OWH80 Series Single-Channel Programmable DC Power Supply User Manual

For product support, visit:www.owon.com.hk/download

※：The illustrations, interface, icons and characters in the user manual may be slightly different from the actual product. Please refer to the actual product.

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General Warranty

We warrant that the product will be free from defects in materials and workmanship for a period of 2 years from the date of purchase of the product by the original purchaser from our company. The warranty period for accessories such as probes, battery is 12 months. This warranty only applies to the original purchaser and is not transferable to a third party.

If the product proves defective during the warranty period, we will either repair the defective product without charge for parts and labour, or will provide a replacement in exchange for the defective product. Parts, modules and replacement products used by our company for warranty work may be new or reconditioned like new. All replaced parts, modules and products become the property of our company.

In order to obtain service under this warranty, the customer must notify our company of the defect before the expiration of the warranty period. Customer shall be responsible for packaging and shipping the defective product to the designated service centre, a copy of the customers proof of purchase is also required.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. We shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than our company representatives to install, repair or service the product; b) to repair damage resulting from improper use or connection to incompatible equipment; c) to repair any damage or malfunction caused by the use of not our supplies; or d) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

Please contact the nearest Sales and Service Offices for services.

Excepting the after-sales services provided in this summary or the applicable warranty statements, we will not offer any guarantee for maintenance definitely declared or hinted, including but not limited to the implied guarantee for marketability and special-purpose acceptability. We should not take any responsibilities for any indirect, special or consequent damages.

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1. General Safety Requirement

Before any operations, please read the following safety precautions to avoid any possible bodily injury and prevent this product or any other products connected from damage. In order to avoid any contingent danger, this product is only used within the range specified.

Only the qualified technicians can implement the maintenance.

To avoid Fire or Personal Injury:

Use Proper Power Cord. Use only the power cord supplied with the product and certified to use in your country.

Product Grounded. This instrument is grounded through the power cord grounding conductor. To avoid electric shock, the grounding conductor must be grounded. The product must be grounded properly before any connection with its input or output terminal.

Limit operation to the specified measurement category, voltage, or amperage ratings.

Check all Terminal Ratings. To avoid fire or shock hazard, check all ratings and markers on the instrument. Refer to the user's manual for more information about ratings before connecting the instrument. Do not exceed any of ratings defined in the following section.

Do not operate without covers. Do not operate the instrument with covers or panels removed.

Use Proper Fuse. Use only the specified type and rating fuse for this instrument.

Avoid exposed circuit. Do not touch exposed junctions and components when the instrument is powered.

Do not operate if in any doubt. If you suspect damage occurs to the instrument, have it inspected by qualified service personnel before further operations.

Use your instrument in a well-ventilated area. Inadequate ventilation may cause an increasing of temperature or damages to the instrument. Please keep the instrument well ventilated, and inspect the air outlet and the fan regularly.

Do not operate in wet conditions. To avoid short circuit inside the

instrument or electric shock, never operate the instrument in a humid environment.

Do not operate in an explosive atmosphere. In order to avoid damages to the device or personal injuries, it is important to operate the device away from an explosive atmosphere.

Keep instrument surfaces clean and dry. To avoid the influence of dust or moisture in air, please keep the surface of device clean and dry.

2. Safety Terms and Symbols

Safety Terms

Terms in this Manual. The following terms may appear in this manual:

Warning: Warning indicates the conditions or practices that could result in injury or loss of life.

Caution: Caution indicates the conditions or practices that could result in damage to this product or other property.

Terms on the Product. The following terms may appear on this product:

Danger: It indicates an injury or hazard may immediately happen.

Warning: It indicates an injury or hazard may be accessible potentially.

Caution: It indicates a potential damage to the instrument or other property might occur.

Safety Symbols

Symbols on the Product. The following symbol may appear on the product:

Hazardous Voltage

Refer to Manual

Protective Earth Terminal

Chassis Ground

Public Ground

3. Quick Start

3.1 Front Panel and Interface

3.1.1 Front Panel

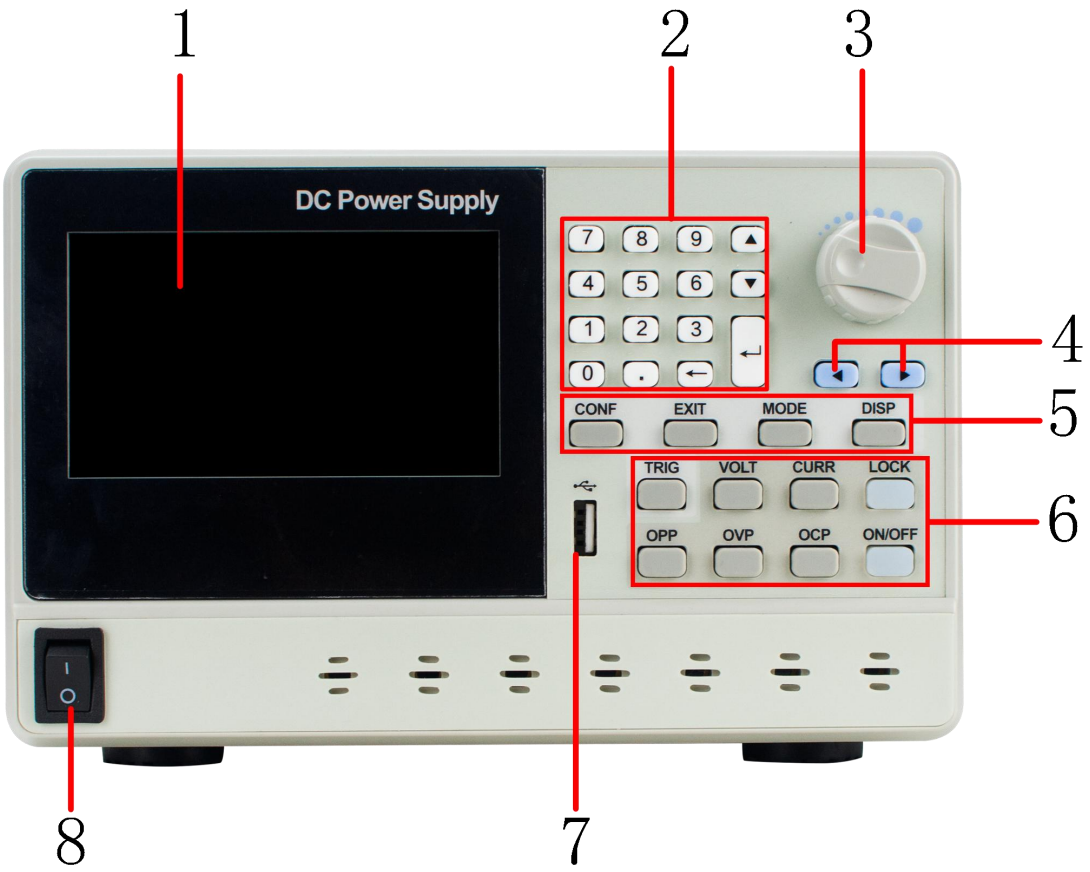


Figure 3- 1 Front panel overview

1	**Display Screen**	TFT color display showing output settings and real-time measurement values.
2	**0-9 and .** ← ↵	Numeric and decimal input keys for data entry. ←: Navigation key to cancel current operation or return to the previous screen. ↵: Confirms parameter input.

3	**Rotary Knob**	Allows users to scroll through options or adjust numerical values during parameter setting.
4	**< >**	Used to move the cursor left or right to the desired digit or parameter position.
5	**System Function Keys**	● **CONF**: Opens the configuration page for system function settings. ● **EXIT:** Exits to the previous screen. ● **MODE:** Quick access to operation mode selection. ● **DISP:** Switches between numerical output display and waveform display.
6	**Function Keys**	● **TRIG:** Manual trigger function. ● **VOLT:** Voltage setting key; press to enter voltage setting mode and adjust using numeric keys or rotary knob. ● **CURR:** Current setting key; press to enter current setting mode and adjust using numeric keys or rotary knob. ● **LOCK:** Locks all buttons and the rotary knob; press and hold to unlock. ● **OPP:** Over Power Protection setting. ● **OVP:** Over Voltage Protection setting. ● **OCP:** Over Current Protection setting. ● **ON/OFF:** Toggles output state (ON or OFF).
7	**USB**	USB data interface for communication or firmware update.
8	**Power Switch**	Mechanical switch to power the device ON or OFF.

3.1.2 Rear Panel

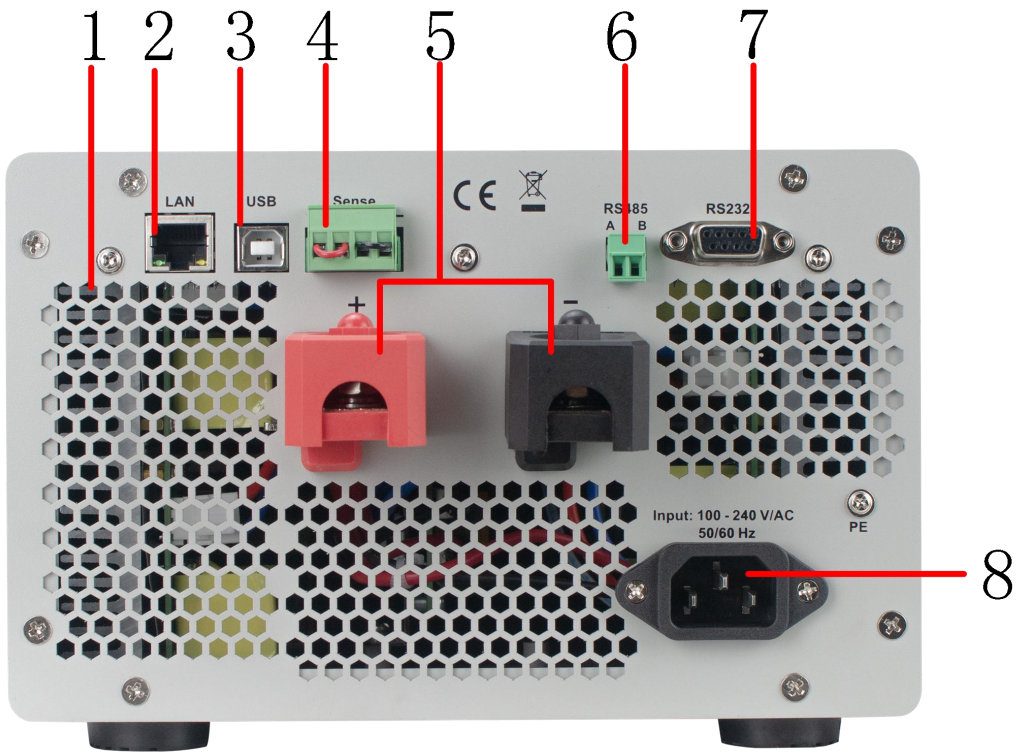


Figure 3- 2 Rear panel overview

1	**Fan Air Outlet**	Do not block the air outlet. Obstruction may cause inadequate internal cooling, leading to overheating and potential damage.
2	**LAN Port**	Ethernet communication interface for remote control. Connects the unit to a PC or network for remote operation.
3	**USB Serial Port**	USB communication port for connecting the device to a computer.
4	**Remote Sense Terminals**	Voltage sensing terminals used to compensate for voltage drop across output cables. Ensure **Sense+** is connected to output **+**, and **Sense-** to output **-**. Do not reverse or leave the terminals open.
5	**DC Output Terminal (+)**	Positive output terminal for DC power delivery.

6	**RS-485 Interface**	RS-485 communication port.
7	**DB9 Port**	DB9 serial interface supporting RS-232 communication protocol.
8	**AC Power Input Terminal**	AC input terminal for connecting the power cord to the device's input supply.

3.1.3 User Interface

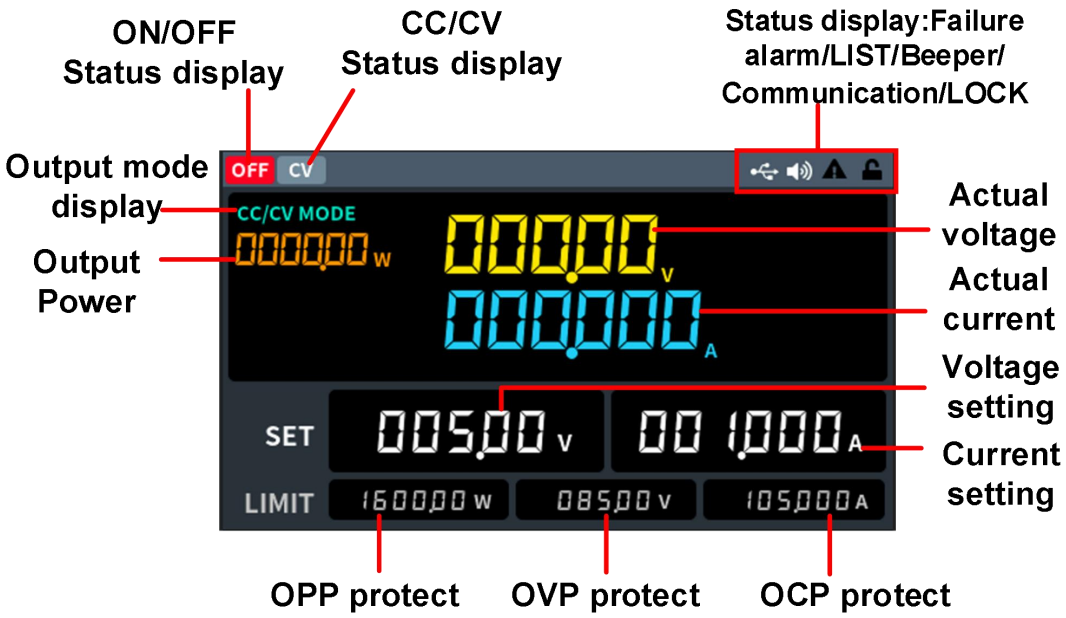


Figure 3-3 User interface

Status Icon

Icon	Description
	The panel keys are locked
	Panel USB data cable is transmitting
	Enable beeper
	Enable LIST function
	Record status
	A failure alarm

3.2 General Inspection

After you get a new DC power supply, it is recommended that you should make a check on the instrument according to the following steps:

1.Check whether there is any damage caused by transportation.

If it is found that the packaging carton or the foamed plastic protection cushion has suffered serious damage, do not throw it away first till the complete device and its accessories succeed in the electrical and mechanical property tests.

2. Check the Accessories.

The supplied accessories have been already described in Appendix A: Accessories of this manual. You can check whether there is any loss of accessories with reference to this description. If it is found that there is any accessory lost or damaged, please get in touch with our distributor responsible for this service or our local offices.

3． Check the Complete Instrument.

If it is found that there is damage on the first appearance of the instrument, or the instrument cannot work normally, or fails in the performance test, please get in touch with our distributor responsible for this business or our local offices. If there is damage to the instrument caused by the transportation, please keep the package. With the transportation department or our distributor responsible for this business informed about it, a repairing or replacement of the instrument will be arranged by us.

3.3 Power-on Inspection

(1) Connect the instrument to an AC power source using the power cord supplied with the accessory.

Warning:

To prevent electric shock, make sure the instrument is properly grounded.

(2) Press the **power button** on the front panel and the startup screen will be displayed on the screen.

3.4 Output Inspection

(3) Output inspection is to ensure that the instrument can achieve its rated outputs and properly respond to operation from the front panel.

> ⚠ **Warning:**
>
> Please verify the voltage withstand and polarity requirements of the instrument's output terminals and remote sensing connections. Do not reverse the +/- connections or exceed the rated output voltage, as improper operation may result in fatal injury or equipment damage.

3.4.1 Voltage Output Inspection

The following steps verify basic voltage functions without load:

(1) When the instrument is under no load, select a channel and ensure the output current setting for this channel is not at zero.

(2) Turn on the channel output, then ensure the channel is in Constant Voltage output mode.

(3) Set some different voltage values on this channel; check if the actual voltage value displayed is close to the set voltage value, and also that the actual current value displayed is nearly to zero.

(4) Check if the output voltage can be adjusted from zero to the maximum rating.

3.4.2 Current Output Inspection

The following steps check basic current functions to directly short the output two terminals:

(1) Starting up.

(2) Connect a short across (+) and (-) output terminals with an insulated test

lead on this channel. Use a wire size sufficient to handle the maximum current.

(3) Set the output voltage to the maximum rating on this channel.

(4) Turn on the channel output. Ensure the channel you used is in Constant Current output mode.

(5) Set some different current values on this channel; check if the actual current value displayed is close to the set current value, and to check if the actual voltage value displayed is nearly zero.

(6) Check that if the output current can be adjusted from zero to the maximum rating.

(7) Turn off the channel output and remove the short circuit from the output terminals.

4. Functional features and Panel operation

This chapter will describe OWH program power supply function feature and panel operations in details,it will be divided into the following sections:

- Turn on/off channel output
- Local/Remote mode operation switch
- Output voltage/current setting
- Adjust output voltage/current and power value
- System menu function
- Waveform display function
- Remote measurement function

4.1 Turn On/Off the Channel Output

Press the **ON/OFF** key to turn on/off the channel. When the **ON/OFF** key is bright, the output is turned ON; when the **ON/OFF** key light is off, the output is turned off. When the power is turned on, the panel defaults to the main interface to display the current state.

Description:

After the power supply is connected with the object to be tested, press the **ON/OFF** key to open the output to avoid the possible ignition phenomenon. If there is no power output after the output is turned on, please check the voltage and current setting value, please set the voltage and current is according the setting values and not 0 value,and then turn on the output.

4.2 Local/Remote mode Operation switch

The power supply provides both local and remote operation mode, and the two modes can be switched by communication commands. In power initialization mode, the machine is operated locally by default.

- Local operation mode: Use the keys on the panel to perform relevant operations.
- Remote operation mode: The power supply is connected to the PC, and

the PC performs relevant operations on the power supply. When the power is in remote mode, all the buttons in the panel do not work except for the LOCK key. You can switch to local operation mode by press and hold **LOCK** key. When the operation mode is changed, it will not affect the output parameters of the power supply.

4.3 Output Voltage/Current Setting

4.3.1 Set the Output Voltage/Current

There are two ways to set the output voltage (CV mode):

Mode one:

1. Press **VOLT** key, at this time, the voltage number of the user interface will display cursor.
2. Use the numeric **0-9** softkey to set desired voltage. Press ↵ key to save voltage setting, or turn the **knob** to adjust directly to the set value.
3. Press **ON/OFF** key to output the setting voltage.

Mode two:

1. Press **VOLT** , at this time, the voltage number of the user interface will display cursor.
2. Use the left and right direction function keys to move the cursor to different bits, and turn the **knob** to increase or decrease the value.
3. Press **ON/OFF** key to output the setting voltage.

Note: The current setting must be greater than the load current to maintain the output in CV mode, otherwise the output voltage may not be equal to the set voltage.

Set the current (CC MODE) as follows:

Press **CURR** key, the rest of the settings are the same as the voltage setting. Note that the voltage setting must be greater than the load voltage to maintain the output in CC mode, otherwise the output current will not equal the set

current.

4.4 Adjust Output Voltage/Current and Power

The output voltage and load resistance of the programmable power supply determine the output current. For example: “4.3 Output Voltage/Current Setting”, only when the output current is lower than the set current limit value, the product is operated in constant voltage CV mode and is indicated by CV status.

If the output current is limited by the current set point or rated current, the product will be converted to constant current mode CC and indicated by CC status.

The output of voltage and current is also controlled by the limit power, because the voltage and current and the power limit affect each other, take OWH80120(80V/120A/1800W) as an example, when the voltage is set to 40V, the maximum current can only be set to 50A due to the power limitation; when the voltage value is set to 80V, the current can only be set to 25A due to the power limitation.

4.5 System menu function

System function Settings provide users with various system function Settings for OWH series program power supply. The system functions include the following:

1. SYSTEM SETUP
2. MODE SETUP
3. OUTPUT SETUP
4. PROTECT SETUP
5. REMOTE SETUP
6. SYSTEM INFO
7. FAULT INFO

Detailed operation steps:

Press **CONF** key to enter “Function menu” options setting.

1. Turn the **knob** to select desired setting item.
2. Press ↵ to confirm.
3. Press **EXIT** or **CONF** to return CONFIG PAGE.

Note:

1. If want to cancel setting, press **EXIT** to return the CONFIG PAGE.

2. Press **VOLT** or **CURR** from any setting page to quickly navigate back to the CONFIG PAGE.

Menu as shown below:

Menu	Setting	Description	
SYSTEM SETUP	LANGUAGE	CHINESE/ENGLISH	
	KEY BEEP	ON/OFF	
	ALARM	ON/OFF	
	DATE	Year / Month / Day	
	TIME	Hour / Minute / Second	
	BACKLIGHT	10% – 100%	
	USB RECORDING	Recording length (Hour)	
		USB Logging Interval (Seconds)	
	USB UPDATE	Firmware upgrade	
	RESTORE FACTORY	ENTER/CANCEL	
	CALIBRATION	—	
MODE SETUP	CC / CV		
	LIST		
OUTPUT SETUP	CC / CV SETUP	Voltage Limit (MAX)	
		Current Limit (MAX)	
		Voltage Slew Rate	
		Current Slew Rate	
		CC / CV Priority	
	LIST SETUP	Edit List: Total Steps, Loop Count, Voltage (V), Current (A), Time (s), Step Add/Remove, Mode (Auto/Manual)	
		Import Data	
		Export Data	
PROTECTION	OVP	1–85 V (OWH80 series) 1–55 V (OWH50 series)	
	OCP	1–100 A (OWHx0100) 1–120 A (OWHx0120)	
	OPP	10 W – 1600 W (OWH80100) 10 W – 1900 W (OWH80120)	
REMOTE SETUP	USB (RS232)	Baud Rate	2400 – 115200 bps
	RS485	Baud Rate	2400 – 115200 bps

	LAN	DHCP	OFF/ON
		PROTOCOL	SCPI
		DEV.INFO.	IP add/gateway/subnet mask
SYSTEM INFO	Model, Firmware Version	Display model number, firmware version, etc.	

4.5.1 System setup

Select **SYSTEM SETUP**, press ↵ key to enter “SYSTEM SETUP” options setting, as shown in the below figure.

4.5.2 Mode setup

Select **MODE SETUP**, press ↵ key to enter “MODE” options setting, OWH series products support below two output modes.

- CC/CV MODE
- LIST MODE

The mode setting edit box can be determined by selecting any of the modes by the knob. After pressing **ON/OFF** key, the mode is locked and cannot be edited. If you need to change to another mode, you need to power off and re-select the corresponding mode.

4.5.3 Output setup

The mode setup is associated with the output setup. After selecting the output mode of the mode setting, it can be directly associated with the setting interface of the corresponding mode when clicking the output setting. For example, when the output mode is set to CC/CV mode, the mode in the upper right corner will change to CC/CV icon, and then click Output Settings to directly enter the CC/CV setting interface.

4.5.3.1 CC/CV Setup

CC/CV mode setup includes three parts:

- V SLEW RATE:

  Voltage slew rate range can be set from 0.02V/ms to 0.2V/ms.

- I SLEW RATE:

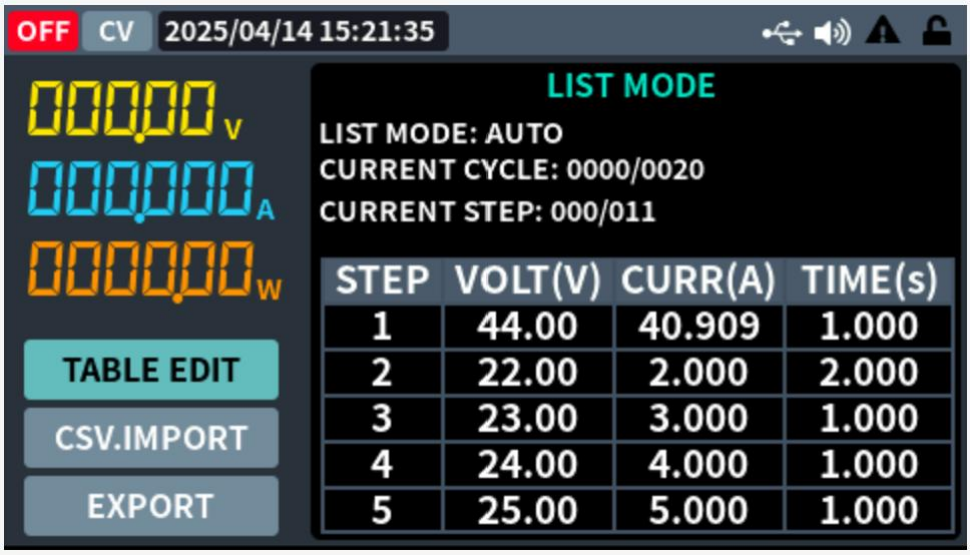
  Current slew rate range can be set from 0.02A/ms to 1A/ms.

- CC/CV PRIOR

  Mode set CV first (default), if the user knows in advance that the connected load characteristic, you can eliminate voltage/current overshoots when the output is turned on by switching the CV/CC priority mode.

4.5.3.2 LIST Setup

The LIST mode supports up to 100 programmable steps. Each step can be configured with a duration ranging from 1 second to 9999 seconds, or set to **INF** (infinite). LIST mode supports two operation modes: **Automatic Run** and **Manual Trigger**. The main interface of the LIST mode is shown below.



The interface consists of three functional modules:

Main module	**FUNCTION DESCRIPTION**
TABLE EDIT	Support total step/cycle setting, parameters(voltage/current/time), as well as row insertion and deletion
CSV. IMPORT	Supports importing a CSV file (compatible with Excel editing).
EXPORT	Allows exporting to a standard CSV file onto a USB drive. The file is auto-numbered (e.g., OWH000001.csv ~ OWH999999.csv).

Users can rotate the control knob to select one of the three modules and press ↵ to confirm and proceed. For example, to create a new programmable list, select **TABLE EDIT**.

TABLE EDIT DESCRIPTION:

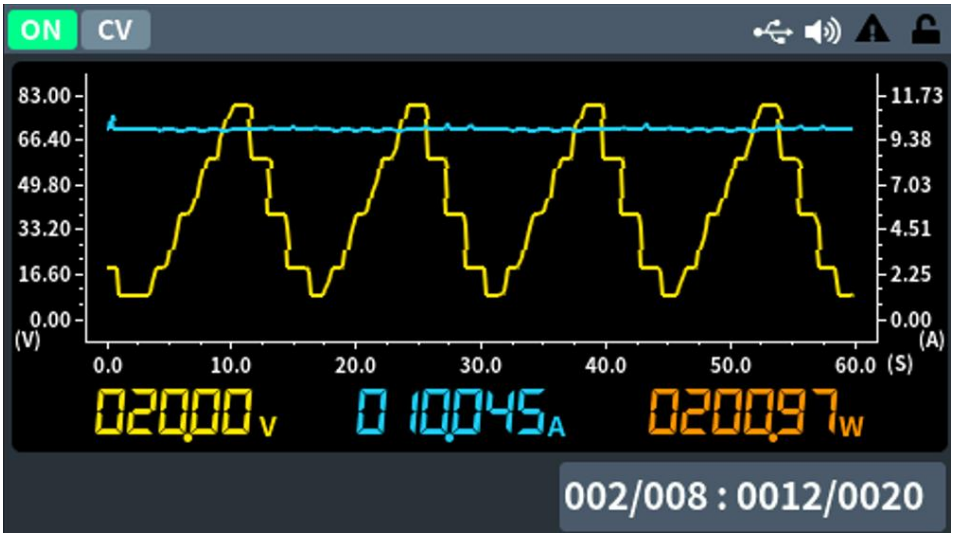
- Total steps: The total number of steps in the list can be set in the range of 1–100 steps. If the input exceeds this range, the system will default to a limit of 100 steps.
- Loop count: Supports setting the number of loop executions, with a range of 1–9999. When set to "0", the list will loop indefinitely.
- Operating modes:

  Auto mode: The list will automatically execute continuously according to the set parameter sequence.

  Manual mode: Each step requires pressing the TRIG key to execute the step-by-step process.
- Table edit range: Supports step-by-step editing of parameters in the list, including voltage, current, and duration, etc.

STEP	VOLT(V)	CURR(A)	TIME(s)	DELETE	INSERT
1	21.00	2.000	1.000	DEL	INS
2	22.00	2.000	2.000	DEL	INS
3	23.00	3.000	1.000	DEL	INS
4	24.00	4.000	1.000	DEL	INS
5	25.00	5.000	1.000	DEL	INS
6	26.00	5.000	1.000	DEL	INS

After the user has finished editing the LIST parameters, they can directly turn on the system using the **ON/OFF** button. The system will automatically load the curve and edit the curve, then switch to the LIST main page and start running the LIST curve. On the main page, the current voltage, current, current step/total steps, current loop count/total loop count, and the historical voltage and current curves will be displayed.



Users can also edit and save LIST sequences via **import** and **export** operations.

To import a LIST sequence:

1. Rotate the knob to select the Import option box.

2. Press the ↵ key to access the file management interface.

3. Use the **knob** to scroll and select the desired LIST file.

4. Press the ↵ key again to confirm the import.Once imported, the system will automatically return to the LIST setup interface, and the total number of steps, along with each step's voltage, current, and time parameters, will be loaded to the screen.

5. Press the **ON/OFF** button to activate the output. The system will issue the loaded LIST sequence to the power module and switch to the LIST operation interface for execution.

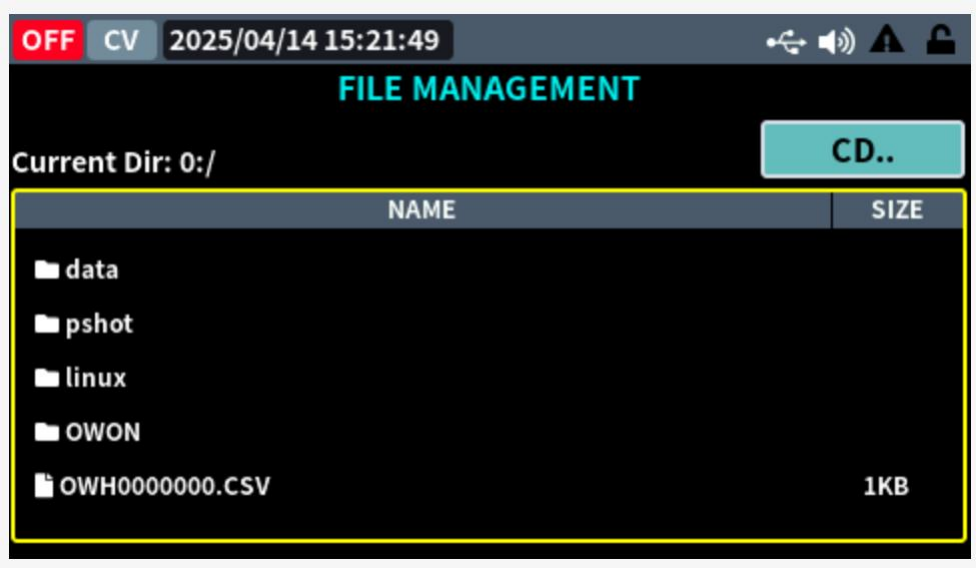
CSV File Format Definition

				Note
#TotalSteps	2			// Total number of steps
#Cycles	20			// Number of cycles
#Mode	Auto			// Run mode (Auto/Manual)
STEP	VOLT	CURR	TIME	// Voltage in V, current in A, time in seconds
#1	21	2	1	// Step 1
#2	22	2	2	// Step 2

Important notes:

1. Do not use Chinese characters or full-width symbols in the file.

2. When saving the file after editing with Excel, be sure to select **CSV UTF-8 (Comma delimited)** format.



To **export** a LIST sequence:

1. Rotate the **knob** to select the **Export** option box.

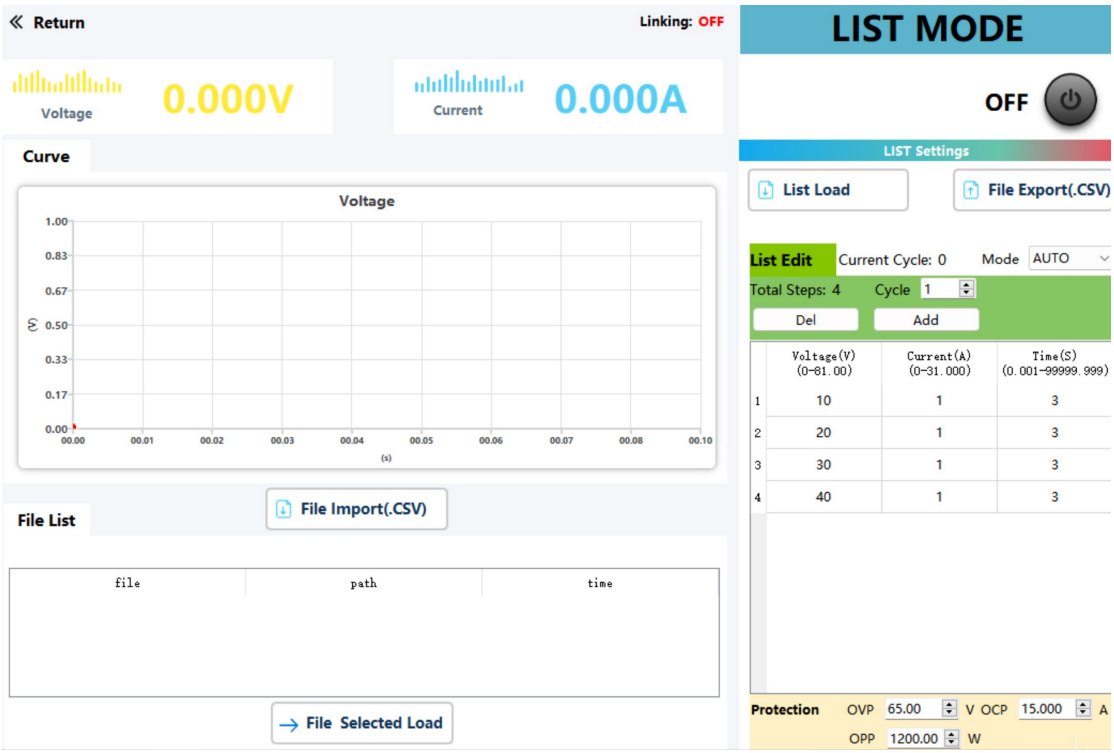
2. Press the ↵ key to navigate to the **file management** interface.

3. The system will automatically generate a file name based on the current timestamp.

4. After saving, press the **EXIT** key to exit the file management screen and return to the **LIST MODE Setup** interface.

If a large number of steps need to be edited, it is recommended that users perform the configuration via the PC software. Below is the main

interface of the LIST control software:

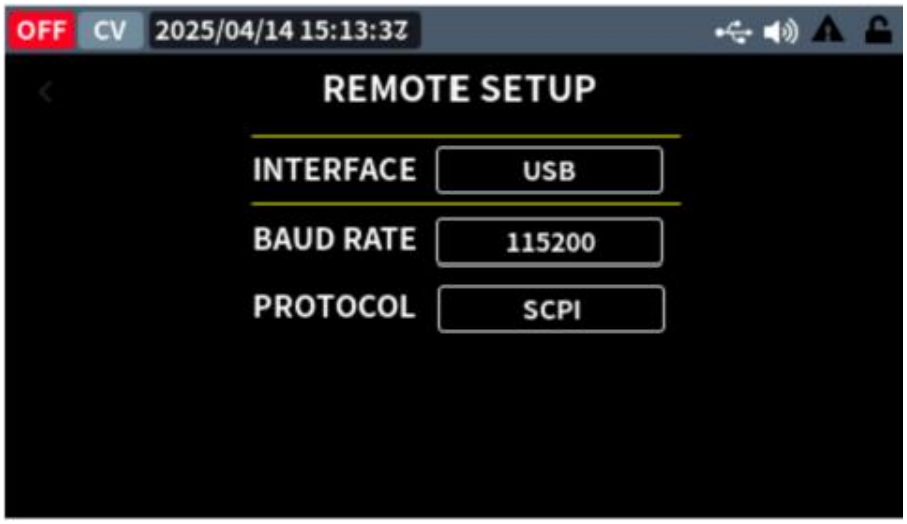


4.5.4 Protect Setup

Product can flexibly set OVP (Over-Voltage Protection), OCP (Over-Current Protection), OPP (Over Power Protection) functions according to user need. For example, OWH80120, OVP can be set to 1-85V, OCP can be set to 1A-121A, and OPP can be set to a minimum of 10W and a maximum of 1900W.

4.5.5 Remote Setup

Products are equipped with a variety of communication interface, USB serial port, RS485 and LAN functions. LAN function belongs to the optional, through the model suffix band L to make a distinction, if not clear, you can contact and ask the sales staff at any time.



RS485 is 2pin terminals: RS485_A, RS485_B.

RS232 is 9pins terminals:

Pin	Function definition
Pin 2	TXD
Pin 3	RXD
Pin 5	GND
Pin6,7	NC
Pin1,4,8,9	IO port(1: TRIGOUT+, 8: TRIGOUT-; 4: TRIGIN+, 9: TRIGIN-)

4.5.6 System Information

The screen displays the model, version, serial, and checksum of the machine.

4.5.7 Fault Information

The OWH80 series products continuously monitor the internal operating status of the device. Monitored items include system logic faults, internal power stage faults, output overvoltage/overcurrent protection, and more. In the event of a fault, a pop-up window will appear on the front panel, displaying detailed fault information along with corresponding fault prompts or **ERROR CODES**.

Fault Type	ERROR CODE	Fault Description
Internal Fault 1	0x0001	Internal LLC bus overvoltage
	0x0002	Internal LLC bus undervoltage
Internal Fault 2	0x0002	5V internal logic power supply abnormal
	0x0004	Over-temperature protection (heatsink temperature too high)
	0x0008	Internal overcurrent detected
	0x0010	Error in internal parameter storage
	0x0020	Firmware mismatch for the device model
Output Fault	0x0002	OVP: Output Overvoltage Protection
	0x0004	Remote sense abnormal (short-circuited or reversed)
	0x0008	OCP: Output Overcurrent Protection
	0x0010	OPP: Output Overpower Protection
	0x0020	Internal output overvoltage

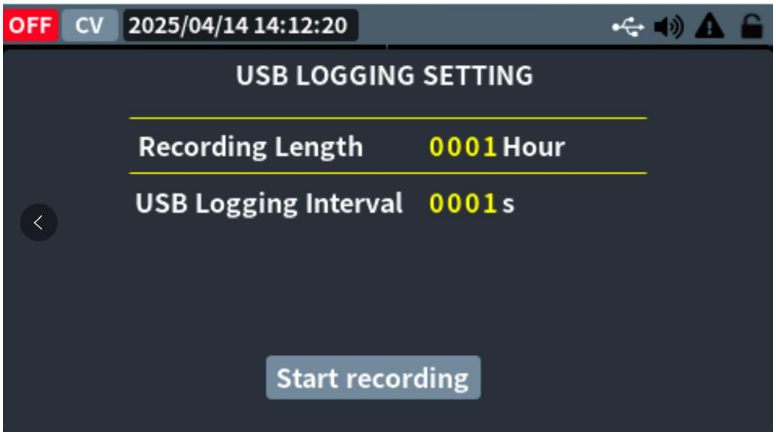
4.6 USB Screenshot and Recording Function

When the USB drive is inserted into the front panel, the electronic load will automatically recognize it and display a USB icon in the upper right corner of the screen, indicating that the USB drive has been successfully connected.

Supports screen capture functionality. By long-pressing the number key **0** (for about 2 seconds), the device will save the current screen image to the USB drive. Once the screenshot is successfully saved, a "Screenshot saved successfully" message will be displayed. Due to the large file size of screenshots, they can only be saved to a USB drive. After taking a screenshot, you can view the saved image on your computer by accessing the USB drive.

Supports online real-time voltage and current recording for extended periods,

accessible through System Settings -> USB Recording Settings. In the settings interface, you can configure the recording duration (up to 72 hours) and recording interval (minimum 1 second).



4.7 Waveform display Function

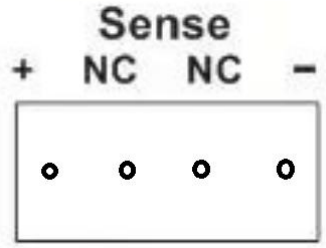
Product provides local waveform real-time visual display function, can visually read the current voltage and current and a period of time curve state.

Setting mode:

1. Press **DISP** to enter waveform display interface.
2. Press **DISP** again or press **EXIT** key to exit and return to the user interface.

4.8 Remote Voltage Sensing Function

When the power supply is in operation, large output currents or long connection cables can cause significant voltage drops across the wiring between the power supply terminals and the load. To ensure measurement accuracy, the power supply provides remote sensing terminals on the rear panel. These terminals allow users to measure the voltage directly at the load terminals.

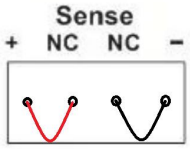


- PIN 1: Sense+ — Remote sensing positive terminal.
- PIN 2: NC — Not connected; must be shorted if remote sensing is not used.
- PIN 3: NC — Not connected.
- PIN 4: Sense− — Remote sensing negative terminal; must be shorted if remote sensing is not used.

Use local measurements:

Local sensing does not compensate for the voltage drop across the output wiring. Operate as follows:

1. Directly short PIN1 (+) and PIN2 (NC), and short PIN3 (NC) and PIN4 (–) on the Sense terminal.
2. Connect the positive and negative output terminals on the rear panel directly to the device under test using appropriate cables.



Use remote sensing measurements:

The remote sensing function allows compensation for voltage drops across the wires between the power supply output terminals and the device under test (DUT). Follow the steps below to operate:

1. Remove any jumpers or shorting clips from PINs 1, 2, 3, and 4 of the Sense terminal on the rear panel.
2. Connect a pair of sensing wires from **Sense PIN1 (+)** and **Sense PIN4**

(−) directly to the DUT.

3. Connect a pair of power supply wires from the **rear panel output terminals (+ and −)** to the DUT.

Note:

To ensure system stability, it is recommended to use shielded twisted pair cables for remote sensing between the OWH80 series power supply and the load. Please ensure correct polarity — incorrect wiring may lead to output faults or even damage to the instrument.

If the remote sensing function is not in use, do not leave the Sense terminals open. Improper termination may result in significant output voltage inaccuracy.

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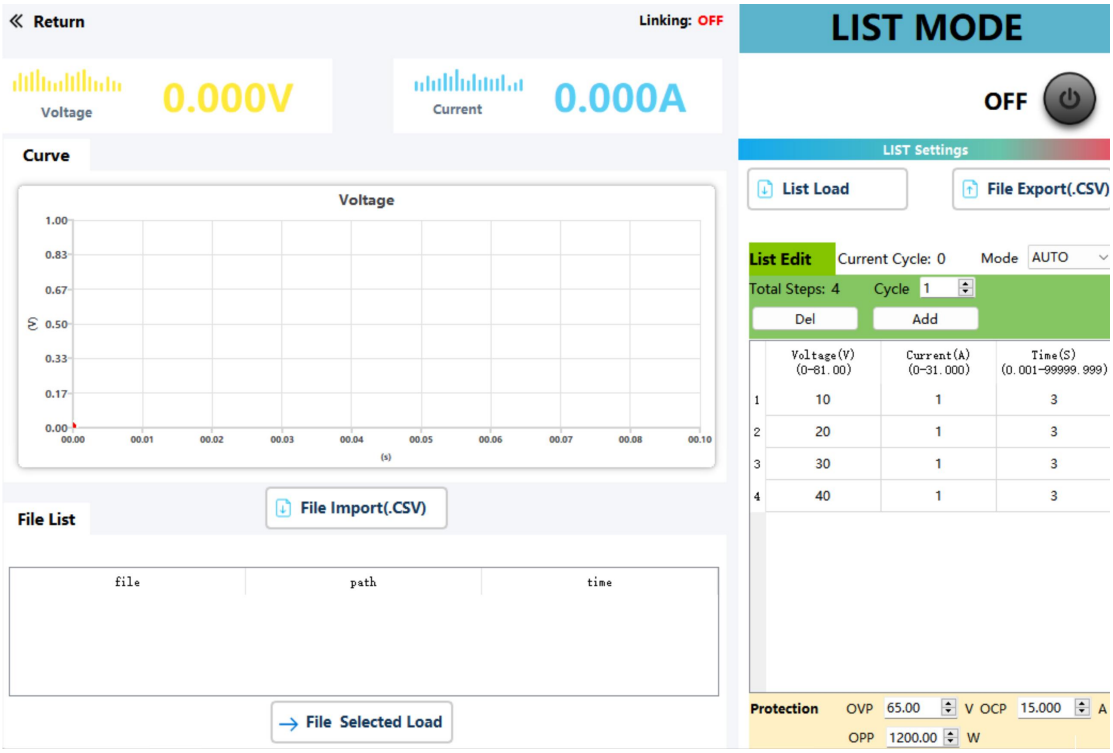
5. PC software introduction

1. Please go to the official website or contact your local dealer or our sales specialist to download or request the PC software.

2. Connect the USB CDC port on the back panel to the host computer. After the instrument is successfully connected, enter the mode setting to remotely operate the instrument.



6. Troubleshooting

1. The instrument is powered on but no display. Please following the steps:

- Check if the power is connected properly.
- Check if the fuse which is below the AC Power socket is used appropriately and in good condition (the cover can be pried open with a straight screwdriver).
- Restart the instrument after the steps above.
- If the problem still exists, please contact our customer service.

7. Technical Specification

The instrument must be operated continuously for more than 30 minutes at the specified operating temperature to achieve the following specifications

Model		OWH80120-1800 1ch	OWH8080-2000 1ch
Rated output (0℃-40℃)	Voltage	0-80V	0 -80V
	OVP	1V-85V	1V-85V
	Current	0-120A	0-80A
	OCP	1A-121A	1A-81A
	Power	1800W	2000W
Input power*	Volt/freq.	198V-240Vac*1; 45Hz-65Hz	198V-240Vac*1; 45Hz-65Hz
Load regulation (%of output+offset)	CV	≤0.03%+20mV	≤0.03%+20mV
	CC	≤0.05%+30mA	≤0.05%+30mA
Input power regulation (%of output+offset)	CV	≤0.03%+20mV	≤0.05%+20mV
	CC	≤0.05%+30mA	≤0.05%+30mA
Setting resolution	Voltage	10mV	10mV
	Current	1mA	1mA
Readback resolution	Voltage	1mV	1mV
	Current	1mA	1mA
Setting accuracy	Voltage	≤0.05% ± 40mV	≤0.05% ± 40mV
	Current	≤0.1% ± 0.1%FS	≤0.1% ± 0.1%FS
Readback accuracy	Voltage	≤0.05% ± 40mV	≤0.05% ± 40mV
	Current	≤0.1% ± 0.1%FS	≤0.1% ± 0.1%FS
Ripple noise(*)	Voltage	≤100mVp-p	≤100mVp-p
	Current	≤100mArms	≤120mArms
Output temp drift coefficient (0℃-40℃)	Voltage	100ppm/℃	100ppm/℃
	Current	200ppm/℃	200ppm/℃
Readback temp drift	Voltage	100ppm/℃	100ppm/℃

	Current	200ppm/℃	200ppm/℃
Transient response (10%-90% rated load)		≤5.0ms	≤5.0ms
Working temperature		0-40℃	0-40℃
Display		4.3inch TFT LCD screen	
Interface		USB, LAN, RS485，RS232	
Dimension		215.0mm(W) X 133.0mm(H) X 446.2mm(D)	
Weight		Approx. 6kg	Approx. 6kg

***1: Input voltage: 100-120Vac, output power reduced by half.**

Model		**OWH50120-1800 1ch**
Rated output (0℃-40℃)	Voltage	0-50V
	OVP	1V-55V
	Current	0-120A
	OCP	1A-121A
	Power	1800W
Input power*	Volt/freq.	100V-240Vac*1；45Hz-65Hz
Load regulation (%of output+offset)	CV	≤0.03%+20mV
	CC	≤0.05%+30mA
Input power regulation (%of output+offset)	CV	≤0.03%+20mV
	CC	≤0.05%+30mA
Setting resolution	Voltage	10mV
	Current	1mA
Readback resolution	Voltage	1mV
	Current	1mA
Setting accuracy	Voltage	≤0.05% ± 40mV
	Current	≤0.1% ± 0.1%FS
Readback accuracy	Voltage	≤0.05% ± 40mV
	Current	≤0.1% ± 0.1%FS
Ripple noise(*)	Voltage	≤100mVp-p

	Current	≤100mArms
Output temp drift coefficient (0℃-40℃)	Voltage	100ppm/℃
	Current	200ppm/℃
Readback temp drift	Voltage	100ppm/℃
	Current	200ppm/℃
Transient response (10%-90% rated load)		≤5.0ms
Working temperature		0-40℃
Display		4.3inch TFT LCD screen
Interface		USB, LAN, RS485，RS232
Size		215.0mm(W) X 133.0mm(H) X 446.2mm(D)
Weight		Approx. 7kg

***1: Input voltage: 100-120Vac, output power reduced by half.**

Interval Period of Adjustment:

One year is recommended for the calibration interval period.

8. Appendix

8.1 Appendix A: Accessories

(The accessories subject to final delivery.)

Standard

Power Cord

User Manual

USB Cable

8.2 Appendix B: General Care and Cleaning

General Care

Do not store or leave the instrument where the liquid crystal display could be exposed to direct sunlight for long periods of time.

Caution: To avoid any damage to the instrument, do not exposed it to any sprays, liquids, or solvents.

Cleaning

Inspect the instrument as often as operating conditions require. To clean the instrument exterior, perform the following steps:

1. Wipe the dust from the instrument surface with a soft cloth. Take care not to scratch the transparent LCD protection screen when cleaning.

2. Disconnect power before cleaning your instrument. Clean the instrument with a damp soft cloth (not dripping with water). It is recommended to clean with soft detergent or fresh water. To avoid damage to the instrument, do not use any corrosive chemical cleaning agents.

Warning:

Before re-applying power, ensure that the instrument is completely dry, avoiding any electric shock or electrical short circuit resulting from moisture.