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› SKY TOPPOWER /

› SKY TOPPOWER PS6005H 60V 5A Variable DC Bench Power Supply User Manual

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Model: PS6005H | Brand: SKY TOPPOWER

1. INTRODUCTION

This manual provides comprehensive instructions for the safe and efficient operation, maintenance, and troubleshooting of your SKY TOPPOWER PS6005H Variable DC Bench Power Supply. This device is designed for precise voltage and current regulation, suitable for a wide range of applications including laboratory experiments, production line testing, automotive repair, scientific research, educational purposes, and DIY projects.

2. SAFETY INSTRUCTIONS

To ensure safe operation and prevent damage to the unit or connected devices, please observe the following safety precautions:

- Always connect the power supply to a grounded electrical outlet. The ground terminal provides essential security protection.
- Do not operate the device in wet or damp conditions.
- Ensure proper ventilation to prevent overheating. The built-in cooling fan requires unobstructed airflow.
- Verify the input voltage matches the power supply's requirements (AC 110V \pm 10%, 60Hz).
- Before connecting or disconnecting any load, ensure the power supply is turned off or the output is disabled.
- Avoid short-circuiting the output terminals for extended periods, although the unit includes short-circuit protection.
- Be aware of the anti-reverse connection protection feature, which helps prevent damage from incorrect polarity.
- Do not attempt to open or modify the power supply. Refer all servicing to qualified personnel.

3. PRODUCT OVERVIEW

The SKY TOPPOWER PS6005H is a professional variable DC power supply featuring a 4-digit LED display for precise voltage and current readings. It offers adjustable output from 0-60V and 0-5A, with both coarse and fine adjustment knobs for accurate control.

HOW TO CHARGE BATTERY

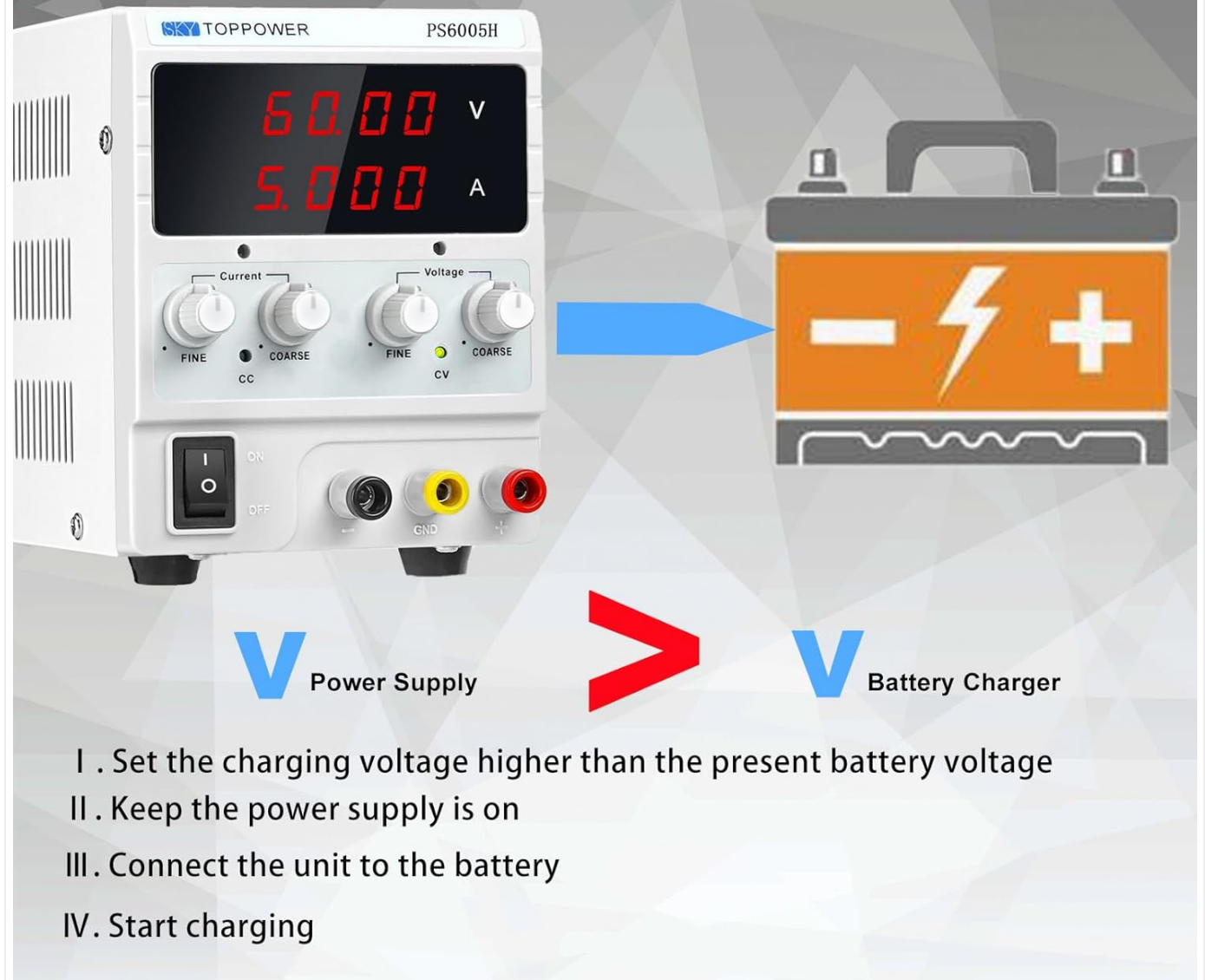


Figure 3.1: Front Panel Function Description

Voltage Output Display: Shows the current output voltage.

Current Output Display: Shows the current output amperage.

Current Output Fine/Coarse: Knobs for precise and broad current adjustment.

Voltage Output Fine/Coarse: Knobs for precise and broad voltage adjustment.

Constant Current Indicator (CC): LED illuminates when the unit is operating in constant current mode.

Constant Voltage Indicator (CV): LED illuminates when the unit is operating in constant voltage mode.

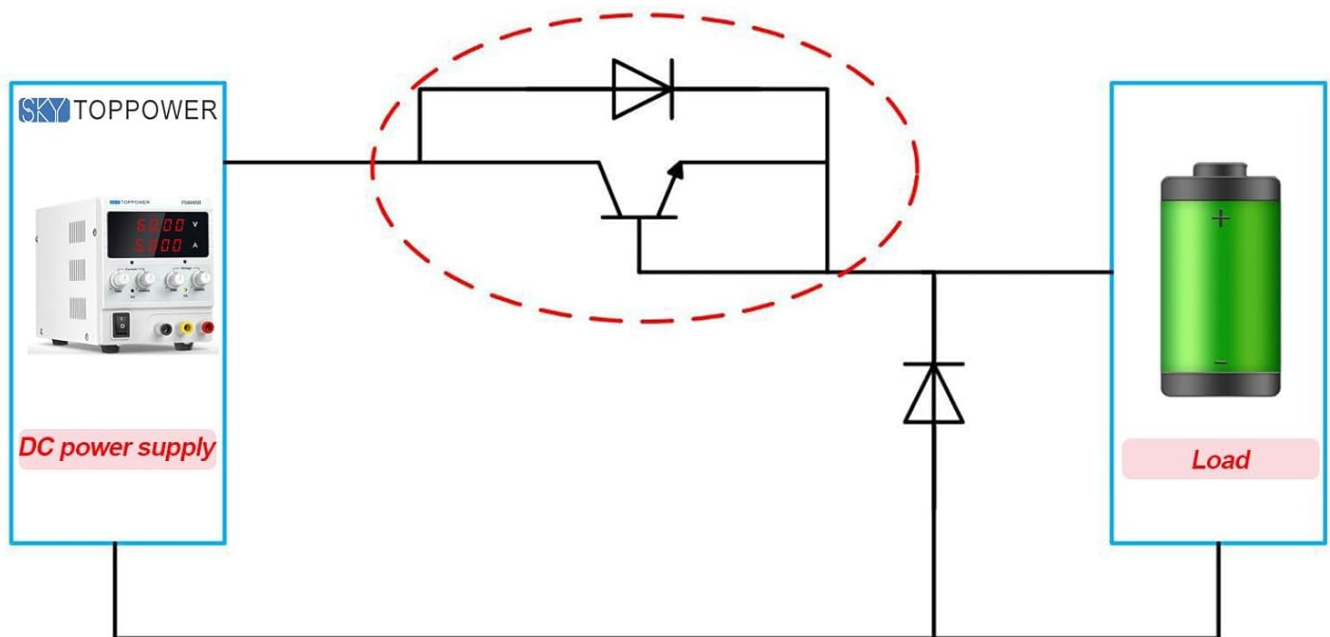
Power Switch: Turns the unit ON/OFF.

Output Positive (+): Red terminal for positive output connection.

Output Negative (-): Black terminal for negative output connection.

Ground Terminal (GND): Yellow terminal for safety ground connection.

Anti-Reverse Connection Protection



WHY CHOOSE US?

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 3.2: Rear Panel Features

Smart Cooling Fan: Activates automatically when the internal temperature rises to maintain stable operation and prolong product life.

AC Power Input: Connects the power supply to the main electrical outlet.

Fuse Box: Contains the protective fuse for the unit.

4. SETUP AND INITIAL OPERATION

- Unpacking:** Carefully remove the power supply and all accessories from the packaging. Inspect for any signs of damage.
- Placement:** Place the unit on a stable, level surface with adequate ventilation around the cooling fan. Avoid placing it near heat sources or in direct sunlight.
- Power Connection:** Connect the provided power cord to the AC power input on the rear panel and then to a grounded AC 110V, 60Hz electrical outlet.
- Initial Power On:** Turn the power switch to the "ON" position. The display should illuminate, showing voltage and current readings.

5. Setting Output Parameters (No Load):

- Ensure no load is connected to the output terminals.
- Adjust the **Voltage Coarse** and **Voltage Fine** knobs to set the desired output voltage.
- Adjust the **Current Coarse** and **Current Fine** knobs to set the desired current limit. This sets the maximum current the power supply will deliver.

5. OPERATING MODES AND APPLICATIONS

The PS6005H operates in two primary modes: Constant Voltage (CV) and Constant Current (CC). The unit automatically switches between these modes based on the load conditions.

- **Constant Voltage (CV) Mode:** When the load current is less than the preset current limit, the power supply maintains the set output voltage. The CV indicator will be lit.
- **Constant Current (CC) Mode:** If the load current attempts to exceed the preset current limit, the power supply automatically switches to CC mode, maintaining the set current while the output voltage drops. The CC indicator will be lit.

5.1. Battery Charging

FUNCTION DESCRIPTION



Figure 5.1: Battery Charging Procedure

- I. Set the charging voltage higher than the present battery voltage.
- II. Keep the power supply ON.
- III. Connect the unit to the battery, ensuring correct polarity.
- IV. Start charging. Monitor the voltage and current.

The power supply features anti-reverse connection protection to safeguard against damage from incorrect battery polarity. This enhances safety for both the device and the battery.



Figure 5.2: Anti-Reverse Connection Protection

5.2. General Applications

The PS6005H is versatile and can be used in various settings:



Figure 5.3: Wide Application Scenarios

- **Laboratory:** Powering experimental circuits and components.
- **Production Line:** Testing electronic devices during manufacturing.
- **Car Repair:** Diagnosing and powering automotive electronic systems.
- **Scientific Research:** Providing stable power for research setups.
- **School/Education:** Ideal for teaching electronics and practical experiments.
- **DIY Projects:** A reliable power source for hobbyists and makers.

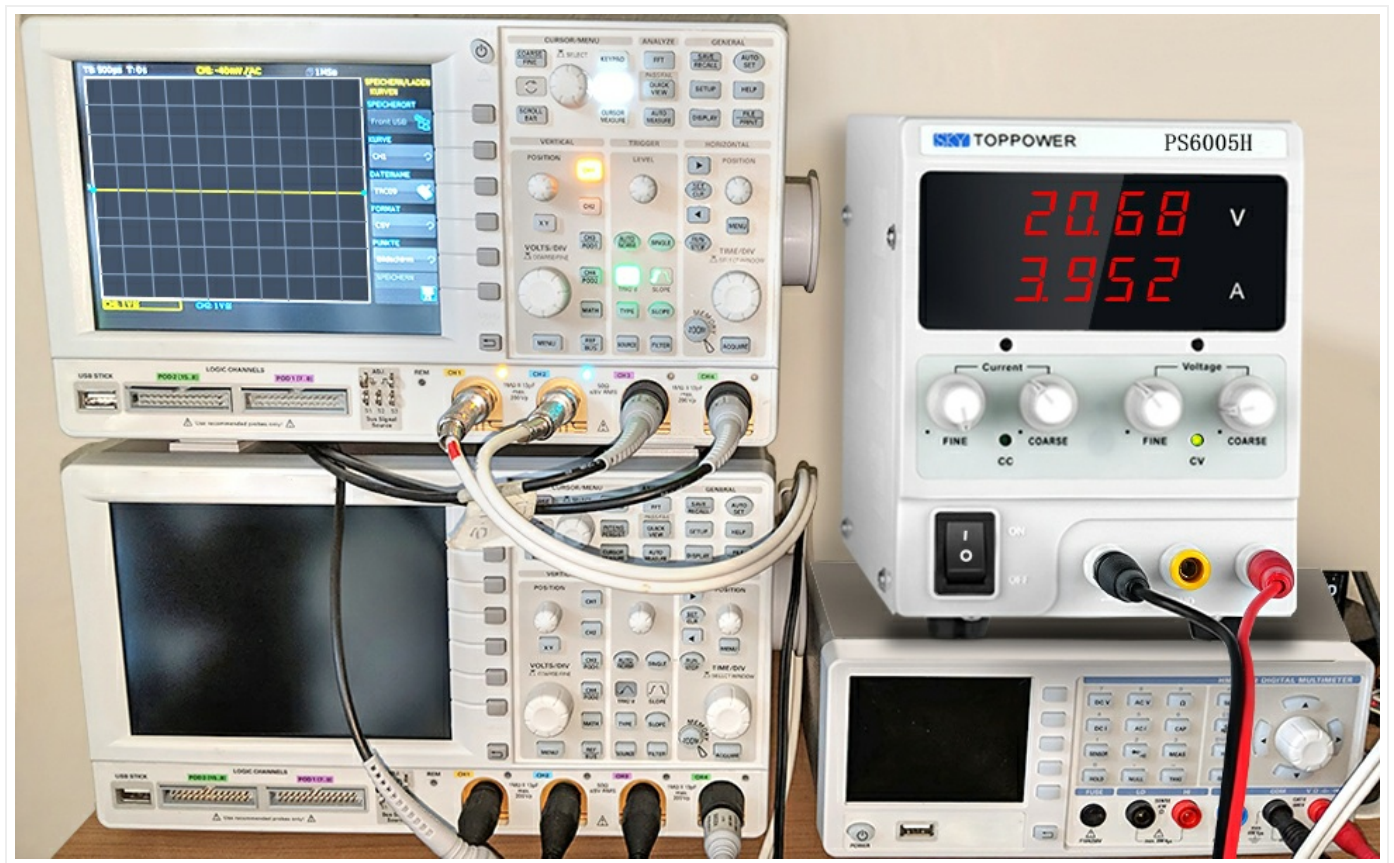


Figure 5.4: Typical Application Scenario with Test Equipment

6. HIGH PRECISION DISPLAY AND CONTROL

The PS6005H features a backlit 4-digit LED display, providing clear and accurate readings of voltage (0.01V resolution) and current (0.001A resolution). The coarse and fine adjustment knobs allow for precise control over the output parameters.

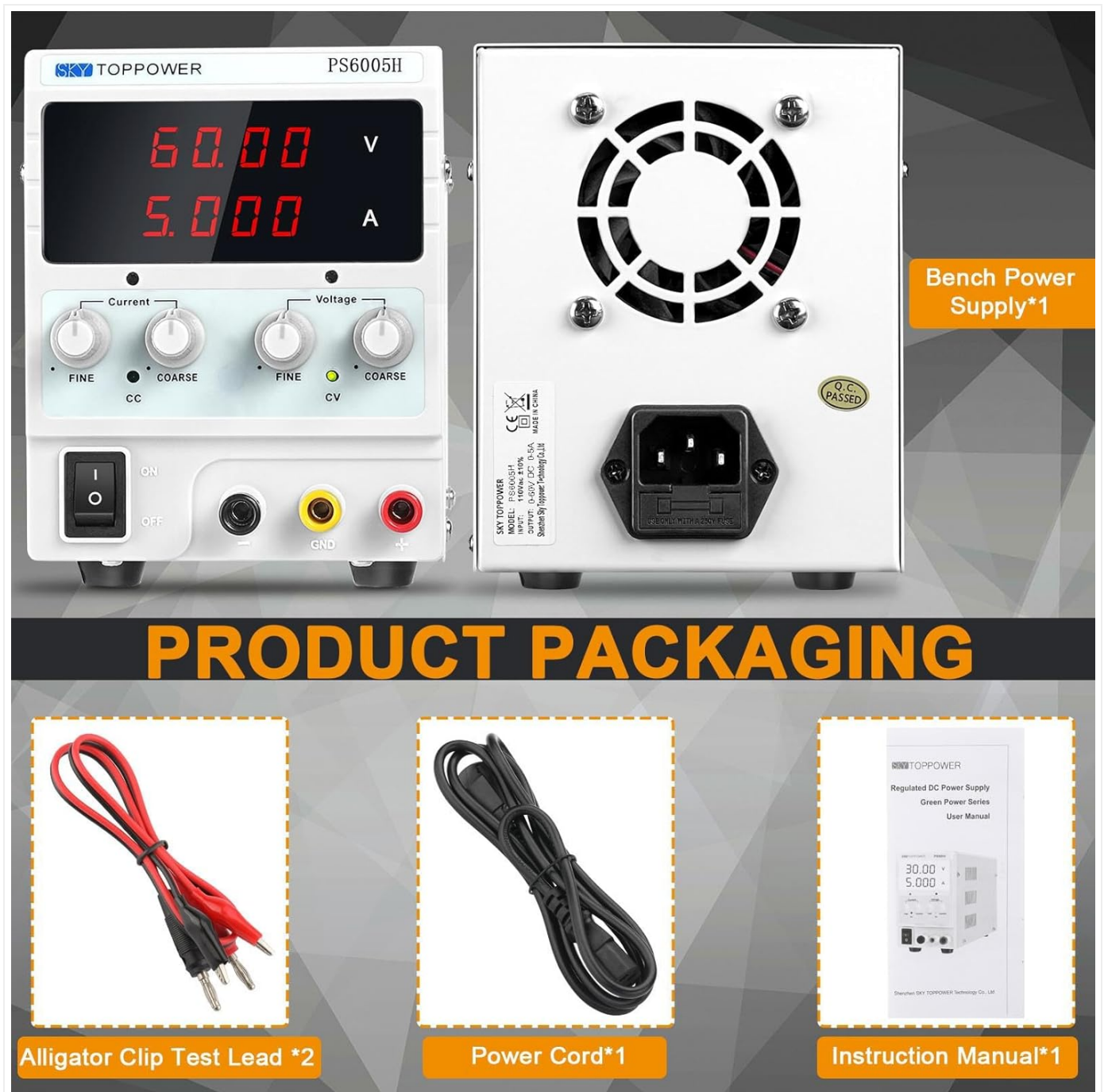


Figure 6.1: High Precision 4-Digit Display Accuracy

7. MAINTENANCE

- **Cleaning:** Disconnect the power supply from the AC outlet before cleaning. Use a soft, dry cloth to wipe the exterior. Do not use abrasive cleaners or solvents.
- **Ventilation:** Regularly check that the cooling fan and ventilation openings are free from dust and obstructions.
- **Storage:** When not in use for extended periods, store the unit in a dry, dust-free environment.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
No power/display off	Power cord not connected, power switch off, blown fuse.	Check power cord connection, ensure switch is ON. Inspect and replace fuse if necessary (refer to fuse box on rear panel).
No output voltage/current	Output terminals not connected, voltage/current knobs set to zero, unit in CC mode with low load.	Verify connections. Adjust voltage and current knobs to desired levels. Check if the CC indicator is lit; if so, the load might be drawing less current than the set limit.
Output voltage drops significantly under load	Unit operating in Constant Current (CC) mode, current limit set too low.	Increase the current limit using the Current Coarse/Fine knobs. Ensure the current limit is higher than the load's requirement for Constant Voltage operation.
Overheating	Blocked ventilation, excessive load.	Ensure adequate airflow around the unit. Reduce the load or operating time. The smart cooling fan should activate.

9. SPECIFICATIONS

- **Model:** PS6005H
- **Output Voltage:** 0-60V (Adjustable)
- **Output Current:** 0-5A (Adjustable)
- **Display:** 4-Digit LED (Voltage: 0.01V accuracy, Current: 0.001A accuracy)
- **Input Voltage:** AC 110V \pm 10%, 60Hz
- **Maximum Power:** 300 Watts
- **Material:** Metal enclosure
- **Dimensions (L x W x H):** 8.70 x 4.09 x 5.43 inches (22.1 x 10.4 x 13.8 cm)
- **Weight:** Less than 1.5 kg (3.3 lbs)
- **Protection Features:** Leakage protection, Thermal protection, Voltage overload, Current limit, Short circuit protection, Anti-reverse connection protection.
- **Cooling:** Built-in smart cooling fan.

LARGE DISPLAY SCREEN EASY TO READ



Figure 9.1: Compact and Lightweight Design

10. WHAT'S IN THE BOX

SMALL SIZE, EXCELLENT MATERIAL



Figure 10.1: Product Packaging Contents

- 1 x SKY TOPPOWER DC Variable Power Supply (PS6005H)
- 1 x Power Cord
- 1 set x Alligator Clip Test Leads
- 1 x User Manual (this document)

11. OFFICIAL PRODUCT VIDEOS

11.1. Four Interesting Experiments with Power Supplies

This video demonstrates four practical experiments using a SKY TOPPOWER DC power supply, including battery charging, electrolysis, powering an LED strip, and operating a small DIY electric motor fan. Note: The video shows a PS3010H model, but the principles of operation are similar to the PS6005H.

11.2. SKY TOPPOWER DC Bench Power Supply Overview and Testing

[REDACTED]

This video provides an overview of a SKY TOPPOWER DC bench power supply, demonstrating its accuracy in voltage and current testing, intelligent anti-burn test feature, and applications like charging lithium batteries and powering circuit boards. Note: The video shows a PS3010H model, but the features and testing methods are applicable to the PS6005H.

12. WARRANTY AND TECHNICAL SUPPORT

SKY TOPPOWER provides professional technical support with over 20 years of engineering experience. If you have any questions or require assistance with your DC power supply, please feel free to contact us. Refer to your purchase documentation for specific warranty details.

For further information or to explore other products, visit the official [SKY TOPPOWER Store](#).

