

CPS High Power Series User Manual

1. Welcome

Thank you for choosing the Chaalakam CPS Series DC Power Supply.

This series is a high-performance, compact, and reliable DC regulated power source designed for laboratory, educational, production, and maintenance applications.

The CPS series features precise voltage and current control, low ripple and noise, and excellent stability. Its digital display provides accurate readings of output voltage and current in real time, ensuring convenient and safe operation.

When you receive a new unit of this power supply, please perform the following checks to ensure it is ready for proper use

1. **Inspect for Damage:** Check the unit carefully for any signs of damage that may have occurred during transportation.
2. **Verify Accessories:** Ensure that all accessories and components listed in the package contents are included and undamaged.
3. **Confirm Input Voltage:** Before powering on, verify that the input voltage rating shown on the rear panel matches your local mains voltage.
4. **Power-On Test:** Turn on the power supply and confirm that the output voltage and current operate normally.

If any issues are found during these checks, please contact brand authorised representatives immediately for assistance.

The following safety symbols may appear on the power supply or in this manual. Please familiarize yourself with their meanings before operating the equipment.



Warning



High voltage hazard



Grounding wire



Accreditation



Do not litter



Indoor Use



Hazard: A "Hazard" statement indicates a situation or operation that could result in personal injury or pose a risk to life if proper precautions are not taken.



Warnings: A "Warning" statement identifies conditions or operations that may cause damage to the product or result in personal injury if not properly observed



Caution: A "Caution" statement identifies conditions or operations that may cause damage to this product or other property if not followed correctly.

2. Job requirements.

2.1 Power Cord Requirements

Use a power cord that meets the electrical and safety requirements of this product. Ensure the cord is rated for the correct voltage and current, and that it complies with local safety standards.

2.2 Grounding Instructions

Before using the power supply, ensure it is properly grounded. Reliable grounding allows the weak leakage current generated by the internal electromagnetic interference (EMI) suppression circuits to safely flow to earth. Failure to ground the unit may result in false leakage, which can cause damage to connected equipment or reduce the power supply's electromagnetic interference immunity.



Proper grounding effectively prevents electrical leakage from the power supply and helps reduce output ripple and interference, ensuring stable and safe operation.

2.3 When using this power supply to charge rechargeable batteries (e.g., lead-acid batteries), ensure that the positive and negative terminals of the power supply are correctly connected to the corresponding positive and negative terminals of the battery. Incorrect connections may damage the power supply's internal rectifier components or the connected equipment.



Note : Incorrect connection may cause damage to the power supply and the connected load. Do not reverse the '+' and '-' poles

2.4 Do not use this product in environments with flammable or explosive materials. Do not use this product in humid or corrosive gas environments.


2.5 This product generates a significant amount of heat during operation, especially at full power. Therefore, use the product in an environment with good ventilation and heat dissipation conditions, and ensure that no obstacles block the product's cooling fan or ventilation holes.



Warning: To ensure proper heat dissipation from the instrument, leave a minimum of 3 cm of space on the sides and rear of the instrument to allow for adequate air circulation.

2.6 When using this power supply, select output wires with a sufficient diameter based on the output current. Ensure the connection areas between the wire and power supply, as well as the wire and load equipment, are large enough, clean, and free of rust and corrosion. Secure connections prevent heat damage to terminals or load equipment, reducing fire risk.

2.7 For product issues or quality problems, consult our service personnel. If necessary, send the power supply to our maintenance department for repair. Do not attempt self-repair or modification due to high internal voltages that persist even after power disconnection, posing a risk of injury or further damage.



High voltage hazard : Do not disassemble the power supply housing for repair or modification. Internal components carry hazardous voltages that can cause serious injury or death.

3.Product Parameters

3.1 Rated operating conditions:

Input voltage: $230V \pm 10\%$

3.2 Current running:

- 1.Current stability: $\leq 0.5\% + 3mA$
- 2.Load stability: $\leq 0.5\% + 3mA$
- 3.Ripple noise: $\leq 0.5\% AP-P$

3.3 Constant voltage operation:

- 1.Voltage stability: $\leq 0.5\% + 3mV$
- 2.Load Stability: $\leq 0.5\% + 3mV$
- 3.Ripple noise: $\leq 0.5\% AP-P$

3.4 Operating environment:

- 1.Operating conditions: 0 to $40^{\circ}C$; $< 80\%RH$
- 2.Storage condition: -10 to $70^{\circ}C$; $< 70\%RH$
- 3.Working environment: Indoor use

3.5 Meter header display:

- 1.White 4-digit digital tube display
- 2.Display resolution: $0.01V$ $0.01A$
(greater than $100V$: $0.1V$, greater than $100A$: $0.1A$)

4.Product Specification

600W-3KW Product List

Power Supply, Power Cord,
Wiring lugs,High current Test
leads & User Manual

600W Model	Specifications
CPS1520D	0-15V/0-20A
CPS1530D	0-15V/0-30A
CPS3010N	0-30V/0-10A
CPS3020D	0-30V/0-20A
CPS605N	0-60V/0-5A
CPS6010D	0-60V/0-10A
CPS1005D	0-100V/0-5A
Product size : L210xW160xH80	
Net weight: 2Kg Gross weight: 2.5Kg	

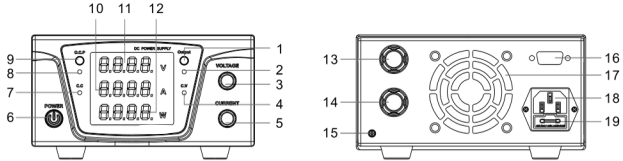
2KW Model	Specifications
CPS1580D	0-15V/0-80A
CPS15100D	0-15V/0-100A
CPS3050D	0-30V/0-50A
CPS3060D	0-30V/0-60A
CPS6030D	0-60V/0-30A
CPS10020D	0-100V/0-20A
CPS15010D	0-150V/0-10A
CPS20010D	0-200V/0-10A
CPS3005D	0-300V/0-5A
Product size:L335mm x W260mm x H130mm	
Net weight: 5.5Kg Gross weight: 6.2Kg	

1KW Model	Specifications
CPS1540D	0-15V/0-40A
CPS1550D	0-15V/0-50A
CPS1560D	0-15V/0-60A
CPS3030D	0-30V/0-30A
CPS3040D	0-30V/0-40A
CPS6020D	0-60V/0-20A
CPS10010D	0-100V/0-10A
CPS5003D	0-150V/0-3A
CPS15005D	0-150V/0-5A
CPS2003D	0-200V/0-3A
CPS2005D	0-200V/0-5A
CPS3003D	0-300V/0-3A
Product size : L275xW200xH105	
Net weight: 3Kg Gross weight: 3.6Kg	

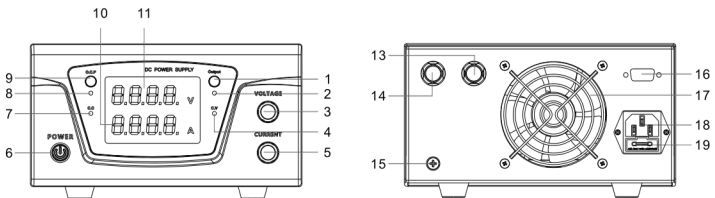
3KW Model	Specifications
CPS15150D	0-15V/0-150A
CPS15200D	0-15V/0-200A
CPS3080D	0-30V/0-80A
CPS30100D	0-30V/0-100A
CPS6040D	0-60V/0-40A
CPS6050D	0-60V/0-50A
CPS6060D	0-60V/0-60A
CPS10030D	0-100V/0-30A
CPS30010D	0-300V/0-10A
Product size:L335mm x W260mm x H130mm	
Net weight: 7Kg Gross weight: 7.7Kg	

5.Products

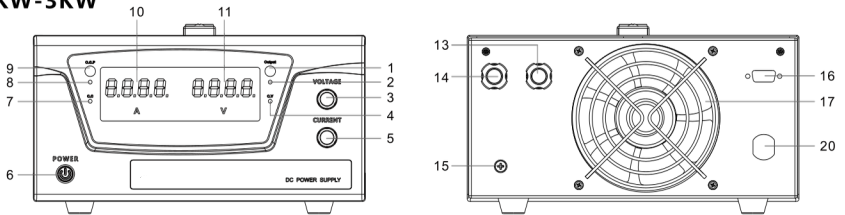
600W



1KW



2KW-3KW



1	Output switch (Long press to enter system settings)	7	CC indicator	14	Negative Output (Black)
2	Output switch indicator	8	OCP indicator	15	Grounding hole
3	Voltage regulation	9	Short-circuit protection switch	16	Upper bay interface (optional)
4	CV indicator	10	Current display	17	Cooling Fan
5	Current regulation	11	Voltage Display	18	Electric socket
6	Power switch	12	Power Display	19	Fuse box
		13	Positive Output (Red)	20	Input power port

6. Operating instructions

The power supply output modes are all categorized into two : constant voltage output (C.V) and constant current output(C.C). The output mode is determined by the voltage and current values set by the user and the load connected by the user. Ther output voltage or current value of the power supply will not exceed the voltage and current values set by the user.

In constant voltage mode, the output voltage value is equal to the voltage value set by the user
In constant current mode, the output current value is equal to the current value set by the user



Notice

In actual CV operation, if the load resistance decreases, causing the output current to increase up to the set current limit, the power supply will automatically switch to CC mode. When the load resistance continues to decrease, the current will remain at the set value while the output voltage decreases proportionally ($I = V/R$). To restore the CV output state, either increase the load resistance or raise the current setting value.

VOLTAGE – Voltage Adjustment Knob

Used to adjust the output voltage setting. Turn clockwise to increase the voltage value and counterclockwise to decrease it. Pressing the voltage adjustment knob allows shifting to the left. The blinking indicator stops 5 seconds after the voltage adjustment is completed, and the current setting value is automatically saved.

CURRENT– Current Adjustment Knob

Used to set the desired output current. Rotate the knob clockwise to increase the current value and counterclockwise to decrease it. Press the knob (coding switch) to shift the adjustment position to the left for finer or broader control. The blinking indicator stops 5 seconds after the adjustment is completed, and the set current value is automatically saved.

OUT output button

Short press the output button to switch the power output on and off . long press it for 5 seconds to enter the system setting

OCP short-circuit protection Button

Press the Short-Circuit Protection button to enable the protection function; the button indicator will illuminate when active. When the load experiences an overcurrent or short-circuit condition, the power supply will automatically stop output and issue an alarm prompt.Press the Output button to clear the alarm and return the unit to the output-off (standby) state.

7. System Settings

Long press the Output button for 5 seconds to enter the system setup mode, where you can configure the default settings of the power supply according to your usage requirements.

After entering the setup mode:

- Rotate the Voltage Adjustment Knob to change the default parameter of the current item.
- Press the Voltage Adjustment Knob to move to the next item.
- When the selection reaches the last item (Serial No. 6), press the knob again to save all parameters and exit the setup mode.

If any other key is pressed during the setup process, the system will exit the setup mode without saving the changes.

The specific setting items and their parameter descriptions are shown below.

Serial number	Sports event	Parameters	Hidden meaning	Default value
1	Local ID	0-31	Specify the number of this machine in the host computer network	0
2	Output default state	0	The Output button is OFF by default when the power supply is turned on.	0
		1	The Output button is ON by default when the power supply is turned on.	
3	Screen brightness	0	Low brightness	0
		1	High brightness	
4	Buzzer Mute	0	Unprompted	1
		1	Beep	
5	Communications baud rate	1	2400	1
		2	4800	
		3	9600	
		4	19200	
6	Communication size setting	0	Small end structure	0
		1	Big end structure	

Host computer communication

Users can purchase models equipped with a USB communication module to enable communication with a host computer (PC or PLC) using the MODBUS-RTU protocol.

This allows for remote control and monitoring of the power supply from the host system. Connect the power supply to the PC or PLC using a USB connection cable, or use an appropriate conversion data cable (such as USB to RS232/RS485) to interface with other communication ports.

8. Product Maintenance

8.1 Regular inspection, cleaning and maintenance of the machine will help to extend the life of the machine , Follow the steps below to maintain the machine

1. Turn off the power switch and unplug the power cord from the outlet.
2. Gently wipe the case, top cover, and vents with a soft cloth and mild detergent.
3. Visually inspect all power cords and terminals for any signs of damage such as impact, looseness, heat erosion, moisture, or insect bites. If any parts are damaged, replace them promptly with power cords or terminals of the same specification.

8.2 Replace the fuse

If the fuse blows, the machine will stop operating. Identify the cause of the blown fuse, then replace it with a fuse of the same rating and specification.

9. Product Warranty

Circuitech Solutions Private Ltd (hereafter referred to as "CSPL") warrants to the first end user upon purchase that this product is free from defects in materials and workmanship for a period of 6 months from the date of the invoice. This warranty does not apply to damage due to misuse, physical abuse, negligence, accidents, repairs, or alterations outside of our facilities. CSPL shall not be liable for death, injuries to persons or property, or for incidental, contingent, special, or consequential damages arising from the use of our product. Our authorized service representatives will repair or replace, free of cost, any part that is defective or the cause of failure in the performance of the product, subject to the terms and conditions outlined below

The following cases are excluded

- Warranty will be valid only when both this Warranty Card and the original Purchase Invoice are presented together for service.
- We follow a Carry-In warranty policy (offsite warranty policy), which means that the defective product should be delivered to our office in person or through courier for repair.
- CSPL reserves the right to decline warranty service if the above documents are not presented, or if the information contained is incomplete, or if the Warranty Card is found to be tampered with.
- This Warranty shall not cover any damages resulting from unauthorized adaptations or adjustments to the product.
- This Warranty shall not apply to damages caused to the product by accidents, lightning, ingress of water, fire, Acts of God, improper ventilation, dropping, excessive shock, or any external cause beyond CSPL's control, and/or any damage caused due to tampering of the product by an unauthorized agent.
- CSPL reserves the right to replace the defective part with an equivalent and/or reconditioned part.
- Our liability shall be limited to the cost of the products supplied by "Circuitech Solutions Pvt Ltd" only.