

SKY TOPPOWER PS3010H

SKY TOPPOWER PS3010H DC Power Supply User Manual

Model: PS3010H | Brand: SKY TOPPOWER

1. PRODUCT OVERVIEW

The SKY TOPPOWER PS3010H is a professional adjustable DC power supply regulator designed for high-precision voltage and current control. It features a 4-digit LED display for accurate readings and offers both Constant Voltage (CV) and Constant Current (CC) modes. This compact and lightweight unit is ideal for various applications including electronics repair, battery charging, laboratory experiments, and educational purposes.

Key features include:

- High Precision 4-Digit Display (0.01V, 0.001A accuracy)
- Automatic Conversion between Constant Voltage and Constant Current Modes
- Multiple Protection Functions: Leakage, Thermal, Voltage Overload, Current Limit, Short Circuit, Overheating
- Ground Terminal and Anti-Reverse Connection Protection
- Large, Easy-to-Read Backlit Display
- Compact and Lightweight Design



Figure 1.1: Front view of the SKY TOPPOWER PS3010H DC Power Supply.

2. PRODUCT COMPONENTS AND CONTROLS

Familiarize yourself with the various components and controls of your DC power supply.

FUNCTION DESCRIPTION



Figure 2.1: Front Panel Function Description.

- **Voltage Output Display:** Shows the current output voltage.
- **Current Output Display:** Shows the current output amperage.
- **Current Output Fine/Coarse:** Knobs to precisely adjust the output current.
- **Constant Current (CC) Indicator:** LED illuminates when the unit is operating in Constant Current mode.
- **Power Switch:** Turns the unit ON/OFF.
- **Output Negative (-):** Black terminal for negative connection.
- **Ground Terminal (GND):** Yellow terminal for grounding, enhancing safety.
- **Output Positive (+):** Red terminal for positive connection.
- **Voltage Output Fine/Coarse:** Knobs to precisely adjust the output voltage.
- **Constant Voltage (CV) Indicator:** LED illuminates when the unit is operating in Constant Voltage mode.

LARGE DISPLAY SCREEN EASY TO READ



Figure 2.2: Rear Panel Features (Cooling Fan and Power Input).

- **Smart Cooling Fan:** Automatically activates when the internal temperature rises to maintain optimal operating conditions.
- **AC Power Input:** Connects the power supply to the main AC power source (110V \pm 10%, 60Hz). Includes a fuse box for protection.

3. SETUP AND INITIAL OPERATION

Before connecting any load, ensure the power supply is properly set up.

1. **Power Connection:** Connect the provided power cord to the AC power input on the rear of the unit and then to a suitable wall outlet.
2. **Initial Voltage/Current Setting:** Before turning on, ensure both the Voltage and Current coarse knobs are turned fully counter-clockwise to their minimum settings. This prevents accidental over-voltage or over-current

to your connected device.

3. **Power On:** Flip the power switch to the 'ON' position. The digital displays will illuminate.
4. **Adjusting Voltage:** Use the Voltage Coarse knob to set the approximate desired voltage, then use the Voltage Fine knob for precise adjustment. The CV indicator LED will be lit when the unit is in Constant Voltage mode.
5. **Adjusting Current Limit:** To set the current limit, you can short the output terminals (connect the red and black terminals together with a wire or alligator clip). The CC indicator LED will light up. Use the Current Coarse and Fine knobs to set the desired maximum current. Remove the short circuit after setting. This feature protects your device from drawing excessive current.
6. **Connecting Load:** Connect your device to the output terminals (red to positive, black to negative). Ensure the ground terminal is used if your application requires it for safety.

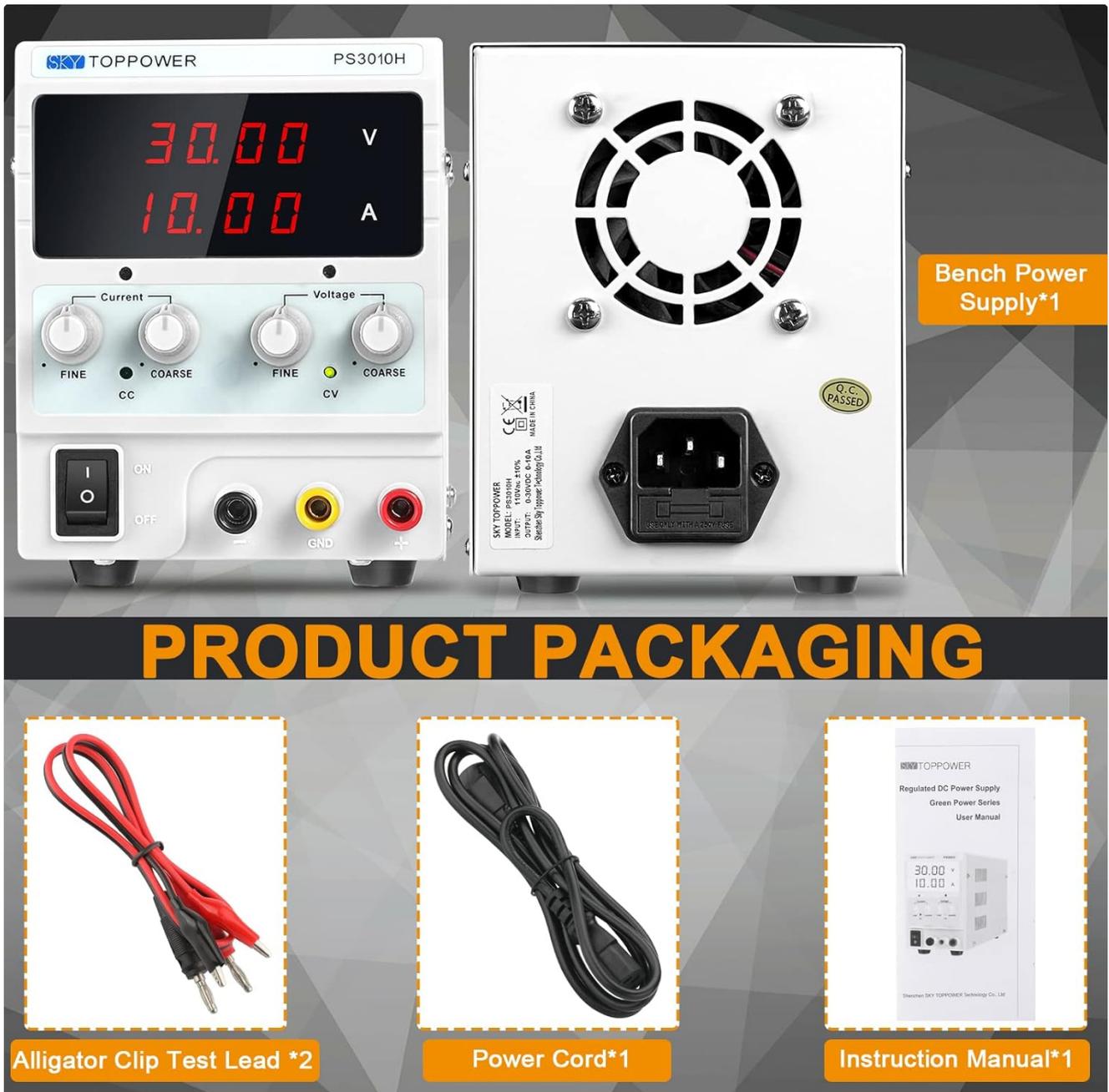


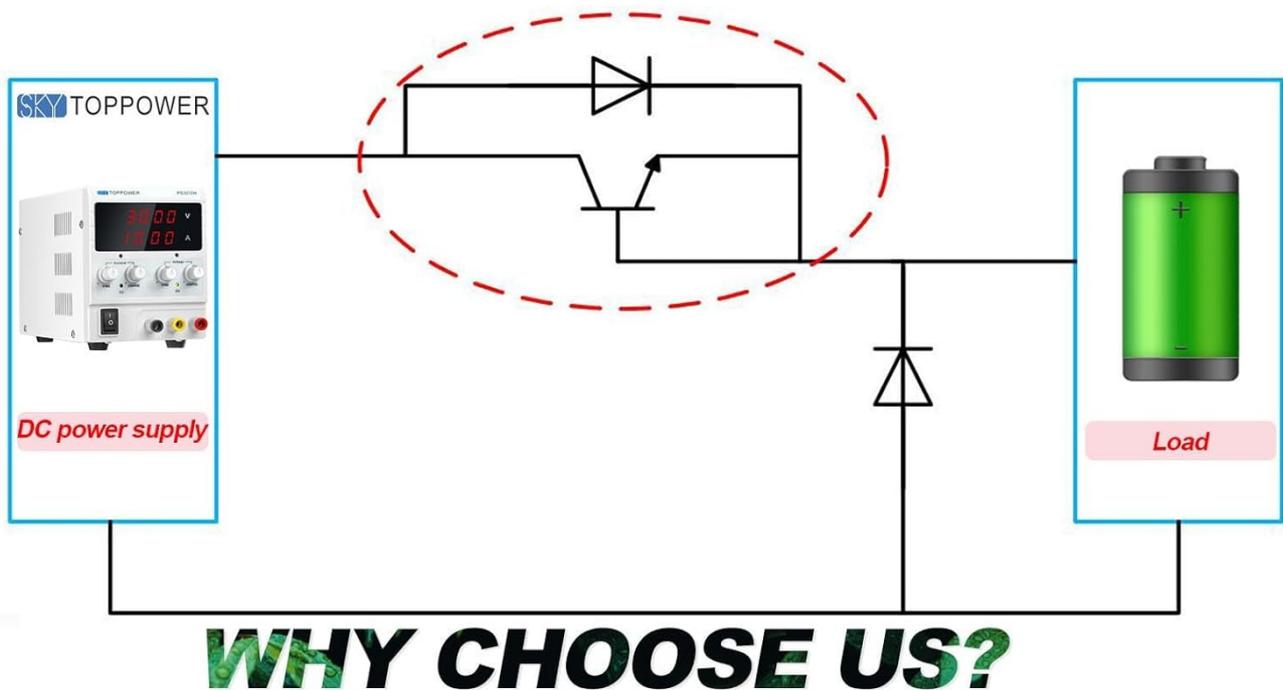
Figure 3.1: Large Display Screen for Easy Reading.

4. OPERATING MODES (CV/CC AUTOMATIC CONVERSION)

The power supply automatically switches between Constant Voltage (CV) and Constant Current (CC) modes based on the load requirements.

- **Constant Voltage (CV) Mode:** When the load current is less than the preset current limit, the unit operates as a constant voltage source. The voltage display will show your set voltage, and the current display will show the actual current drawn by the load. The CV indicator LED will be lit.
- **Constant Current (CC) Mode:** If the load current attempts to exceed or becomes equal to the preset current limit, the unit will automatically switch to CC mode. The CC indicator LED will light up, the voltage will drop to maintain the set current, and the current display will show the preset current limit. This protects the connected device from overcurrent.

Anti-Reverse Connection Protection



Item	SKY TOPPOWER Power Supplies	Other Brand Power Supplies
Anti-Reverse Connection Protection	YES	NO



✓ Safer To Use



✓ Protection Of The Load



✓ Protection Of The Power Supply



✓ Increased Safety And Reliability Of Equipment

Figure 4.1: High Precision 4-Digit Display for Accurate Readings.

Demonstration of Accuracy and Safety Features:

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Video 4.1: This video demonstrates the high-precision voltage and current testing capabilities of the power supply, along with its intelligent anti-burn (short circuit protection) feature. It also shows practical applications like charging a lithium battery and powering a circuit board.

5. APPLICATIONS

The SKY TOPPOWER PS3010H is versatile and can be used in a wide range of settings:



Figure 5.1: Wide Range of Applications.

- **Battery Charging:** Suitable for charging various batteries, including LiFePO4 batteries.
- **Electronics Repair:** Essential for repairing phones, computers, and other electronic gadgets.
- **Circuit Testing:** Provides stable and precise power for testing electronic components and circuits.
- **Electrolysis Projects:** Can be used for electrolytic power supply applications.
- **DIY Projects:** A valuable tool for hobbyists and DIY enthusiasts.
- **Educational Settings:** Ideal for school education, scientific research, and laboratory use.

How to Charge a Battery:

HOW TO CHARGE BATTERY



V Power Supply **>** **V** Battery Charger

- I . Set the charging voltage higher than the present battery voltage
- II . Keep the power supply is on
- III . Connect the unit to the battery
- IV . Start charging

Figure 5.2: Battery Charging Instructions.

For battery charging, set the charging voltage slightly higher than the present battery voltage. Ensure the power supply is on, then connect the unit to the battery (positive to positive, negative to negative) and begin charging.

Anti-Reverse Connection Protection:

SMALL SIZE, EXCELLENT MATERIAL



Figure 5.3: Anti-Reverse Connection Protection for Enhanced Safety.

The PS3010H includes anti-reverse connection protection, which safeguards both the power supply and your connected device from damage due to incorrect polarity.

Experimental Applications:

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Video 5.1: This video showcases four interesting experiments using the power supply, including battery charging, electrolysis, powering an LED strip, and operating a DIY electric motor fan.

6. MAINTENANCE AND CARE

- **Cleaning:** Regularly wipe the exterior of the unit with a soft, dry cloth. Avoid using abrasive cleaners or solvents.

- **Ventilation:** Ensure the cooling fan vents on the rear and sides of the unit are clear of obstructions to allow for proper airflow. The smart cooling fan will activate automatically when needed.
- **Storage:** Store the power supply in a cool, dry place away from direct sunlight and extreme temperatures when not in use.
- **Fuse Replacement:** If the unit does not power on, check the fuse located in the AC power input socket on the rear panel. Replace with a fuse of the same type and rating if necessary.

7. TROUBLESHOOTING

If you encounter issues with your power supply, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No power/Display off	Power cord not connected, power switch off, blown fuse.	Check power connections, ensure switch is ON, replace fuse if blown.
Voltage cannot be adjusted / CC LED is on	Unit is in Constant Current (CC) mode due to current limit being reached or set too low.	Increase the current limit setting using the Current knobs. Ensure the load is not drawing more current than the set limit.
Current cannot be adjusted / CV LED is on	Unit is in Constant Voltage (CV) mode; current is determined by the load.	This is normal operation in CV mode. The current displayed is what the load is drawing. To set a specific current, the load must demand more current than the set limit, forcing the unit into CC mode.
Unit shuts down unexpectedly	Overheating, internal fault, or protection circuit activated (e.g., thermal protection).	Ensure proper ventilation. Turn off the unit, let it cool down, then restart. If the problem persists, contact customer service.

The power supply is equipped with multiple protection functions including leakage protection, thermal protection, voltage overload, current limit, short circuit protection, and overheating safety protection to ensure reliable performance and extend device life.

8. SPECIFICATIONS

- **Brand:** SKY TOPPOWER
- **Model Number:** PS3010H
- **Input Voltage:** AC 110V \pm 10%, 60Hz
- **Output Voltage:** 0-30V (Adjustable)
- **Output Current:** 0-10A (Adjustable)
- **Display:** 4-Digit LED (Voltage and Current)

- **Voltage Accuracy:** 0.01V (10mV)
- **Current Accuracy:** 0.001A (1mA)
- **Dimensions (LxWxH):** Approximately 8.86 x 4.13 x 5.43 inches (22.5 x 10.5 x 13.8 cm)
- **Item Weight:** Approximately 3.87 pounds (1.76 kg)
- **Color:** White
- **Cooling:** Smart Cooling Fan
- **Protection:** Leakage Protection, Thermal Protection, Voltage Overload, Current Limit, Short Circuit Protection, Overheating Protection, Anti-Reverse Connection Protection.



Figure 8.1: Compact Size and Lightweight Design.

9. WHAT'S IN THE BOX

Upon opening your product packaging, you should find the following items:

- 1 x SKY TOPPOWER PS3010H DC Bench Power Supply Unit
- 1 x US Power Cord
- 1 set x Alligator Clip Wire
- 1 x User Manual

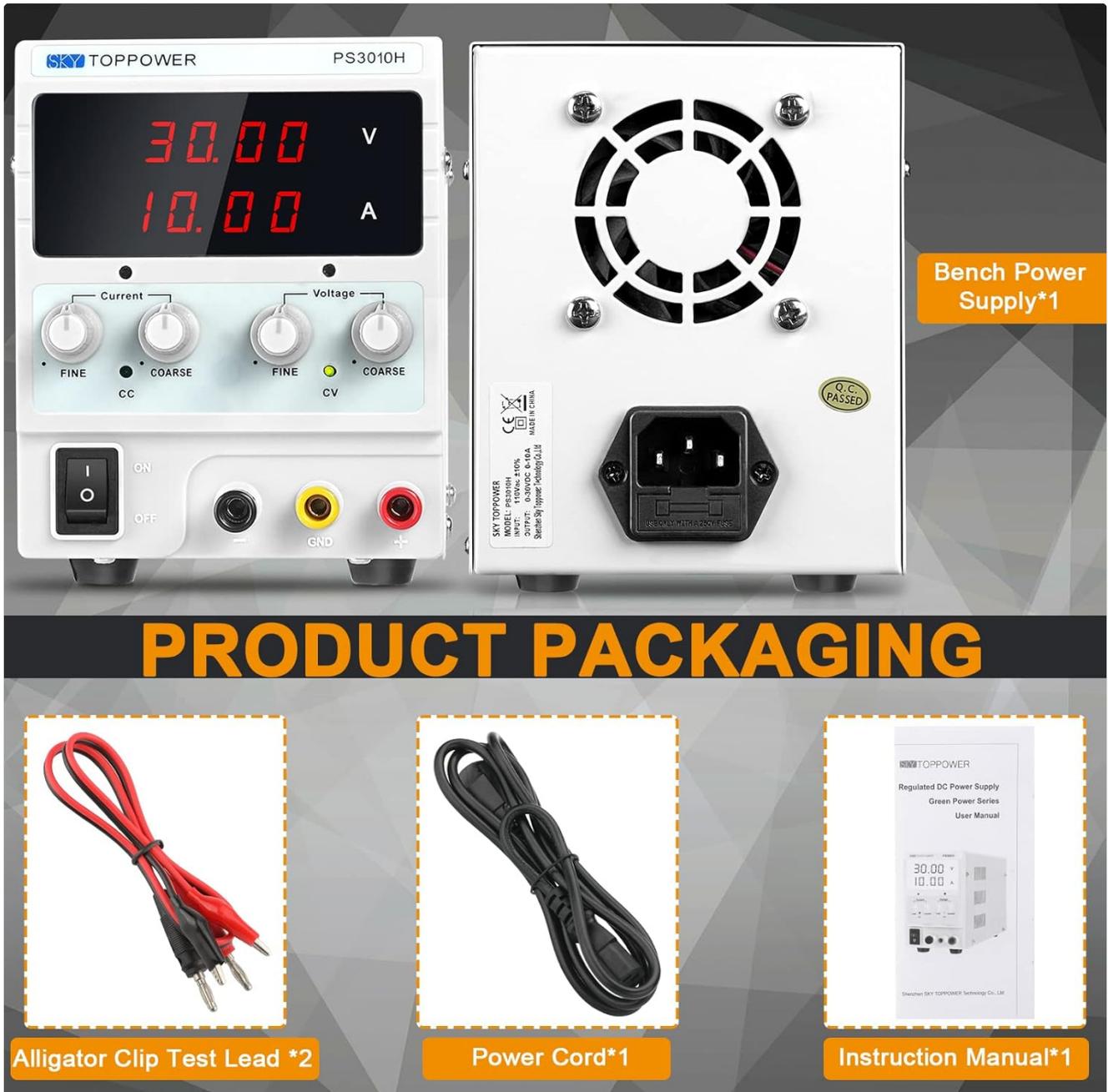


Figure 9.1: Product Packaging Contents.

10. WARRANTY AND CUSTOMER SUPPORT

SKY TOPPOWER is committed to providing professional technical support services. If you encounter any problems or have questions regarding your order or the product, please do not hesitate to contact SKY TOPPOWER Customer Service via Amazon or email. Your satisfaction is our priority.

