

check

When you get a new DPH8900 series programmable high power power supply, it is recommended that you check the instrument as follows.

1. Check for damage caused by shipping.

If the packaging carton or bubble bag protection pad is found to be severely damaged, please keep it until the whole machine and accessories pass the test.

2. Check that the contents of the box are complete.

The contents of the box are as follows. If the content does not match or the instrument is damaged, please contact your dealer or the company.

Host: DPH8900 programmable high power power supply *1

Accessories: User Manual *1

Optional: Programmable power wireless remote control *1

5V USB transfer cable *1

User Manual *1

3. Check the whole machine.

If the instrument is found to be damaged, the instrument is not working properly, or fails the performance test, please contact your dealer or the company.

Product Description

The DPH8900 series power supplies are single output programmable high power switching power supplies, large output power, small size, beautifully structured. At the same time, it is equipped with TTL serial communication interface and RS485 communication interface, which provides serial communication protocol, it can also be applied to modbus-RTU communication protocol, supports user secondary development, can provide multi-purpose solution according to your design and testing requirements. DPH8900 series can be equipped with wireless remote control. The wireless controller adopts 2.4-inch LCD screen. It has rich display content, simple operation, built-in lithium battery, can be recharged, and it can control the switching power supply within 10 meters wirelessly . A wireless controller can control multiple switching power supplies simultaneously.

Modular power supply is applied in several aspects.

- a. power, mainly integrated and ammeter and smart meter, LED driver.
- b. industrial control.
- c. medical treatment, medical equipment, mainly include tyre protector, monitor and so on.
- d. military industry, military industry is a widely applied aspect, in military equipment.
- e. solar voltage regulation, battery charging and discharging.



Technical Parameters				
Model	DPH-8909	DPH8909-485	DPH-8920	DPH8920-485
Input voltage	20-110V	20-110V	20-110V	20-110V
Output voltage	0-96V	0-96V	0-96V	0-96V
Output Current	0-9.6A	0-9.6A	0-20A	0-20A
Output power	0-921.6W	0-921.6W	0-1920W	0-1920W
Communication interface	DPH-8909, DPH-8920: TTL serial communication interface DPH8909-485, DPH8920-485: 485 communication interface			
Voltage resolution	10mV			
Current resolution	1mA		10mA	
Output ripple	< 50mVpp			
Efficiency	92%			
Display accuracy	10mV, 1mA		10mV, 10mA	
Output tolerance	Voltage: $\pm 2\%$ +1digit, Current: $\pm 5\%$ +digit			
Response time	< 50ms			
Dimension	150*120*59mm			
Applied ambient temperature	-25-60°C			

【 Switching power supply instructions 】

The following description uses the DPH8920 as an example. The DPH8909 operates in the same way as the DPH8920. The difference is in the current display. The DPH8909 currents display three decimal places such as: 3.000, and the DPH8920 currents display two decimal places such as 03.00.

Module Description



Figure 2-1 DPH8900 series digital power supply module description
(DPH8909/DPH8920)

Label	Description	Label	Description
①	Power Switch	⑥	Working status indicator
②	Negative Input	⑦	Positive Output
③	Positive Input	⑧	Negative Output
④	LED digital tube	⑨	Communication Interface
⑤	Fan	⑩	Function button

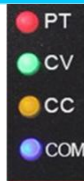
Table 2-2 DPH8900 series digital power supply module description

Display Description

Display	Display content	Display	Display content
0500 0300	Represents the voltage value,00.00 represents the current value	4-Fd -- 1	Fast discharge on
1-5A _ 10 _	Voltage and current upper limit setting	5-CS -- 0	Simple communication pro
1-5A _ 11 _	Voltage and current lower limit setting	5-CS -- 1	Modbus communication pro
1-5A _ 12 _	Cancel the upper and lower limits of voltage current	6-bd 0096	Select 2.4、4.8、9.6、19.2、38.4、57.6 as the baud 115.2 units (Kbps)
2-df -- n _	Restore factory settings no	7-Ad _ 0 1 _	01 communication addre communication address 01-total of 99 communication addresses
2-df -- y _	Restore factory settings yes	8-CH _ 0 1 _	Channel 01, a total of 31 communication channels from 00 to 30, 00 means no match with any wireless controller
2-df -- y _	Restore factory settings	-Ld- -- 0 _	Recall a parameter in stlocation 0-9,1 indicate first group
3-on -- 0 _	Power on status off	-5A- -- 0 _	Save the parameters to storage location in stolocations 0-9,1 for the group
3-on -- 1 _	Power on status on	Corr	Voltage and current calibration
4-Fd -- 0 _	Fast discharge off	-oC- 0280	Temperature display

Table 2-2 Display description of DPH8900 series power supply

Indicator Description



PT: Overheat protection indicator, when the temperature is greater than 80 °C, the PT light is on to indicate overheat protection.

CV: Constant voltage indicator, CV indicator light indicates constant voltage output.

CC: Constant current indicator, CC indicator light indicates constant current output.

COM: Communication indicator, when there is an instruction input, the COM light will be on, indicating communicating.

Operating Instructions

First, the use of voltage and current adjustment and shutdown output instructions

Connect the input and output correctly to ensure that the input voltage is within the required range. Reverse connection is strictly prohibited. The input voltage must be higher than the output voltage by more than 0.5V.

Note: Input voltage range: 10V~75V;

Output current range: 0~16A (DPM-8616), 0~24A (DPM-8624);

Output voltage range: 0~60V.

2. Set the required voltage and current values. It should be noted that the "V" digital tube displays the voltage, the "A" digital tube displays the current, the decimal point of the voltage display value is in the second position (such as 00.00), and the decimal point of the current display value is in the first position (such as 0.000). After the setting is completed, press OK to turn on the output. At this time, the CV or CC light is on to indicate that the output state is turned on. The method of setting the voltage and current value is as

follows (blue indicates digital flashing):



The default setting is 5V, 3A.

Short press, a certain value flashes.

Short press many times, the flashing bit will move at different bits of voltage and current.



As the load current reaches the set current, the output is the set current, constant current output, CC light is on.

Press to turn the output on and off, as the load current is less than the set current, the output is constant voltage output, and the CV light is on.

The value can be change the value by pressing, and for example, adjust 12V, 5A, press the button to exit the adjustment state.

Save and Load function instructions

Press the up or down button on the voltage and current display interface to enter the save and load function, as well as the temperature display and calibration functions.

The specific operations are as follows:

Press to switch to the below interface.



Press to switch to the below interface.



Press to load settings of M0.or press to enter next interface.



Press to adjust to M3, press OK to load settings of M3.



Press to load settings of M9.or press to enter next interface.



Press the button to save to M0.or press to enter next interface.



Press to adjust to M3, press OK to save 12V, 5A to M3.



Press the button to save to M9.or Press to enter next interface.



Press to return main interface,or press to calibrate the display data. For details of the calibration, please see the function description below.



Press to exit the temperature display interface.

Corr calibration function introduction

1. When the set voltage is greater than 20V, for example, 25V is set as the output voltage, but the load is not connected, the display voltage of 25V and the current of zero point (that is, the current is calibrated to zero) are calibrated.
2. When the output is turned off, the display voltage of zero and the display current of zero are calibrated.
3. When the output is short-circuited and the current output is greater than 2A, for example, setting the current output as 3A, the calibration current value of 3A is calibrated.

Temperature display and fan speed introduction

The temperature is displayed as the temperature of the instrument, which can control the fan speed and over-temperature protection. When the temperature is greater than 40 °C, the fan starts working, and the fan speed increases by 1 level for every 5 °C increase. When the temperature reaches 60 °C, the fan rotates at maximum wind speed, when the temperature is greater than 80 °C, the product over temperature protection automatically turns off the output.

SET function setting operation instructions

Long press **SET** button can enter the SET function setting, then short press **SET** button can be switched in 1-SA, 2-dF, 3-on, 4-Fd, 5-CS, 6-bd, 7-Ad, etc., and then in each function interface. In each function interface, you can change the sub-options in each function setting by pressing the **▲**, **▼** keys, and press the **OK** button to confirm the setting.

For details on the interface display, please refer to the table below.

Examples are as follows:



Default interface.



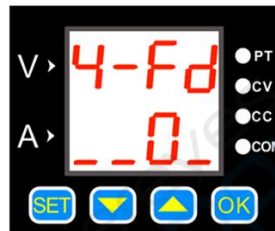
Long press to enter the voltage and current upper and lower limit save interface, change the sub-option by pressing and , 10 means the current voltage and current value is set to the upper limit, 11 means to set the lower limit, 12 means to cancel the upper and lower limit. Press and the setting is successful.



Short press to enter the factory reset interface, press and to change the sub-option, N means "no", Y means "yes", then press OK, the setting is successful.



Short press to enter the communication protocol selection interface, and the sub-option is changed by pressing and . 0 means "simple communication protocol", 1 means "MODBUS-RTU communication protocol", then press OK button, the setting is successful.



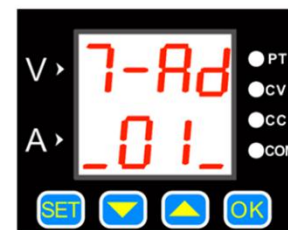
Short press to enter the fast response interface, and the sub-option is changed by pressing and . 0 means "slow", 1 means "fast", then press OK, the setting is successful.



Short press to enter the power-on default output status interface, change the sub-option by pressing and , 0 means "off", 1 means "on", then press OK, the setting is successful.



Short press to enter the baud rates selection interface, a total of 7 groups of baud rate, the unit is kbps, change the baud rates by pressing and , and then press the OK button, the setting is successful.



Short press to enter the local address selection interface, there are 99 groups of 01-99 communication address, change the communication address by pressing and , and then press the OK and the setting is successful.

Introduction of voltage and current upper and lower limits:

The upper and lower limits of the voltage and current are set voltage upper limit adjustment limits and lower limit adjustment limits. For example: set 30V, 5A in the main interface, enter the voltage and current upper limit save position, press OK to save it as the upper limit of voltage and current, and the product's voltage adjustment range is up to 30V, the maximum current is 5A. The same method can also set the lower limit of adjustment.

Communication protocol function:

There are two kinds of communication protocols: simple communication protocol and MODBUS communication protocol, which can be selected on the product. We can provide communication protocols.

Simple communication protocol is our custom communication protocol, it is easy to understand.

MODBUS communication protocol is the standard MODBUS communication protocol.

Quick response function introduction:

After the quick response is turned on, the response time is short when the voltage is adjusted from high to low. For example, when the output is 30V, adjust it directly to the output of 5V. When the quick response is not turned on, it takes 5 seconds to reduce from 30V to 5V. After turning on the quick discharge, it takes less than 1 second to reduce from 30V to 5V.

Power-on default status setting introduction:

The default state of power-on refers to whether the output is turned on or off by default when the power is turned on. When this function is enabled, after the power is turned on, the output voltage and current values are directly turned on without operating.

Key locking function

Long press OK key can press key lock, when key lock state long press OK key can cancel keystroke lock

【 Wireless controller instructions 】

The wireless controller uses a 2.4G frequency RF module to transmit signals wirelessly with the power supply, up to 10 meters remote control. The wireless controller has a built-in 3.7V, 2000mA lithium battery that can be recharged. It can be used for more than 10 hours at full power. The wireless controller adopts a 2.4-inch TFT liquid crystal display with rich display content. With multi-function buttons and knobs, it can be quickly set and adjusted, and the operation is simple and fast.

Technical Parameters	
Item	Details
Wireless transmission method	Radio frequency transmission
Wireless distance	10 meters (no obstacles)
Communication address	00-99
Communication channel	00-30
Wireless frequency	2.4G
Display mode	2.4 inch TFT LCD
Rechargeable battery	3.7V/2000mA
Size	120*80*25mm

Module Description

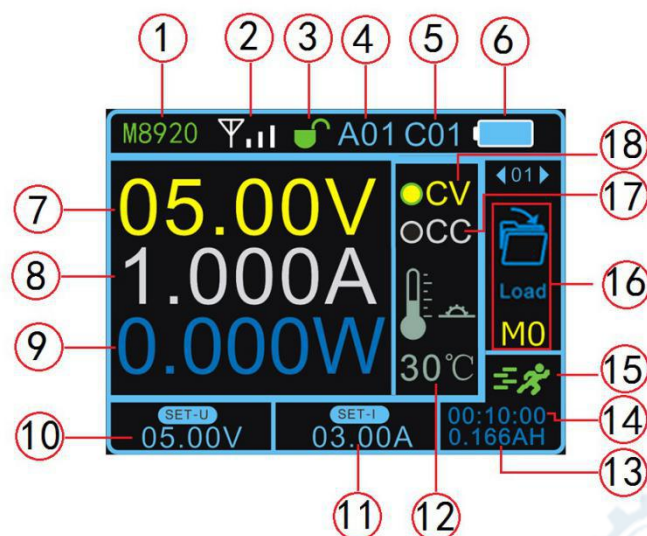


Figure 1-1 Description of the wireless control panel structure



Figure 1-2 Wireless Controller Interface Description

Display Description



Label	Description	Label	Description
1	Product model	2	Signal indication
3	Key lock	4	Address 01-99
5	Channel 01-30	6	Battery Capacity
7	Output voltage	8	Output current
9	Output powe	10	Voltage setting
11	Current setting	12	Temperature display
13	Capacity	14	Running time
15	Operating status	16	Function bar
17	Constant current indicator	18	Constant voltage indicator

Operating Instructions

Operating Instructions

1. Voltage and current setting and on/off output: Press button V, the cursor

appears at the voltage setting, rotate the knob to change the value, and the left and right buttons can change the step value. Press button A, the cursor appears at the current setting, the knob can be rotated to change the value, and the left and right buttons can change the step value. Press OK to turn the output on or off.

The voltage and current setting display interface is as follows:



Boot default
connection status

Voltage setting state

Current setting
state

The output status interface is as follows:



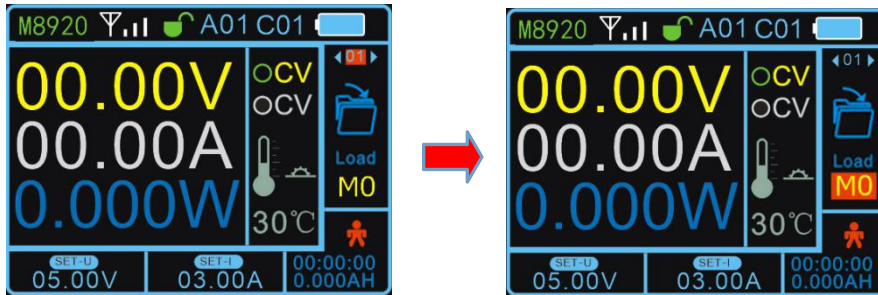
When the constant voltage output is 5V, 1A, and the load current is less than the set current, the output is constant voltage output, and the CV light is on.

When the load current reaches the set current, the output is the set current, the constant current is output, and the CC light is on.

2. Function setting: Press SET button on the main interface to display the position in function option box 01. Press left or right button or rotate knob to select recall, save, clear, address, channel, quick response, auto output, upper limit setting, lower Line setting, limit reset, brightness, auto power off, language, factory reset, about 15 function settings, press OK to enter its function settings, press left or right button or rotate knob to change

parameters, then press OK, the setting is successful.

Examples of the function setting display interface are as follows:



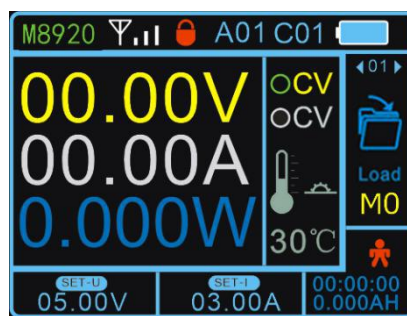
Press the SET button and the cursor will appear in the function box position.

Press the OK button to enter the function adjustment and change the parameters with the left and right buttons or knob.

3. Quickly load: Press M1, M2, M3, M4 to quickly load the data in M1, M2, M3, M4 storage locations.

4. Key lock: Press and hold the SET button to lock the button. When you press and hold the SET button again, the button can be unlocked. After the button is locked, the button lock on the display will turn into a red lock state, indicating that the button is locked.

The key lock display interface is as follows:



Key lock status

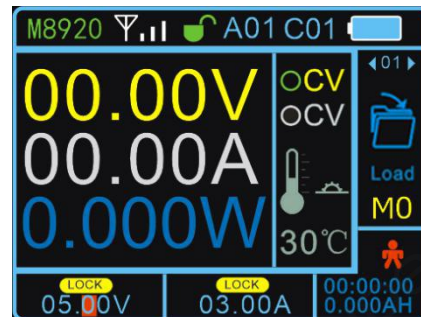
— .Upper and lower limit setting: After setting the voltage and current, select the upper or lower limit in the function and save it, you can set the current voltage and current value as the upper limit or lower limit. The upper limit is

displayed as MAX and the lower limit is displayed as MIN. If the upper and lower limits are the same value, the display is LOCK. To cancel the limit, select the limit reset function.

Upper and lower limit display interface:



When the adjustment voltage and current reach the upper limit, it is displayed as MAX.



The upper limit value is the same as the lower limit value and it is displayed as LOCK.

Function Detailed Explanation

Number	Items	Details
1	Load	Load the parameters of a position of M1-M9.
2	Save	Save the parameters to a location in the M1-M9 storage location.
3	Clear	Working hours and ampere hours are cleared.
4	Address	The address (there are 99 addresses of 01-99), different addresses represent different host power supplies, and one-to-many control display is possible.
5	Channel	Channel (with 01-30 total 30 addresses), different channels represent different host power supplies, and which can perform one-to-many control display. The host address is set to 00, meaning it is not controlled by any wireless controller.

Number	Items	Details
6	Quick response	After the quick discharge is turned on, the response time of the voltage from high to low is relatively short.
7	Automatic output	After the automatic output is turned on, the output will be automatically turned on when the power is turned on. ON (on), OFF (off).
8	Upper limit setting	Set a parameter in the set voltage and current box to enter the upper limit setting function. Press OK to indicate that the setting is successful. After the setting is successful, when the upper limit is adjusted, the setting area will display MAX, indicating that the upper limit has been reached.
9	Lower limit setting	Set a certain parameter in the set voltage and current box, enter the lower limit setting function, press OK to indicate that the setting is successful. After the setting is successful, when the lower limit is adjusted, the setting area will display MAX, indicating that the lower limit has been reached.
10	Limit reset	Cancel the upper and lower limit settings
11	Brightness	The brightness adjustment range is from 1% to 100%.
12	Automatic shut-down	The time adjustment is up to 30 minutes, the adjustment step value is 10 seconds, and the setting is 0 seconds, indicating constant light. After the screen is off, press the power button to turn it on.
13	Language	The language is available in both Chinese and English.
14	Reset	The factory settings of the wireless controller can be restored, but the factory settings of the power supply cannot be restored.
15	About	Display product model and our company website, you can view product information and download data.

