YIHUA YIHUA 605D-III

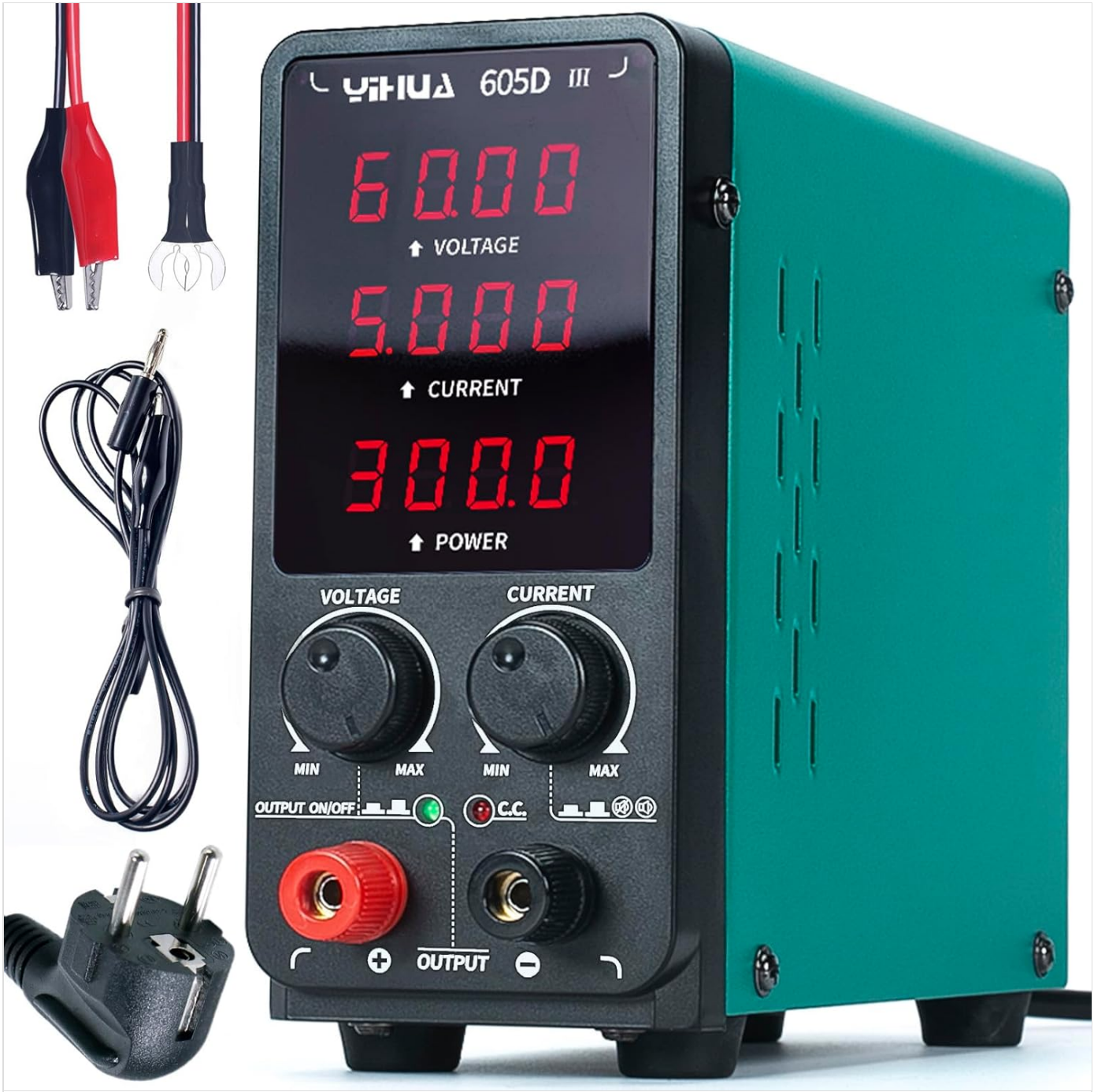
YIHUA 605D-III Adjustable DC Lab Power Supply

Model: YIHUA 605D-III | Brand: YIHUA

1. Introduction and Overview

The YIHUA 605D-III is a high-precision, adjustable DC lab power supply designed for a wide range of applications including electronics testing, repair, electroplating, and engineering training. It offers exceptional accuracy in voltage, current, and power readings, ensuring reliable performance for sensitive projects.

Key features include precise digital encoder knobs for fine adjustments, automatic Constant Current (CC) and Constant Voltage (CV) modes, and comprehensive safety protections such as short-circuit and overload protection. Its compact design saves valuable workspace while delivering a robust 300W of power.

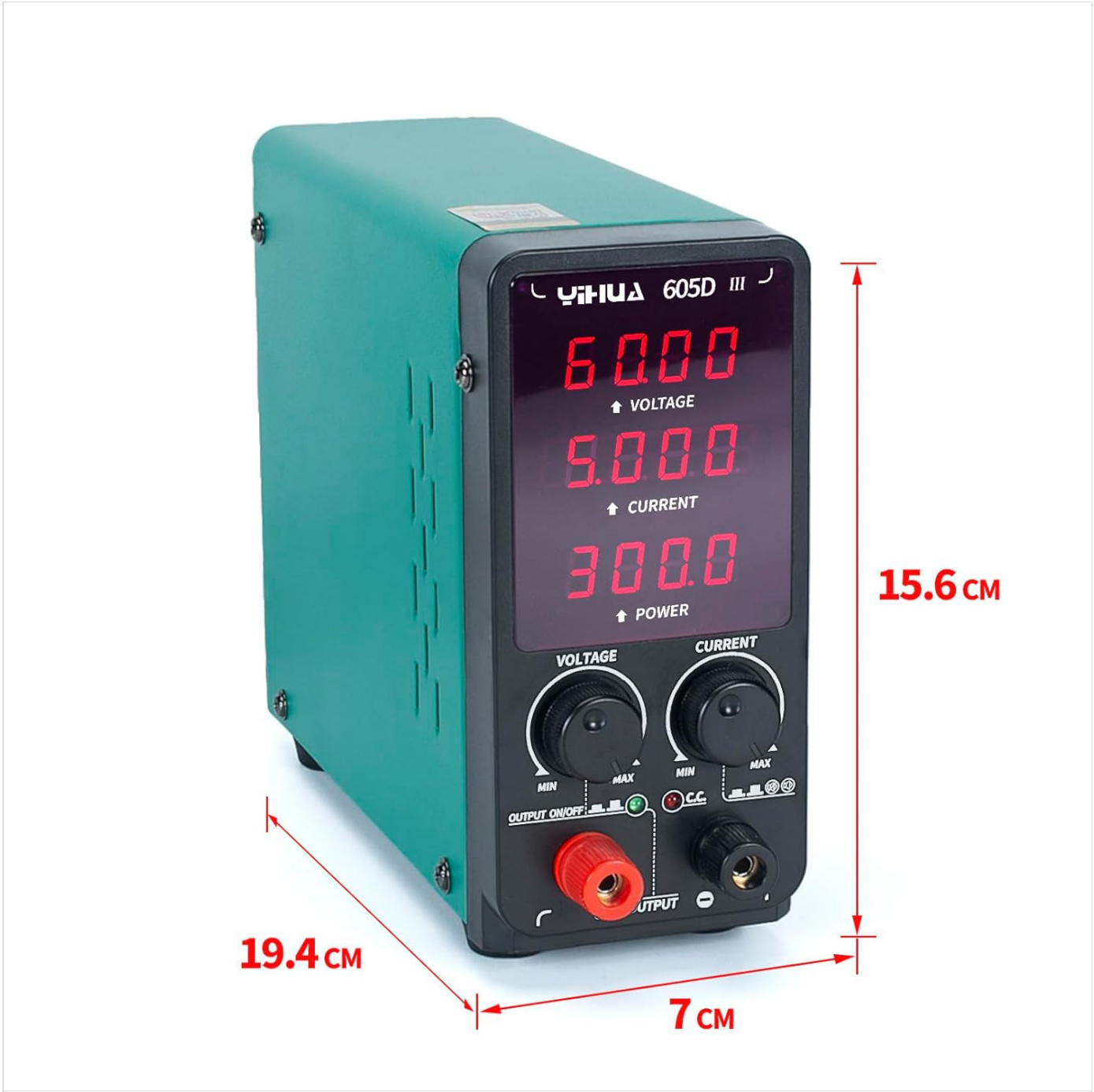


The YIHUA 605D-III power supply, showcasing its front panel with digital display, control knobs, output terminals, and included accessories like alligator clips and power cord.

2. Setup

Before operating the YIHUA 605D-III, ensure it is placed on a stable, level surface with adequate ventilation. This unit is designed for 230V AC input and comes with a European Type F plug.

1. **Unpacking:** Carefully remove the power supply and all accessories from the packaging. Verify all components are present: the power supply unit, alligator clip test leads, and power cable.
2. **Placement:** Position the unit in a location that allows for proper airflow, especially around the rear cooling fan. Avoid placing it near heat sources or in direct sunlight.
3. **Power Connection:** Connect the provided power cable to the AC input port on the rear of the power supply. Plug the other end into a grounded 230V AC power outlet.
4. **Initial Check:** Before connecting any load, ensure the output is off (OUTPUT ON/OFF button is disengaged).



The compact dimensions of the YIHUA 605D-III, measuring 19.4 cm in length, 7 cm in width, and 15.6 cm in height, highlighting its space-saving design.

3. Operating Instructions

The YIHUA 605D-III features intuitive digital encoder knobs for precise control of voltage and current output.

3.1. Powering On/Off

- To power on the unit, press the main power switch located on the rear panel. The digital display will illuminate.
- To power off, press the main power switch again.

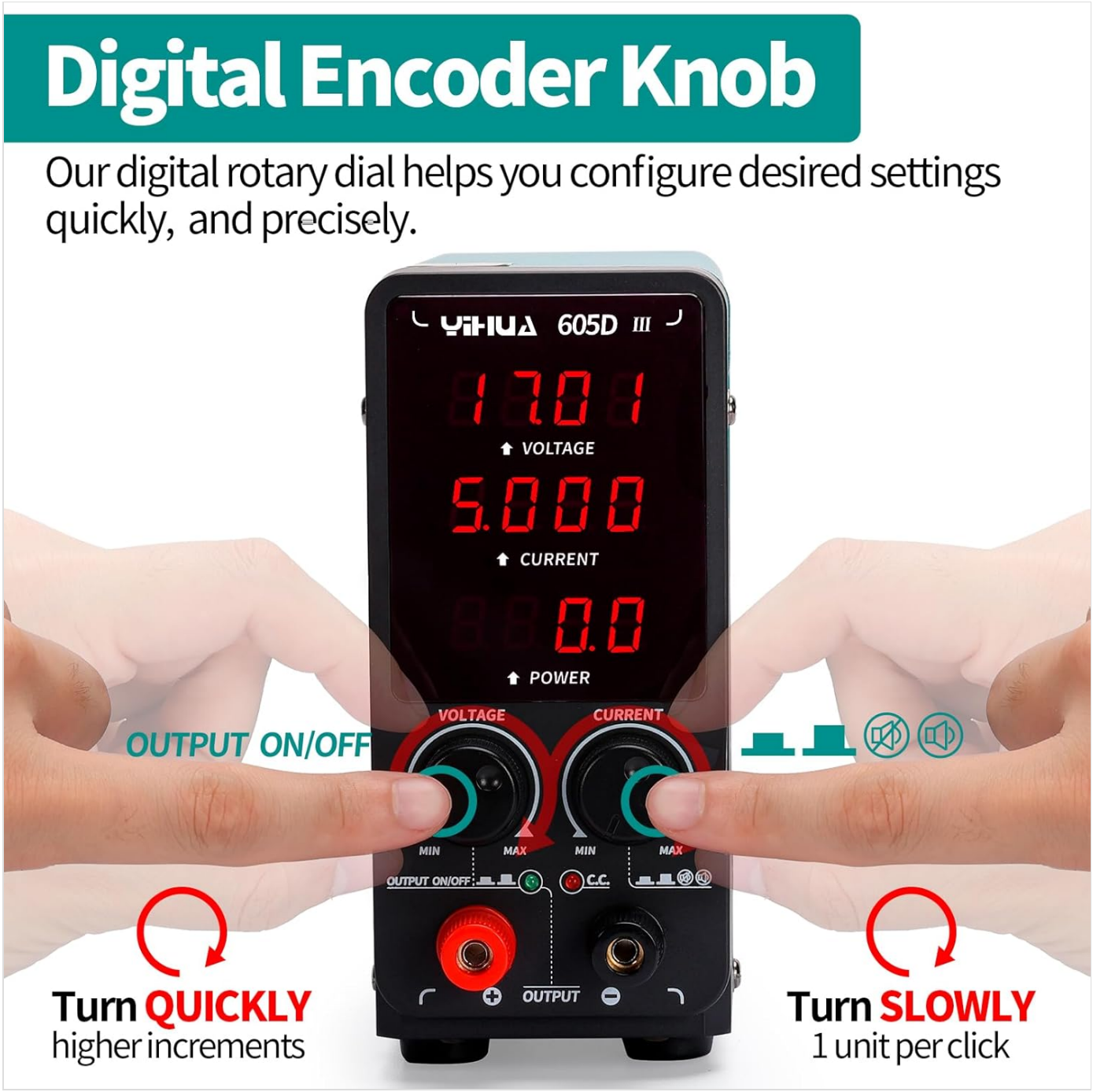
3.2. Adjusting Voltage and Current

The unit uses digital encoder knobs for setting output parameters. These provide precise control without the need for separate coarse and fine adjustment knobs.

- **Voltage Adjustment:** Rotate the 'VOLTAGE' knob to set the desired output voltage (0-60.0V). Turning the knob quickly will increase/decrease the value in larger increments, while turning it slowly will adjust in 1-unit per click

increments for fine tuning.

- **Current Adjustment:** Rotate the 'CURRENT' knob to set the desired output current limit (0-5.00A). Similar to voltage, quick turns allow for larger steps, and slow turns provide precise 1-unit per click adjustments.



Demonstration of adjusting the digital encoder knobs: turning quickly for higher increments and slowly for 1-unit per click precision.

3.3. Output Control

The red 'OUTPUT ON/OFF' button controls the power output to the terminals.

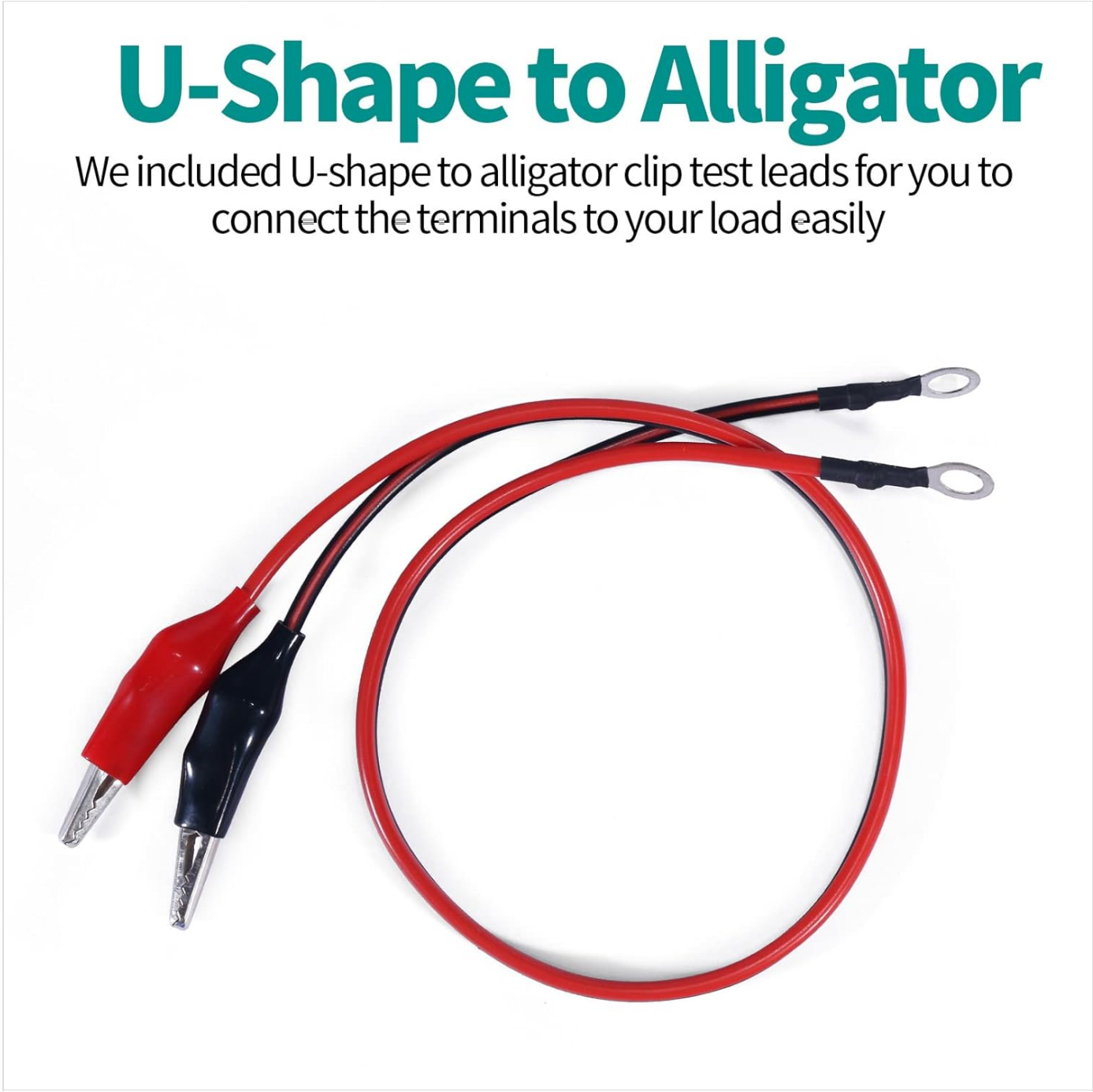
- Press the button to enable output. The indicator light will turn on.
- Press the button again to disable output. The indicator light will turn off.

3.4. Connecting a Load

Use the provided alligator clip test leads to connect your device or circuit to the output terminals.

- Connect the red lead to the positive (+) output terminal.
- Connect the black lead to the negative (-) output terminal.

- Ensure secure connections to prevent arcing or unstable readings.



The U-shape to alligator clip test leads provided for easy connection to load terminals.

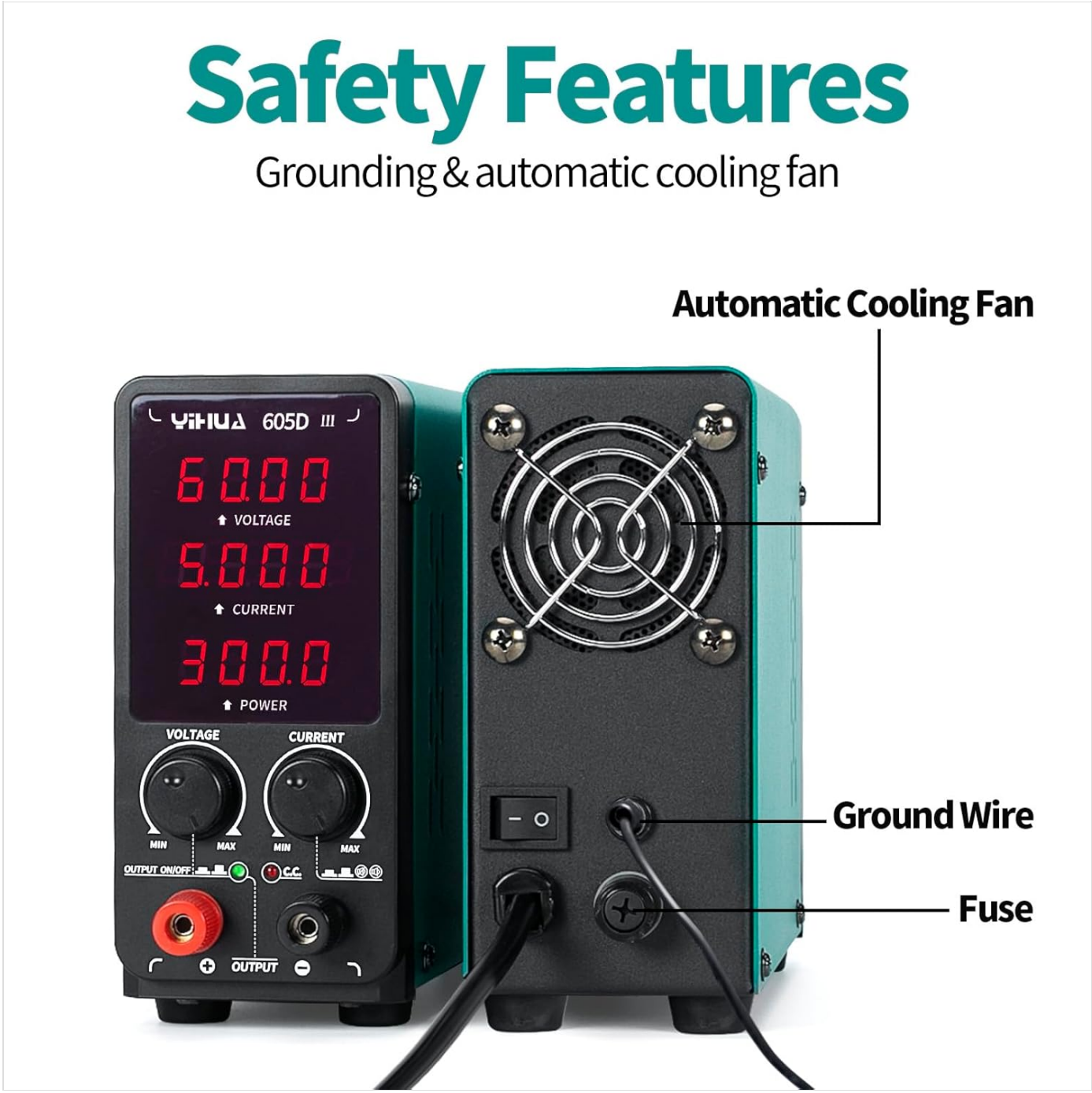
4. Safety Features

The YIHUA 605D-III incorporates several safety features to protect both the user and the connected devices.

- **Grounding:** The unit is designed with proper grounding to prevent electrical shock. Always ensure it is connected to a grounded outlet.
- **Automatic Cooling Fan:** An intelligent cooling fan on the rear panel activates automatically when the internal temperature rises, preventing overheating and ensuring stable operation.
- **Short-Circuit Protection (SCP):** If a short circuit occurs at the output, the power supply will automatically cut off the output and display an 'SCP' warning on the screen, accompanied by a buzzer sound. This protects the power supply and the connected load.
- **Overload Protection (CC/CV Mode):** The unit automatically switches between Constant Voltage (CV) and Constant Current (CC) modes based on the load. If the load attempts to draw more current than the set limit, the unit will enter

CC mode, limiting the current and protecting the load from damage.

- **Buzzer:** A built-in buzzer provides audible feedback during adjustments and alerts the user to protection mode activations.

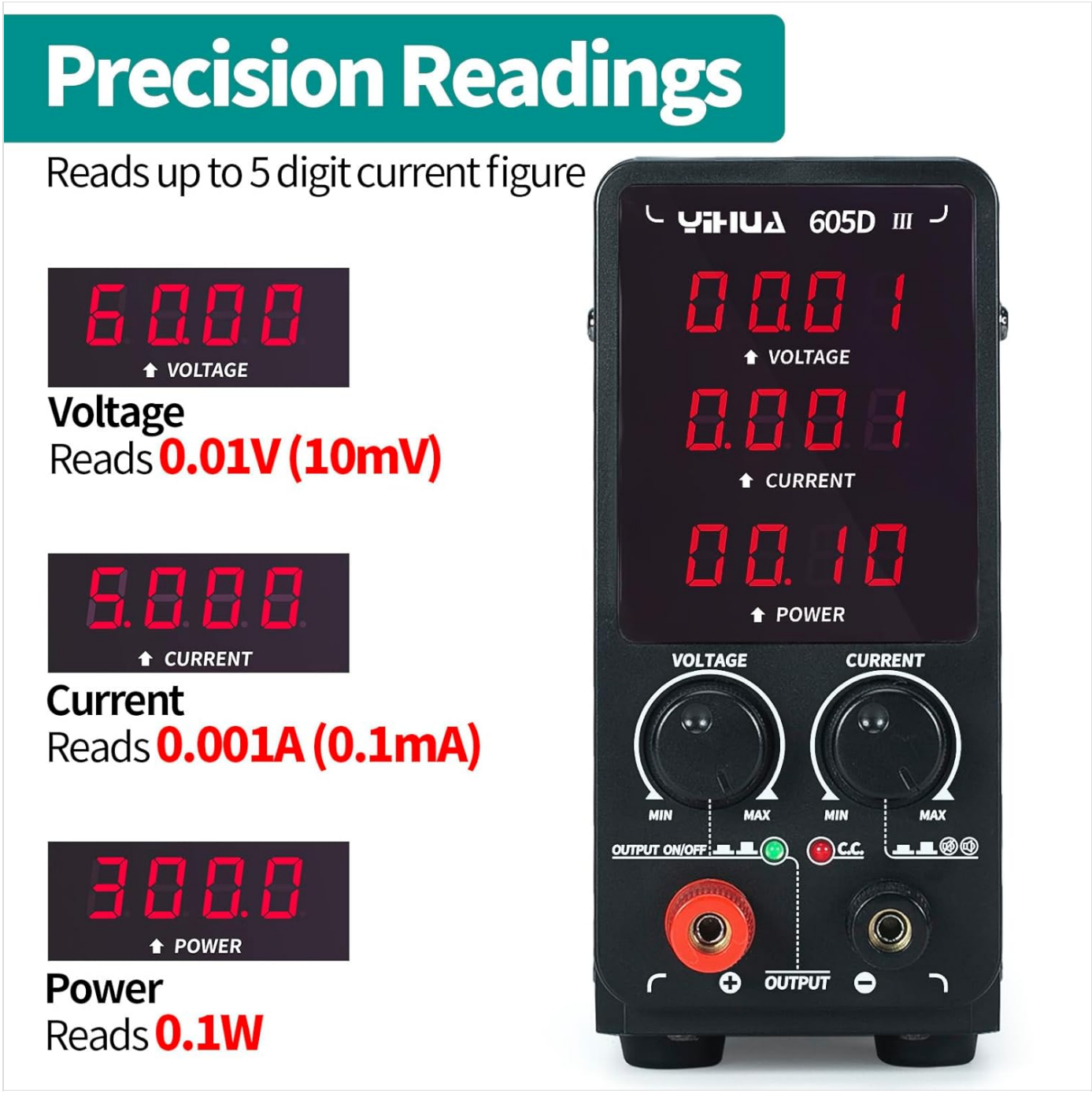


Rear view of the power supply, highlighting the automatic cooling fan, ground wire connection point, and fuse location for enhanced safety.

5. Precision Readings

The YIHUA 605D-III provides highly accurate digital readouts for voltage, current, and power.

- **Voltage Precision:** Reads up to 0.01V (10mV) with a 5-digit display.
- **Current Precision:** Reads up to 0.001A (1mA) with a 5-digit display.
- **Power Precision:** Reads up to 0.1W.

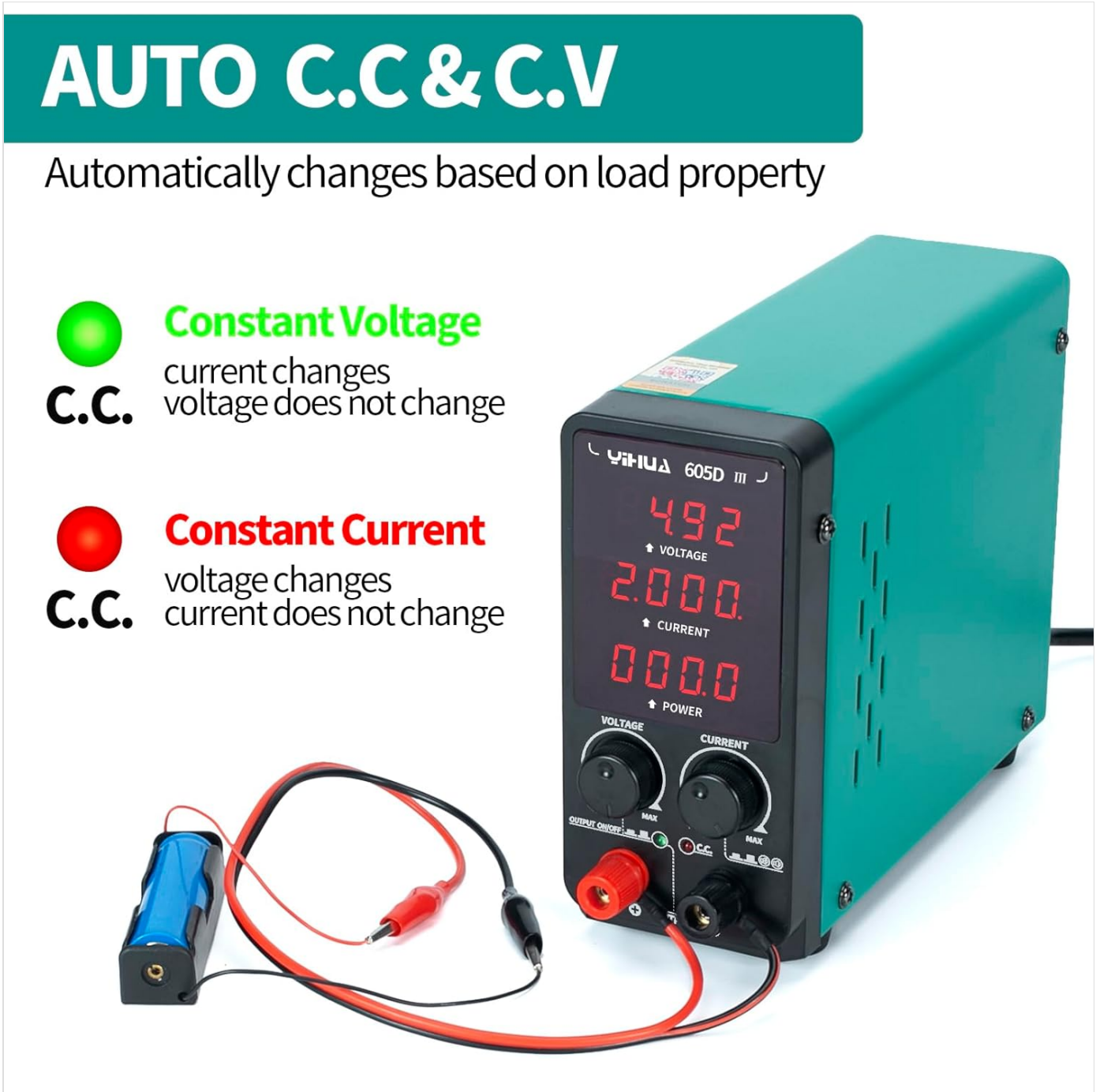


Detailed view of the power supply's display, illustrating its high precision in reading voltage, current, and power values.

6. Automatic Constant Current (CC) & Constant Voltage (CV) Modes

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

- **Constant Voltage (CV) Mode:** When the load resistance is high, the power supply operates in CV mode. The output voltage remains constant at the set value, while the current drawn by the load changes according to Ohm's law. The green 'C.V.' indicator light will be illuminated.
- **Constant Current (CC) Mode:** When the load resistance is low or a short circuit occurs, the power supply enters CC mode. The output current is limited to the set maximum value, and the voltage will drop to maintain this current. This protects the load from excessive current. The red 'C.C.' indicator light will be illuminated.



Visual explanation of the automatic switching between Constant Voltage (CV) and Constant Current (CC) modes, showing how the power supply adapts to different load conditions.

7. Specifications

Feature	Specification
Model Number	YIHUA 605D-III
Input Voltage	230V AC
Output Voltage Range	0 - 60.0 V
Output Current Range	0 - 5.00 A
Power Output	300 W
Voltage Precision	0.01 V (10 mV)

Feature	Specification
Current Precision	0.001 A (1 mA)
Power Precision	0.1 W
Dimensions (L x W x H)	19.5 x 7 x 15.7 cm
Weight	1.85 kg
Material	PVC (Polyvinyl Chloride)
Country of Origin	China

8. Troubleshooting

This section provides solutions to common issues you might encounter.

- **No Power/Display Off:**
  - Check if the power cable is securely connected to both the unit and the wall outlet.
  - Ensure the main power switch on the rear panel is in the 'ON' position.
  - Verify the wall outlet is functioning by plugging in another device.
  - Check the fuse located on the rear panel. If blown, replace it with a fuse of the same rating.
- **No Output Voltage/Current:**
  - Ensure the 'OUTPUT ON/OFF' button on the front panel is engaged (indicator light on).
  - Check the output connections to your load for proper polarity and secure contact.
  - If 'SCP' is displayed, a short circuit is detected. Disconnect the load, resolve the short, and then re-enable output.
  - If the unit is in CC mode (red 'C.C.' light on) and voltage is lower than expected, it means the current limit has been reached. Increase the current limit or reduce the load.
- **Buzzer Sounding Continuously:**
  - This typically indicates a protection mode has been activated (e.g., Short-Circuit Protection). Check the display for error codes like 'SCP'.
  - Address the underlying issue (e.g., remove short circuit) to clear the alert.
- **Overheating:**
  - Ensure the cooling fan on the rear is not obstructed.
  - Provide adequate space around the unit for ventilation.
  - Reduce the load if operating at maximum capacity for extended periods in a warm environment.

9. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your YIHUA 605D-III power supply.

- **Cleaning:** Regularly wipe the exterior of the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the unit is powered off and unplugged before cleaning.
- **Ventilation:** Keep the cooling fan and ventilation grilles on the rear and sides clear of dust and debris. Use compressed air to gently clear any blockages if necessary.

- **Storage:** When not in use for extended periods, store the power supply in a cool, dry place, away from direct sunlight and excessive humidity.
- **Cable Inspection:** Periodically inspect the power cable and test leads for any signs of damage, fraying, or exposed wires. Replace damaged cables immediately.

10. Warranty and Support

YIHUA stands behind the quality of its products.

- **Warranty:** This product comes with an exclusive 12-month technical assistance warranty within the EU.
- **Technical Support:** Our dedicated team offers professional technical support 24/7 via Amazon. For any questions, suggestions, or issues, please contact us through the Amazon platform.