output voltage exceeds the preset overvoltage protection value, the output is abnormal (set the fault output alarm or alarm based on the channel fault action parameter). When this parameter is set to 1, the output is abnormal only when the output voltage is greater than the overvoltage protection value and

the current is smaller than the disconnection detection current value.

5. Disconnection test current value

Parameters Name	Setting Range	Description
Disconnection test current value	0.00-20.00A	If the output voltage is greater than the over voltage value and the current is less than the set value, the channel over voltage is reported

When the connection line between the power supply and the LED lamp is disconnected, the output voltage of the power supply increases to the no-load voltage, and the output current is 0. According to the characteristics of the voltage and current, it can detect whether the lamp line is disconnected. To prevent misoperation caused by detection error, it is recommended to set this parameter value to the upper current value of about 5%.

4.5 Extension Management

The expansion communication ports are used to connect temperature expansion cards, current detection cards, external I/O cards, and L5000 communication cards. For details about how to connect cables to the expansion card and how to set the expansion card, see the corresponding expansion card description. In particular, a power supply can be connected to two temperature expansion cards, two current detection cards, and one external I/O card at the same time. However, the L5000 communication card cannot be connected at the same time. If the L5000 communication card is to be used, the expansion communication port is occupied and cannot be connected to other expansion cards

1.Extension card enable

Default: Disability

NO.	Option List	Second Choice
0	Temperature extension card 1	0: Disability 1: enable
1	Temperature extension card 2	0: Disability 1: enable

2	current detection card 1	0: Disability 1: enable
3	current detection card 2	0: Disability 1: enable
4	outer IO card	0: Disability 1: enable
5	extension communication card	0: Disability 1: enable

For the expansion card to be enabled, set the enable value to 1.

2. Baud Rate

Default: 19200

NO.	Option List	Description
0	4800	
1	9600	
2	19200	
3	38400	
4	57600	
5	115200	

3. verification mode

Default: even verification

NO.	Option List	Description
0	Even verification	
1	ODD verification	
2	No verification	

3. stop bit

Default: one stop bit

Description	Description	Description
0	One stop bit	
1	Two stop bit	

4. Communication timeout

Default: 3000ms

Parameters Name	Setting Range	Description
Communication timeout	0-60000ms	

5. Extended communication polling time

Default: 20

Parameters Name	Setting Range	Description
Extended communication polling time	0-60000ms	

6. Extended monitoring parameter selection

Default: temperature extension card 1

NO.	Option List	Description
0	temperature extension card 1	
1	temperature extension card 2	
2	current detection card 1	
3	Current detection card 2	

Set the display function of Status Monitoring >4. Expansion Card Parameters.

Other expansion parameters are reserved for the expansion card. For details, see related expansion card application manuals.

Chapter 5 Communication Protocol

5.1 Communication Protocol Description

L5000 series power supply supports MODBUS RTU communication protocol based on RS485, and supports 03H,06H, and 10H function codes. It can interact with most PLC, touch screen, PC, and DCS systems that support MODBUS RTU, so as to read and remotely control the power running status data.

5.2 read & write address file

Address for reading power status

5.2.1 D0 group base state

Array index	Sub-in dex	Communication address (hexadecimal)	Communication address (decimal)	Description
D0	0	D000	53248	output total power
D0	1	D001	53249	aim current
D0	2	D002	53250	running state
D0	3	D003	53251	fault code
D0	4	D004	53252	alarm code
D0	5	D005	53253	system highest temperature
D0	6	D006	53254	AI1 voltage value
D0	7	D007	53255	AI2 voltage value
D0	8	D008	53256	AI1 quantized value
D0	9	D009	53257	AI2 quantized value
D0	10	D00A	53258	AO1 quantized value
D0	11	D00B	53259	
D0	12	D00C	53260	digital input terminal state

Array index	Sub-index	Communication address (hexadecimal)	Communication address (decimal)	Description
D0	13	D00D	53261	digital output terminal state
D0	14	D00E	53262	T1 test value
D0	15	D00F	53263	T2 test value
D0	16	D010	53264	RScommunication state
D0	17	D011	53265	Grid voltage
D0	18	D012	53266	Enable state-CH1-CH16
D0	19	D013	53267	Enable state-CH17-CH32
D0	20	D014	53268	Enable state-CH33-CH48
D0	21	D015	53269	Remain
D0	22	D016	53270	
D0	23	D017	53271	
D0	24	D018	53272	Analog fault indicate
D0	25	D019	53273	temperature fault indicate
D0	26	D01A	53274	
D0	27	D01B	53275	
D0	28	D01C	53276	
D0	29	D01D	53277	
D0	30	D01E	53278	Bus voltage value
D0	31	D01F	53279	Maximum host temperature
D0	32	D020	53280	maximum channel temperature
D0	33	D021	53281	Host temperature 1

Array index	Sub-index	Communication address (hexadecimal)	Communication address (decimal)	Description
D0	34	D022	53282	Host temperature 2
D0	35	D023	53283	Host temperature 3
D0	36	D024	53284	LED Time HB
D0	37	D025	53285	LED Time LB
D0	38	D026	53286	consumptionHB
D0	39	D027	53287	LEDconsumption LB
D0	40	D028	53288	LED Time (h)
D0	41	D029	53289	LED Time(m)
D0	42	D02A	53290	LED Time (s)
D0	43	D02B	53291	
D0	44	D02C	53292	
D0	45	D02D	53293	
D0	46	D02E	53294	
D0	47	D02F	53295	
D0	48	D030	53296	
D0	49	D031	53297	First fault record
D0	50	D032	53298	Second fault record
D0	51	D033	53299	Third fault record
D0	52	D034	53300	Forth fault record
D0	53	D035	53301	Fifth fault record
D0	54	D036	53302	TRH
D0	55	D037	53303	TRL
D0	56	D038	53304	TOH
D0	57	D039	53305	TOL

Array index	Sub-index	Communication address (hexadecimal)	Communication address (decimal)	Description
D0	58	D03A	53306	control plate version
D0	59	D03B	53307	Program version number
D0	60	D03C	53308	channel running indicate 1
D0	61	D03D	53309	channel running indicate 2
D0	62	D03E	53310	channel running indicate 3
D0	63	D03F	53311	channel fault indicate 1
D0	64	D040	53312	channel fault indicate 2
D0	65	D041	53313	channel fault indicate 3
D0	66	D042	53314	Remain
D0	67	D043	53315	Remain
D0	68	D044	53316	Remain
D0	69	D045	53317	Remain
D0	70	D046	53318	Group 1 output power
D0	71	D047	53319	Group 2 output power
D0	72	D048	53320	Group 3 output power
D0	73	D049	53321	Group 4 output power
D0	74	D04A	53322	Group 5 output power
D0	75	D04B	53323	Group 6 output power
D0	76	D04C	53324	Group 7 output power
D0	77	D04D	53325	Group 8 output power
D0	78	D04E	53326	Group 9 output power
D0	79	D04F	53327	Group 10 output power
D0	80	D050	53328	Group 11 output power
D0	81	D051	53329	Group 12 output power

Array index	Sub-index	Communication address (hexadecimal)	Communication address (decimal)	Description
D0	82	D052	53330	Group 13 output power
D0	83	D053	53331	Group 14 output power
D0	84	D054	53332	Group 15 output power
D0	85	D055	53333	Group 16 output power
D0	86	D056	53334	
D0	87	D057	53335	
D0	88	D058	53336	
D0	89	D059	53337	
D0	90	D05A	53338	IO extension card EX terminal state
D0	91	D05B	53339	IO extension card ET1 temperature value
D0	92	D05C	53340	IO extension card ET2 temperature value
D0	93	D05D	53341	IO extension card ET3 temperature value
D0	94	D05E	53342	IO extension card ET4 temperature value
D0	95	D05F	53343	IO extension card ET5 temperature value
D0	96	D060	53344	IO extension card ET6 temperature value
D0	97	D061	53345	IO extension card ET7 temperature value

Array index	Sub-index	Communication address (hexadecimal)	Communication address (decimal)	Description
D0	98	D062	53346	IO extension card ET8 temperature value
D0	99	D063	53347	IO extension card ET9 temperature value

D1 Channel running data

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
D1	0	D100	53504	Channel 1 voltage
D1	1	D101	53505	Channel 1 current
D1	2	D102	53506	Channel 1 power
D1	3	D103	53507	Channel 2 voltage
D1	4	D104	53508	Channel 1 current
D1	5	D105	53509	Channel 1 power
D1	6	D106	53510	Channel 3 voltage
D1	7	D107	53511	Channel 3 current
D1	8	D108	53512	Channel 3 power
D1	9	D109	53513	Channel 4 voltage
D1	10	D10A	53514	Channel 4 current
D1	11	D10B	53515	Channel 4 power
D1	12	D10C	53516	Channel 5 voltage
D1	13	D10D	53517	Channel 5 current
D1	14	D10E	53518	Channel 5 power
D1	15	D10F	53519	Channel 6 voltage
D1	16	D110	53520	Channel 6 current
D1	17	D111	53521	Channel 6 power
D1	18	D112	53522	Channel 7 voltage
D1	19	D113	53523	Channel 7 current
D1	20	D114	53524	Channel 7 power
D1	21	D115	53525	Channel 8 voltage
D1	22	D116	53526	Channel 8 current

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
D1	23	D117	53527	Channel 8 power
D1	24	D118	53528	Channel 9 voltage
D1	25	D119	53529	Channel 9 current
D1	26	D11A	53530	Channel 9 power
D1	27	D11B	53531	Channel 10 voltage
D1	28	D11C	53532	Channel 10 current
D1	29	D11D	53533	Channel 10 power
D1	30	D11E	53534	Channel 11 voltage
D1	31	D11F	53535	Channel 11 current
D1	32	D120	53536	Channel 11 power
D1	33	D121	53537	Channel 12 voltage
D1	34	D122	53538	Channel 12 current
D1	35	D123	53539	Channel 12 power
D1	36	D124	53540	Channel 13 voltage
D1	37	D125	53541	Channel 13 current
D1	38	D126	53542	Channel 13 power
D1	39	D127	53543	Channel 14 voltage
D1	40	D128	53544	Channel 14 current
D1	41	D129	53545	Channel 14 power
D1	42	D12A	53546	Channel 15 voltage
D1	43	D12B	53547	Channel 15 current
D1	44	D12C	53548	Channel 15 power
D1	45	D12D	53549	Channel 16 voltage
D1	46	D12E	53550	Channel 16 current
D1	47	D12F	53551	Channel 16 power

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
D1	48	D130	53552	Channel 17 voltage
D1	49	D131	53553	Channel 17 current
D1	50	D132	53554	Channel 17 power
D1	51	D133	53555	Channel 18 voltage
D1	52	D134	53556	Channel 18 current
D1	53	D135	53557	Channel 18 power
D1	54	D136	53558	Channel 19 voltage
D1	55	D137	53559	Channel 19 current
D1	56	D138	53560	Channel 19 power
D1	57	D139	53561	Channel 20 voltage
D1	58	D13A	53562	Channel 20 current
D1	59	D13B	53563	Channel 20 power
D1	60	D13C	53564	Channel 21 voltage
D1	61	D13D	53565	Channel 21 current
D1	62	D13E	53566	Channel 21 power
D1	63	D13F	53567	Channel 22 voltage
D1	64	D140	53568	Channel 22 current
D1	65	D141	53569	Channel 22 power
D1	66	D142	53570	Channel 23 voltage
D1	67	D143	53571	Channel 23 current
D1	68	D144	53572	Channel 23 power
D1	69	D145	53573	Channel 24 voltage
D1	70	D146	53574	Channel 24 current
D1	71	D147	53575	Channel 24 power
D1	72	D148	53576	Channel 25 voltage

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
D1	73	D149	53577	Channel 25 current
D1	74	D14A	53578	Channel 25 power
D1	75	D14B	53579	Channel 26 voltage
D1	76	D14C	53580	Channel 26 current
D1	77	D14D	53581	Channel 26 power
D1	78	D14E	53582	Channel 27 voltage
D1	79	D14F	53583	Channel 27 current
D1	80	D150	53584	Channel 27 power
D1	81	D151	53585	Channel 28 voltage
D1	82	D152	53586	Channel 28 current
D1	83	D153	53587	Channel 28 power
D1	84	D154	53588	Channel 29 voltage
D1	85	D155	53589	Channel 29 current
D1	86	D156	53590	Channel 29 power
D1	87	D157	53591	Channel 30 voltage
D1	88	D158	53592	Channel 30 current
D1	89	D159	53593	Channel 30 power
D1	90	D15A	53594	Channel 31 voltage
D1	91	D15B	53595	Channel 31 current
D1	92	D15C	53596	Channel 31 power
D1	93	D15D	53597	Channel 32 voltage
D1	94	D15E	53598	Channel 32 current
D1	95	D15F	53599	Channel 32 power
D1	96	D160	53600	Channel 33 voltage
D1	97	D161	53601	Channel 33 current

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
D1	98	D162	53602	Channel 33 power
D1	99	D163	53603	Channel 34 voltage
D1	100	D164	53604	Channel 34 current
D1	101	D165	53605	Channel 34 power
D1	102	D166	53606	Channel 35 voltage
D1	103	D167	53607	Channel 35 current
D1	104	D168	53608	Channel 35 power
D1	105	D169	53609	Channel 36 voltage
D1	106	D16A	53610	Channel 36 current
D1	107	D16B	53611	Channel 36 power
D1	108	D16C	53612	Channel 37 voltage
D1	109	D16D	53613	Channel 37 current
D1	110	D16E	53614	Channel 37 power
D1	111	D16F	53615	Channel 38 voltage
D1	112	D170	53616	Channel 38 current
D1	113	D171	53617	Channel 38 power
D1	114	D172	53618	Channel 39 voltage
D1	115	D173	53619	Channel 39 current
D1	116	D174	53620	Channel 39 power
D1	117	D175	53621	Channel 40 voltage
D1	118	D176	53622	Channel 40 current
D1	119	D177	53623	Channel 40 power
D1	120	D178	53624	Channel 41 voltage
D1	121	D179	53625	Channel 41 current
D1	122	D17A	53626	Channel 41 power

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
D1	123	D17B	53627	Channel 42 voltage
D1	124	D17C	53628	Channel 42 current
D1	125	D17D	53629	Channel 42 power
D1	126	D17E	53630	Channel 43 voltage
D1	127	D17F	53631	Channel 43 current
D1	128	D180	53632	Channel 43 power
D1	129	D181	53633	Channel 44 voltage
D1	130	D182	53634	Channel 44 current
D1	131	D183	53635	Channel 44 power
D1	132	D184	53636	Channel 45 voltage
D1	133	D185	53637	Channel 45 current
D1	134	D186	53638	Channel 45 power
D1	135	D187	53639	Channel 46 voltage
D1	136	D188	53640	Channel 46 current
D1	137	D189	53641	Channel 46 power
D1	138	D18A	53642	Channel 47 voltage
D1	139	D18B	53643	Channel 47 current
D1	140	D18C	53644	Channel 47 power
D1	141	D18D	53645	Channel 48 voltage
D1	142	D18E	53646	Channel 48 current
D1	143	D18F	53647	Channel 48 power

D2 Group module status

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
D2	0	D200	53760	channel 1 temperature value
D2	1	D201	53761	channel 2 temperature value
D2	2	D202	53762	channel 3 temperature value
D2	3	D203	53763	channel 4 temperature value
D2	4	D204	53764	channel 5 temperature value
D2	5	D205	53765	channel 6 temperature value
D2	6	D206	53766	channel 7 temperature value
D2	7	D207	53767	channel 8 temperature value
D2	8	D208	53768	channel 9 temperature value
D2	9	D209	53769	channel 10 temperature value
D2	10	D20A	53770	channel 11 temperature value
D2	11	D20B	53771	channel 12 temperature

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
				value
D2	12	D20C	53772	channel 13 temperature value
D2	13	D20D	53773	channel 14 temperature value
D2	14	D20E	53774	channel 15 temperature value
D2	15	D20F	53775	channel 16 temperature value
D2	16	D210	53776	channel 12 temperature value
D2	17	D211	53777	channel 18 temperature value
D2	18	D212	53778	channel 19 temperature value
D2	19	D213	53779	channel 20 temperature value
D2	20	D214	53780	channel 21 temperature value
D2	21	D215	53781	channel 22 temperature value
D2	22	D216	53782	channel 23 temperature value
D2	23	D217	53783	channel 24 temperature value

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
D2	24	D218	53784	channel 25 temperature value
D2	25	D219	53785	channel 26 temperature value
D2	26	D21A	53786	channel 27 temperature value
D2	27	D21B	53787	channel 28 temperature value
D2	28	D21C	53788	channel 29 temperature value
D2	29	D21D	53789	channel 30 temperature value
D2	30	D21E	53790	channel 31 temperature value
D2	31	D21F	53791	channel 32 temperature value
D2	32	D220	53792	channel 33 temperature value
D2	33	D221	53793	channel 34 temperature value
D2	34	D222	53794	channel 35 temperature value
D2	35	D223	53795	channel 36 temperature value
D2	36	D224	53796	channel 37 temperature

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
				value
D2	37	D225	53797	channel 38 temperature value
D2	38	D226	53798	channel 39 temperature value
D2	39	D227	53799	channel 40 temperature value
D2	40	D228	53800	channel 41 temperature value
D2	41	D229	53801	channel 42 temperature value
D2	42	D22A	53802	channel 43 temperature value
D2	43	D22B	53803	channel 44 temperature value
D2	44	D22C	53804	channel 45 temperature value
D2	45	D22D	53805	channel 46 temperature value
D2	46	D22E	53806	channel 47 temperature value
D2	47	D22F	53807	channel 48 temperature value
D2	48	D230	53808	Channel I program version number

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
D2	49	D231	53809	Channel 2 program version number
D2	50	D232	53810	Channel 3 program version number
D2	51	D233	53811	Channel 4 program version number
D2	52	D234	53812	Channel 5 program version number
D2	53	D235	53813	Channel 6 program version number
D2	54	D236	53814	Channel 7 program version number
D2	55	D237	53815	Channel 8 program version number
D2	56	D238	53816	Channel 9 program version number
D2	57	D239	53817	Channel 10 program version number
D2	58	D23A	53818	Channel 11 program version number
D2	59	D23B	53819	Channel 12 program version number
D2	60	D23C	53820	Channel 13 program version number
D2	61	D23D	53821	Channel 14 program

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
				version number
D2	62	D23E	53822	Channel 15 program version number
D2	63	D23F	53823	Channel 16 program version number
D2	64	D240	53824	Channel 17 program version number
D2	65	D241	53825	Channel 18 program version number
D2	66	D242	53826	Channel 19 program version number
D2	67	D243	53827	Channel 20 program version number
D2	68	D244	53828	Channel 21 program version number
D2	69	D245	53829	Channel 22 program version number
D2	70	D246	53830	Channel 23 program version number
D2	71	D247	53831	Channel 24 program version number
D2	72	D248	53832	Channel 25 program version number
D2	73	D249	53833	Channel 26 program version number

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
D2	74	D24A	53834	Channel 27 program version number
D2	75	D24B	53835	Channel 28 program version number
D2	76	D24C	53836	Channel 29 program version number
D2	77	D24D	53837	Channel 30 program version number
D2	78	D24E	53838	Channel 31 program version number
D2	79	D24F	53839	Channel 32 program version number
D2	80	D250	53840	Channel 33 program version number
D2	81	D251	53841	Channel 34 program version number
D2	82	D252	53842	Channel 35 program version number
D2	83	D253	53843	Channel 36 program version number
D2	84	D254	53844	Channel 37 program version number
D2	85	D255	53845	Channel 38 program version number
D2	86	D256	53846	Channel 39 program

Array Index	Sub-index	Mailing Address (hexadecimal)	Mailing Address (decimal)	Description
				version number
D2	87	D257	53847	Channel 40 program version number
D2	88	D258	53848	Channel 41 program version number
D2	89	D259	53849	Channel 42 program version number
D2	90	D25A	53850	Channel 43 program version number
D2	91	D25B	53851	Channel 44 program version number
D2	92	D25C	53852	Channel 45 program version number
D2	93	D25D	53853	Channel 46 program version number
D2	94	D25E	53854	Channel 47 program version number
D2	95	D25F	53855	Channel 48 program version number

D3 Expansion card data mapping

The display of expansion card data mapping is related to the set value of "Expansion Management >7. Selection of Expansion Monitoring Parameters". Group D3 can display the data of the temperature expansion card and current expansion card.

5.2.2 Power Control Write Address

Power control commands are divided into synchronous commands, asynchronous commands and group commands. These addresses support 06H and 10H function code writing. The address of synchronous start command is 1000H, and data is written to the address. All power given address written values range from 0 to 1000, representing 0.0% to 100.0% of the current corresponding to the upper current value of the current size. Write 1 to the corresponding bit of the enable register to indicate that the channel is enabled, and write 0 to indicate that the channel is disabled. The asynchronous start and packet start registers correspond to bits that write 1 for start and 0 for stop.

Group	Mailing Address (hexadecimal)	Mailing Address (decimal)	Parameters Description	Remark
sync Command	1000	4096	synchronous starting	1: start 2: stop 3: fault reset
	1001	4097	synchronous power	0-1000
	1002	4098	CANME 0	Bit0-15 corresponding CH1-CH16
	1003	4099	CANME 1	Bit0-Bit15 corresponding CH17-CH32
	1004	4100	CANME 2	Bit0-Bit15 corresponding CH33-CH48
	1005	4101	Terminal control	Bit0-3corresponding relay, OC1,OC2,OC3
	1006	4102	Analog output	0-1000 corresponding

Group	Mailing Address (hexadecimal)	Mailing Address (decimal)	Parameters Description	Remark
				AO1 0-10V
	1007	4103	Fast write	
	1008	4104	clean LED running time	write one then clean,other data don't act
	1009	4105	Remain	
asynchronous command	2000	8192	Asynchronous start channel 1-16	Bit0-Bit15 corresponding CH1-CH16
	2001	8193	Asynchronous start channel 14-32	Bit0-Bit15 corresponding CH17-CH32
	2002	8194	Asynchronous start channel 33-48	Bit0-Bit15 corresponding CH33-CH48
	2003	8195	CH1 Asynchronous power value	0-1000
	2004	8196	CH2 Asynchronous power value	
	2005	8197	CH3 Asynchronous power value	
	2006	8198	CH4 Asynchronous power value	
	2007	8199	CH5 Asynchronous power	

Group	Mailing Address (hexadecimal)	Mailing Address (decimal)	Parameters Description	Remark
			value	
	2008	8200	CH6 Asynchronous power value	
	2009	8201	CH7 Asynchronous power value	
	200A	8202	CH8 Asynchronous power value	
	200B	8203	CH9 Asynchronous power value	
	200C	8204	CH10 Asynchronous power value	
	200D	8205	CH11 Asynchronous power value	
	200E	8206	CH12 Asynchronous power value	
	200F	8207	CH13 Asynchronous power value	
	2010	8208	CH14 Asynchronous power value	
	2011	8209	CH15 Asynchronous	

Group	Mailing Address (hexadecimal)	Mailing Address (decimal)	Parameters Description	Remark
			power value	
	2012	8210	CH16 Asynchronous power value	
	2013	8211	CH17 Asynchronous power value	
	2014	8212	CH18 Asynchronous power value	
	2015	8213	CH19 Asynchronous power value	
	2016	8214	CH20 Asynchronous power value	
	2017	8215	CH21 Asynchronous power value	
	2018	8216	CH22 Asynchronous power value	
	2019	8217	CH23 Asynchronous power value	
	201A	8218	CH24 Asynchronous power value	
	201B	8219	CH25 Asynchronous	

Group	Mailing Address (hexadecimal)	Mailing Address (decimal)	Parameters Description	Remark
			power value	
	201C	8220	CH26 Asynchronous power value	
	201D	8221	CH27 Asynchronous power value	
	201E	8222	CH28 Asynchronous power value	
	201F	8223	CH29 Asynchronous power value	
	2020	8224	CH30 Asynchronous power value	
	2021	8225	CH31 Asynchronous power value	
	2022	8226	CH32 Asynchronous power value	
	2023	8227	CH33 Asynchronous power value	
	2024	8228	CH34 Asynchronous power value	
	2025	8229	CH35 Asynchronous	

Group	Mailing Address (hexadecimal)	Mailing Address (decimal)	Parameters Description	Remark
			power value	
	2026	8230	CH36 Asynchronous power value	
	2027	8231	CH37 Asynchronous power value	
	2028	8232	CH38 Asynchronous power value	
	2029	8233	CH39 Asynchronous power value	
	202A	8234	CH40 Asynchronous power value	
	202B	8235	CH41 Asynchronous power value	
	202C	8236	CH42 Asynchronous power value	
	202D	8237	CH43 Asynchronous power value	
	202E	8238	CH44 Asynchronous power value	
	202F	8239	CH45 Asynchronous	

Group	Mailing Address (hexadecimal)	Mailing Address (decimal)	Parameters Description	Remark
			power value	
	2030	8240	CH46 Asynchronous power value	
	2031	8241	CH47 Asynchronous power value	
	2032	8242	CH48 Asynchronous power value	
Group Command	3000	12288	Group command start Bit0-15 correspond group 1-15	corresponding bit write 1 start write 0 stop
	3001	12289	GP1 Grouping power setting	0-1000
	3002	12290	GP2 Grouping power setting	
	3003	12291	GP3 Grouping power setting	
	3004	12292	GP4 Grouping power setting	
	3005	12293	GP5 Grouping power setting	

Group	Mailing Address (hexadecimal)	Mailing Address (decimal)	Parameters Description	Remark
	3006	12294	GP6 Grouping power setting	
	3007	12295	GP7 Grouping power setting	
	3008	12296	GP8 Grouping power setting	
	3009	12297	GP9 Grouping power setting	
	300A	12298	GP10 Grouping power setting	
	300B	12299	GP11 Grouping power setting	
	300C	12300	GP12 Grouping power setting	
	300D	12301	GP13 Grouping power setting	
	300E	12302	GP14 Grouping power setting	
	300F	12303	GP15 Grouping power setting	

Group	Mailing Address (hexadecimal)	Mailing Address (decimal)	Parameters Description	Remark
	3010	12304	GP16 Grouping power setting	

5.2.3 Quick communication function

To reduce the number of communication instructions reading data, the discontinuous addresses that need to be read can be set to a single instruction reading. The fast communication group data area consists of self-selected parameter area and channel data area. The data structure is shown in the figure below.

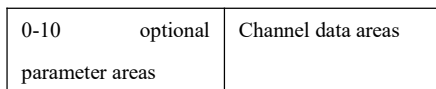


Chart 5.1 Data structures for fast communication

The read address of fast communication is hexadecimal C000H (hexadecimal 49152). The parameters of fast communication are displayed in Parameter Setting >1. Basic Parameters >5. MODBUS Communication Settings >07. Quick Communication Settings. For details about parameters, see 4.1.5 MODBUS Communication Settings. (U1,U2.....Un, I1,I2.....In, P1,P2.....Pn).

No	Code Parameters	Parameters name
1	D0.00	output total power
2	D0.02	running state
3	D0.03	fault code
4	D0.04	Alarm code
5	D0.08	A11 quantized value
6	D0.09	A12 quantized value

Analysis and comparison: Because the six parameter addresses to be read are not consecutive, at least two instructions are required to read in the traditional way, that is, the

first instruction reads the address of D000H() and the connection length is 10 characters, and the second instruction reads the address of D100H(decimal 53504) and the reading length is 24 characters. Use the fast communication function only need a communication command to complete.

Parameters setting:

1) Enable the quick communication function

Parameters name	secondary menu	Parameters value
Quick Communication Settings	0 self-selection 1	1.enable
	1. self-selection 2	1. enable
	2. self-selection 3	1. enable
	3. self-selection 4	1. enable
	4. self-selection 5	1. enable
	5. self-selection 6	1. enable
	10.channel voltage	1. enable
	11.channel current	1. enable
	12.channel power	1. enable

2) Set the address of the optional parameter

Parameters Name	Setting Value	Description
Optional parameter 1 Address	0	output total power
Optional parameter 2 Address	2	Running state
Optional parameter 3 Address	3	fault code
Optional parameter 4 Address	4	Alarm code
Optional parameter 5 Address	8	AI1 quantized value
Optional parameter 6 Address	9	AI2 quantized value

Reading number calculation: 6 optional parameters, 8 channels of voltage, current, power 6 + 8 * 3 = 30. The hexadecimal value is 1EH

MODBUS RTU Instruction frame structure				
From the station address	Function code	Parameters address	params	CRC
01H	03H	C000H	001EH	F9C2H

Send data frame: 01 03 C0 00 00 1E F9 C2

The total length of data returned by the power supply is 65 bytes, including 60 bytes of data area, which is arranged as:

self-selection parameters area	output total power
	Running state
	Fault code
	Alarm code
	AI1 quantized value
	AI2 quantized value
channel parameter area	channel 1 voltage value

	channel 8 voltage value
	channel 1 current value

	channel 8 current value
	channel 1 power value

Channel 8 power value	

Example 2: A power supply has 12 channels, divided into 4 groups of control, read the following table parameters, voltage and current values of each channel through one command. In channel data recovery, data for each channel is put together

(U1,I1,U2,I2.....Un,In). Use the same parameter arrangement as L3000 fast communication function

NO.	Parameter Code	Parameter Name
1	D0.00	Output total power
2	D0.02	Running state
3	D0.03	Fault code
4	D0.04	Alarm code
5	D0.14	T1 Temperature test value
6	D0.15	T2 Temperature test value
7	D0.70	Group 1 output power
8	D0.71	Group 2 output power
9	D0.72	Group 3 output power
10	D0.73	Group 4 output power

Analysis and comparison: With ten parameters need to read the address is not continuous, basic parameter area biggest address span 73 words, with an instruction to read not only takes up a lot of memory space, also affect the efficiency of bus communication, multiple instructions to read at least three, and the data in the reading passage, because do not need power value, but the power value is inserted into the voltage, electric current in the data, Bus performance is also affected here. This problem is solved by using fast communication mode, which can read back the required data at one time through an instruction.

Parameter setting:

1) Enable the quick communication function

Parameters Name	Secondary Menu	Parameter Value
Quick Communication Settings	0. self-selection 1	1.enable
	1. self-selection 2	1. enable
	2. self-selection 3	1. enable

	3. self-selection 4	1. enable
	4. self-selection 5	1. enable
	5. self-selection 6	1. enable
	6. self-selection 7	1. enable
	7. self-selection 8	1. enable
	8. self-selection 9	1. enable
	9. self-selection 10	1.enable
	10.channel voltage	1. enable
	11.channel current	1. enable
	15. Compatible with the sorting	1. enable

2) Set the address of the optional parameter

Parameters Name	Setting Value	Description
Optional parameter 1 Address	0	output total power
Optional parameter 2 Address	2	Running state
Optional parameter 3 Address	3	fault code
Optional parameter 4 Address	4	Alarm code
Optional parameter 5 Address	14	T1temperature test value
Optional parameter 6 Address	15	T2 temperature test value
Optional parameter 7 Address	70	group 1 output power

Optional parameter 8 Address	71	group 2 output power
Optional parameter 9 Address	72	group 3 output power
Optional parameter 10 Address	73	group 4 output power

3) Communication read instruction

Calculation of reading number: 10 optional parameters, 12 channels of voltage, current $10 + 12 * 2 = 34$. The hexadecimal value is 22H.

MODBUS RTU Instruction frame structure				
From station address	Function code	Parameter address	params	CRC
01H	03H	C000H	0022H	F9D3H

Send data frame: 01 03 C0 00 00 22 F9 D3

The total length of data returned by the power supply is 73 bytes, including 68 bytes of data area, which is arranged as follows:

self-selection parameter area	output total power
	Running state
	fault code
	Alarm code
	T1 temperature test value
	T2temperature test value
	group 1 output power
	group 2 output power
	group 3 output power
	group 4 output power
channel parameter area	channel 1 voltage value
	Channel 1 current value

	channel 2 voltage value
	Channel 2 current value

	channel 12 voltage value
	Channel 12 current value

5.3 Example communication program

5.3.1 Simense S7-200 SMART Series PLC Communication routines

1. Initialize the instruction block
2. Address change

5.3.2 Mitsubishi FX3U Series PLC communication program

5.3.3 Vellon touch screen communication setting method

5.3.4 Communication setting method of kunlun on-state touch screen

Chapter 6 Quick application

6.1 Fault code description

L5000 series power supply has rich fault alarm and alarm functions. Fault alarm means that the equipment fails and the machine cannot continue to run. After the alarm occurs, the machine will block the output, the fault indicator light on the operation panel will be on, and the fault code and fault description will be displayed. An alarm means that the machine can still run, but there are some non-fatal faults that need to be checked, such as an abnormal output of a certain LED. After the alarm occurs, the machine continues to run, and the fault indicator light flashes. When the machine's working status returns to normal, the alarm is automatically canceled. An alarm will only appear if the LED channel is abnormal, and the main power supply or other modules will output an alarm directly.

The abnormal code of the L5000 series power supply consists of 4 decimal numbers, and its representative meaning is shown in the figure below.

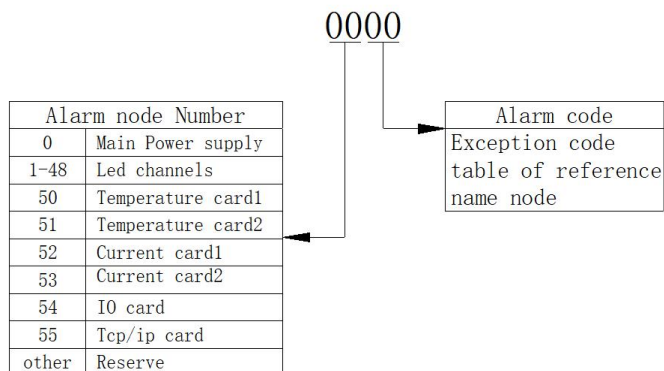


Chart 7.1 the meaning of abnormal code

6.1.1 Abnormal code table of main power supply

Code	Cause	Solution
1	Main power supply temperature is too high	<ol style="list-style-type: none"> 1. Is the main power fan running? 2. Whether the air inlet is blocked by dust 3. Check whether the ventilation of the electric cabinet is sufficient and whether the ambient temperature is too high
2	Abnormal DC bus voltage	<ol style="list-style-type: none"> 1. Measure whether the AC input power is normal 2. Whether the wiring of the DC bus is reversed or short-circuited 3. Use a multimeter to measure the bus voltage
3	Reservation	
4	Module Failure	<ol style="list-style-type: none"> 1. Whether the wiring of the DC bus is reversed or short-circuited 2. Measure whether the AC input voltage is too low 3. Check whether the AC input is out of phase
5	Input phase loss	<ol style="list-style-type: none"> 1. Measure whether the AC input voltage is too low 2. Check whether the AC input is out of phase
6	input under voltage	<ol style="list-style-type: none"> 1. Measure whether the AC input voltage is too low 2. Check whether the AC input is out of phase
7	CAN bus communication failed	<ol style="list-style-type: none"> 1. Check whether the CAN bus wiring is correct 2. Check the position of the CAN bus matching resistor jumper 3. Whether the main power supply is connected to the ground wire of the channel box
8	Main power over power	<ol style="list-style-type: none"> 1. Check whether the parameters are set correctly 2. Reduce the output power of the channel box
9	External input fault 1	<ol style="list-style-type: none"> 1. Check the external input signal 2. Check the parameter setting main power overpower
10	External input fault 2	Same as above
11	External input fault 3	Same as above

Code	Cause	Solution
12	Reservation	
13	Parameter backup error	Restore factory settings and reset parameters
14	EEPROM Storing Fault	Restore factory settings and reset parameters
15	AI1 up limit alarm	1. Check the AI input voltage value 2. Check AI-related parameter settings
16	AI1 low limit alarm	Same as above
17	AI2 up limit alarm	Same as above
18	AI2 low limit alarm	Same as above
19	T1 up limit alarm	1. Check whether the current temperature is normal 2. Check temperature sensor wiring 3. Check the temperature alarm related parameter settings
20	T1 low limit alarm	Same as above
21	T2 up limit alarm	Same as above
22	T2 low limit alarm	Same as above
23	T1,T2 Temperature difference alarm	Same as above
24	RS485 communication timeout	The correct command from the host computer was not received within the set timeout period 1. Communication interference, the communication cable is too long, and the shielded cable is not used 2. The communication baud rate is too high 3. Communication line impedance mismatch

6.1.2 Abnormal code table of channels

Code	Cause	Solution
1	output over voltage	1. Is the LED output open? 2. Check whether the over voltage protection parameters are set

Code	Cause	Solution
		correctly
2	output under voltage	<ol style="list-style-type: none"> 1. Is the LED output short circuited? 2. Check whether the under voltage protection parameters are set correctly 3. Measure whether the channel has voltage output at the moment of startup
3	Temperature is too high	<ol style="list-style-type: none"> 1. Check whether the channel box fan is running 2. Whether the ambient temperature is too high 3. Check whether the temperature display value of the alarm channel is normal
4	Self-test abnormal	In shutdown state, disconnect the channel output line and measure the output voltage
5	Communication abnormal	<ol style="list-style-type: none"> 1. Check the CAN bus connection and check the wiring 2. Check whether the adjacent channel communication of the abnormal channel is normal
6	Over power	<ol style="list-style-type: none"> 1. For the 550W model, the output power exceeds 600W 2. For the 850W model, the output power exceeds 900W

Chapter 8 Maintenance and Care

Affected by many factors such as ambient temperature, humidity, dust, vibration and aging of digital PSU components, the LED power supply has hidden troubles. In order to ensure long-term and stable operation of the LED power supply, the LED power supply must be regularly maintained.

If the LED power supply is transported over long distances, check whether the components are intact and the screws are tight before using. During normal using, regularly clean the dust inside of the LED power supply and check if the screws are loose etc



inspection must be carried out by a professional technician and the input power supply should be cut off.

7.1 Daily Inspection and Maintenance

Through daily inspection and maintenance, you can find all kinds of abnormal conditions in time, find out the cause of the abnormality in time, eliminate the hidden troubles early, ensure the normal operation of the equipment, and extend the service life of the LED power supply. Please refer to the table below for daily inspection and maintenance.

Inspection and Maintenance Tip Sheet

Inspection object	Inspection cycle		Inspected contents	Discrimination standard
	Anytime	Regular		
Operating environment	√		Temp,humidity Dust, Moisture Gas	The LED power cover should be opened when the temp. is over 40°C, the humidity is below 90%, no frost No odor, no flammable, explosive gas
Cooling system		√	installation environment LED power body fan	the installation environment is well ventilated and the air duct is non blocking The fan runs normally without abnormal noise
LED power supply	√		Vibration temperature raise Noise Wires, terminals	Smooth vibration, normal air outlet temperature No abnormal noise, no smell The fastening screws are not loose
LED	√		1. Vibration,temperature raise 2. Noise	1.ooth operation and normal temperatur No abnormalities, uneven noise
Input,output parameters	√			1. input voltage is in the limits 2. The output current is below the rated value

7.2 Inspection and replacement of vulnerable parts

Some components in the LED power supply will wear out or degrade in performance during use. In order to ensure the stable and reliable operation of the LED power supply, preventive maintenance should be carried out on the LED power supply, and parts should be replaced when necessary.

7.2.1 Filter Capacitor

The pulsating current of the main circuit will affect the performance of the aluminum electrolytic filter capacitor. The degree of influence is related to the ambient temperature and operating conditions. Under normal conditions, the electrolytic capacitor should be replaced every 4 to 5 years for the LED power supply.

When the electrolyte of the electrolytic capacitor leaks, the safety valve pops out, or the capacitor body swells, it should be replaced immediately.

7.2.2 Cooling Fan

The service life of all cooling fans inside the LED power supply is about 15,000 hours (that is, the LED power supply has been used continuously for about two years). If the fan produces abnormal sound or vibration, it should be replaced immediately.

7.3 Storage

After the LED power supply is purchased, it will not be used temporarily or stored for a long time, and the following items should be paid attention to:

(1) The storage environment should comply with the table below:

Environmental Characteristics	Requirement	Remarks
Environmental Temperature	-20°C~60°C	Long-term storage temp. is not over 30°C, so as to avoid deterioration of capacitance characteristics, avoid condensation and freezing due to sudden temperature changes.
Relative Humidity	20~90%	Plastic film sealing and desiccant can be used
Storage Environment	No direct sunlight, no dust, no corrosive, flammable gas, no oil, steam, gas, dripping, vibration, less salt	

(2) If the LED power supply is not used for a long time, it should be powered once every half year to restore the characteristics of the filter capacitor and check other functions of the LED power supply. When power is on, the voltage should be gradually increased by an auto-transformer, and the power-on time should be over half an hour.

Attention!

- If the digital power supply is not used for a long time, the internal filter capacitor characteristics will decrease

7.4 Warranty

The company will provide repair services based on the following conditions:

(1) If the malfunction or damage occurs under normal use, the company provides free repair or replacement during the warranty period (within 12 months from the date of purchase). If it is over 12 months, reasonable repair fee will be charged.

(2) Even within the warranty period, certain maintenance cost should be charged for the failure caused by the following reasons:

- Faults caused by improper operation and not follow the operating manual or exceed the standard specifications.
- Faults caused by self-repair and modification without permission.
- Faults due to poor storage.
- Faults caused when LED power supply is used for abnormal functions.
- Machine damage caused by fire, salt erosion, gas corrosion, earthquakes, storms, floods, lightning, voltage abnormalities or other force majeure.
- Even if the warranty period is exceeded, the company also provides lifetime paid repair service.