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ZEEGII PDS-306M, PDS-3010M

ZEEGII PDS-306M and PDS-3010M Adjustable DC Power Supply User Manual

Model: PDS-306M, PDS-3010M

1. Introduction

Thank you for choosing the ZEEGII PDS-306M or PDS-3010M Adjustable DC Power Supply. This device is a professional laboratory-grade power regulation instrument designed for various applications requiring a stable and adjustable DC voltage and current source. This manual provides essential information for the safe and effective operation, setup, and maintenance of your power supply.

1.1 Safety Precautions

- Always connect the power supply to a grounded outlet.
- Ensure the input voltage switch (110V/220V) on the rear panel is set correctly for your local power grid before connecting the power cord. Incorrect setting can cause severe damage to the unit.
- Do not operate the device in wet or damp conditions.
- Do not open the casing; there are no user-serviceable parts inside. Refer all servicing to qualified personnel.
- Avoid short-circuiting the output terminals for extended periods. The unit has short-circuit protection, but prolonged short circuits can stress components.
- Ensure proper ventilation around the unit to prevent overheating.

2. Product Overview

The ZEEGII PDS-306M and PDS-3010M are high-precision, stabilized DC power supplies featuring a 4-digit LED display for accurate voltage and current readings. They offer both Constant Voltage (C.V.) and Constant Current (C.C.) operating modes with automatic conversion.

2.1 Key Features

- **High Precision 4-Digit LED Display:** Provides clear and accurate readouts for voltage, current, and power, visible in various lighting conditions.
- **Constant Voltage (C.V.) & Constant Current (C.C.) Mode:** Automatic switching between modes based on load conditions, indicated by front panel LEDs.
- **Coarse and Fine Adjustment Knobs:** Allows for precise setting of desired voltage and current values.
- **Multiple Safety Protections:** Includes grounding wire, leakage protection, thermal protection, voltage overload protection,

power overload protection, and short-circuit protection.

- **Intelligent Temperature Control Cooling System:** Automatically dissipates heat when internal temperature reaches 44-55 °C to ensure stable operation and prolong product life.
- **USB Output:** Integrated DC 5V/2A USB port for charging or powering compatible devices.

2.2 Front Panel Components

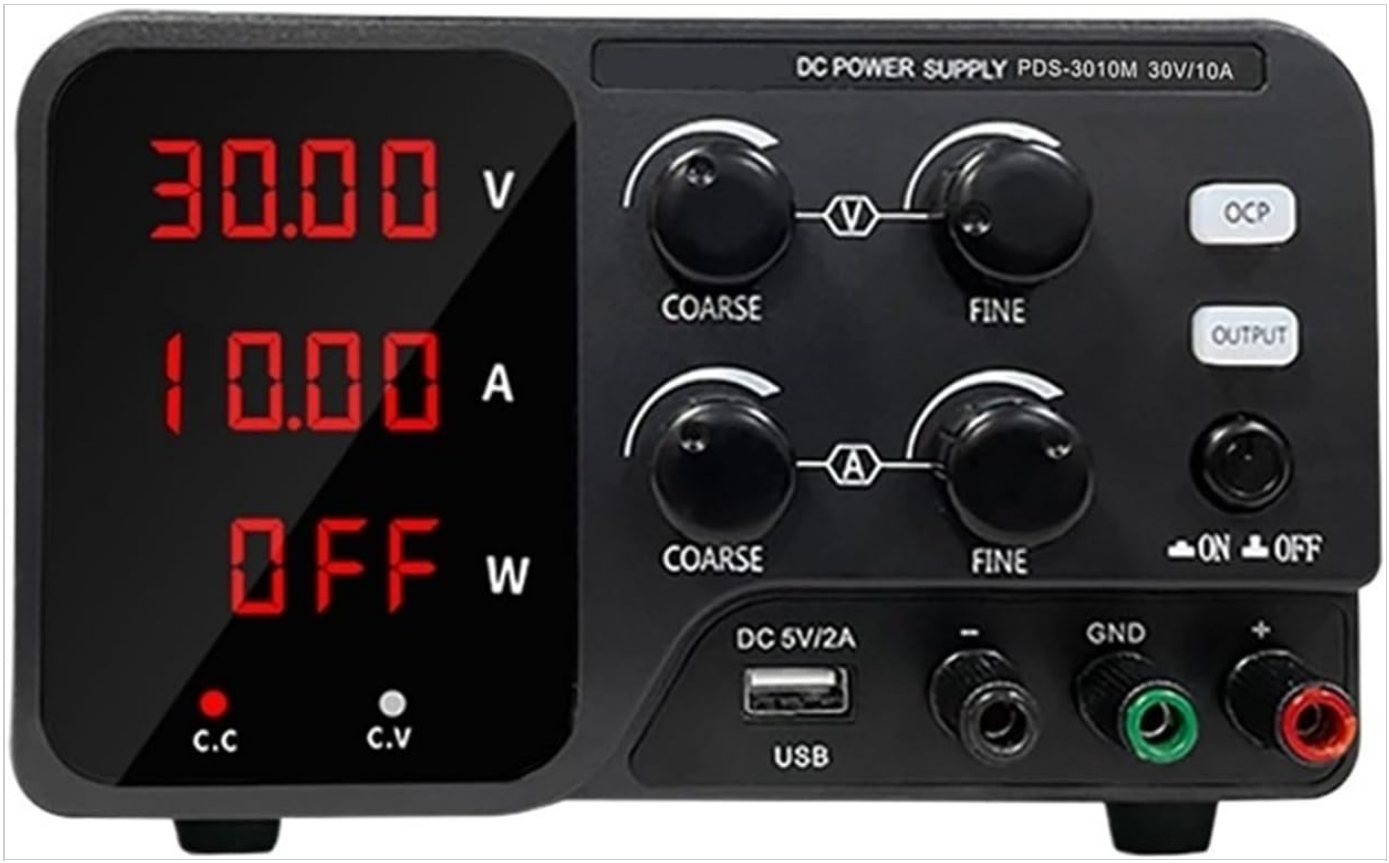


Figure 1: Front panel of the ZEEGII PDS-3010M DC Power Supply. This image displays the 4-digit LED display showing voltage (30.00 V), current (10.00 A), and power (OFF W). It also highlights the coarse and fine adjustment knobs for voltage and current, the OCP (Over Current Protection) button, Output ON/OFF switch, USB 5V/2A port, and output terminals (GND, positive, negative).

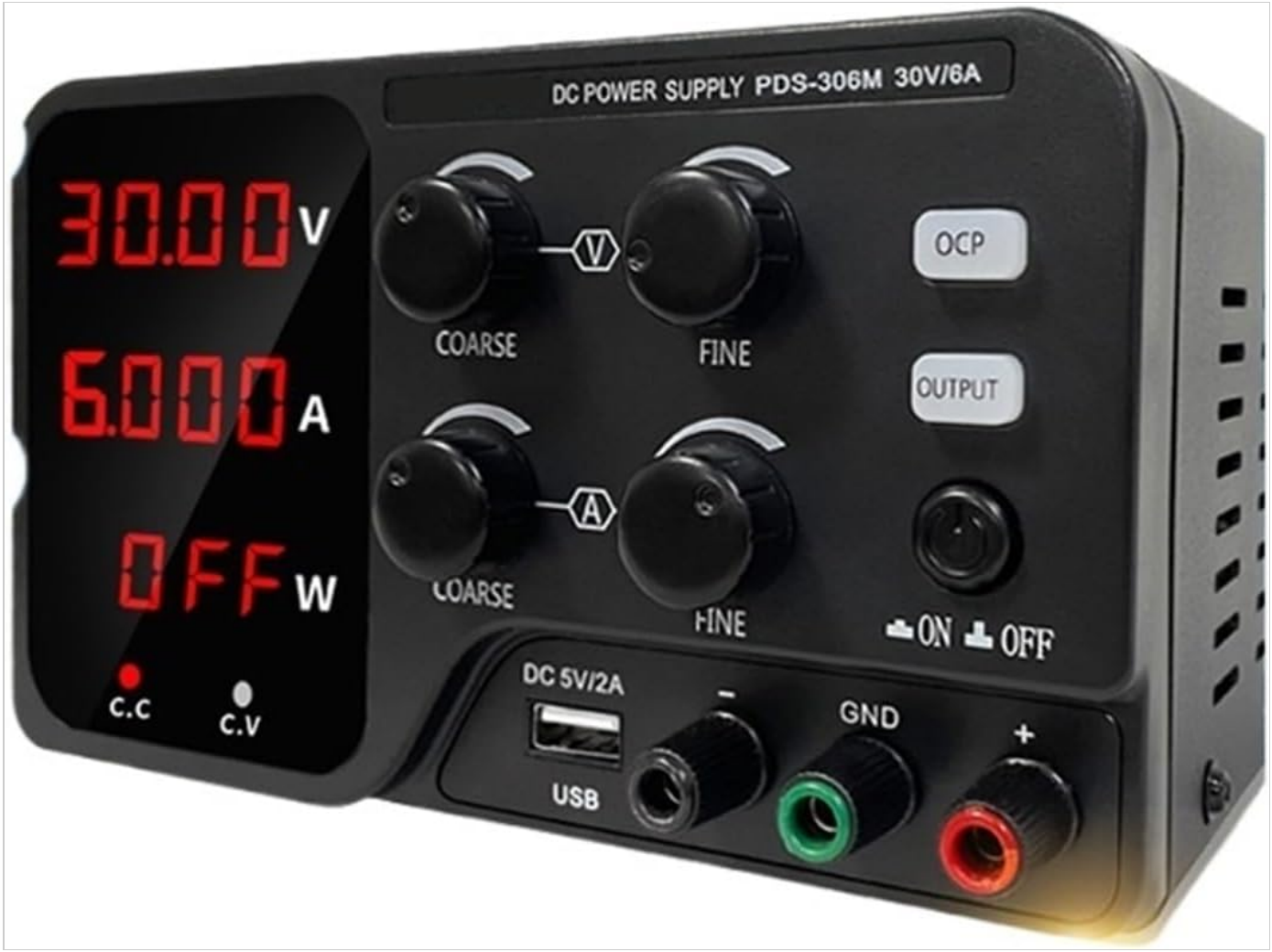


Figure 2: Front panel of the ZEEGII PDS-306M DC Power Supply. Similar to the PDS-3010M, this model shows voltage (30.00 V), current (6.000 A), and power (OFF W) on its 4-digit LED display. All controls and ports are identical in layout to the PDS-3010M.

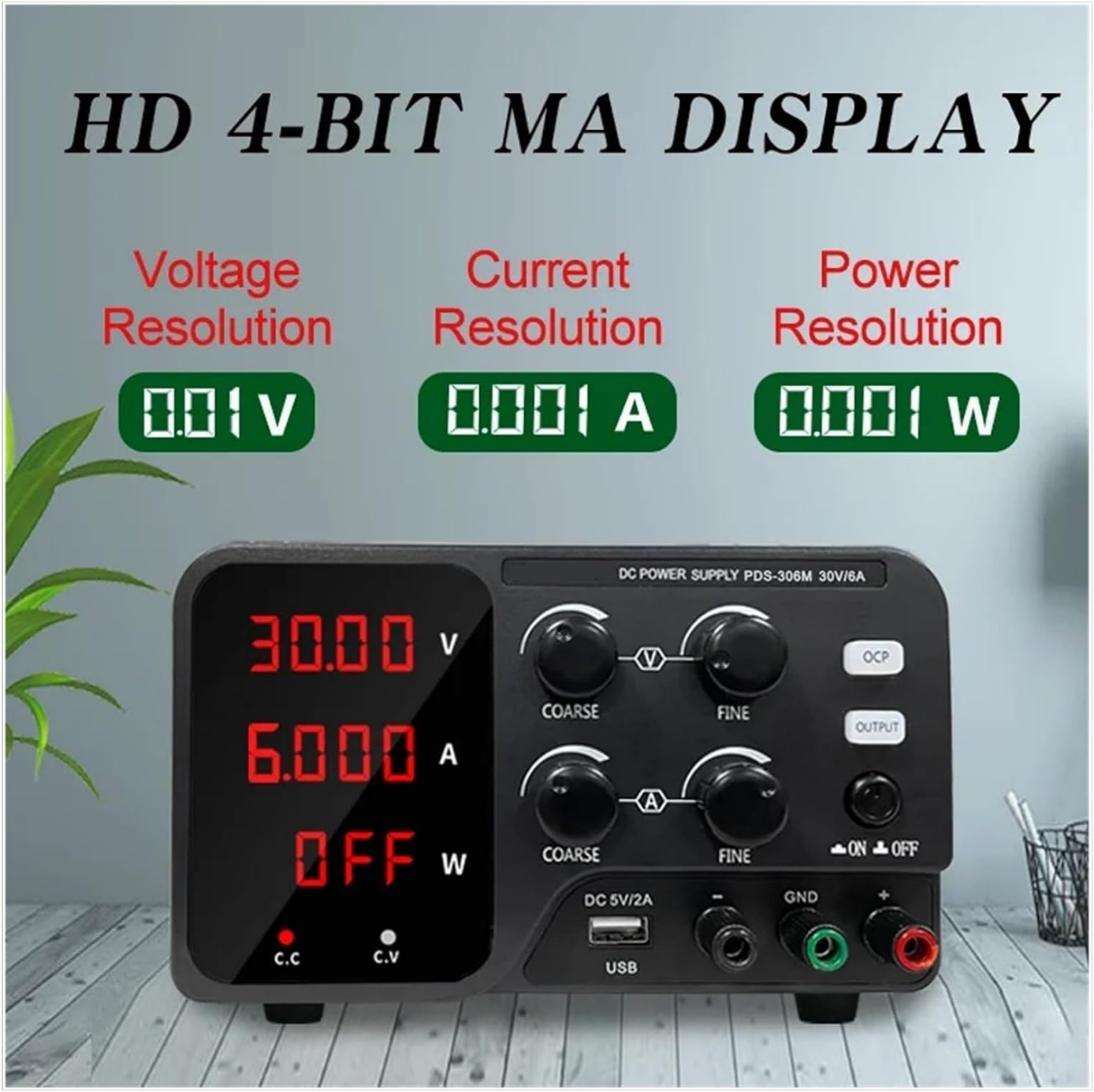


Figure 3: Close-up view of the 4-digit LED display, emphasizing its high resolution. The display shows Voltage Resolution (0.01 V), Current Resolution (0.001 A), and Power Resolution (0.001 W), ensuring precise measurements.

2.3 Rear Panel Components

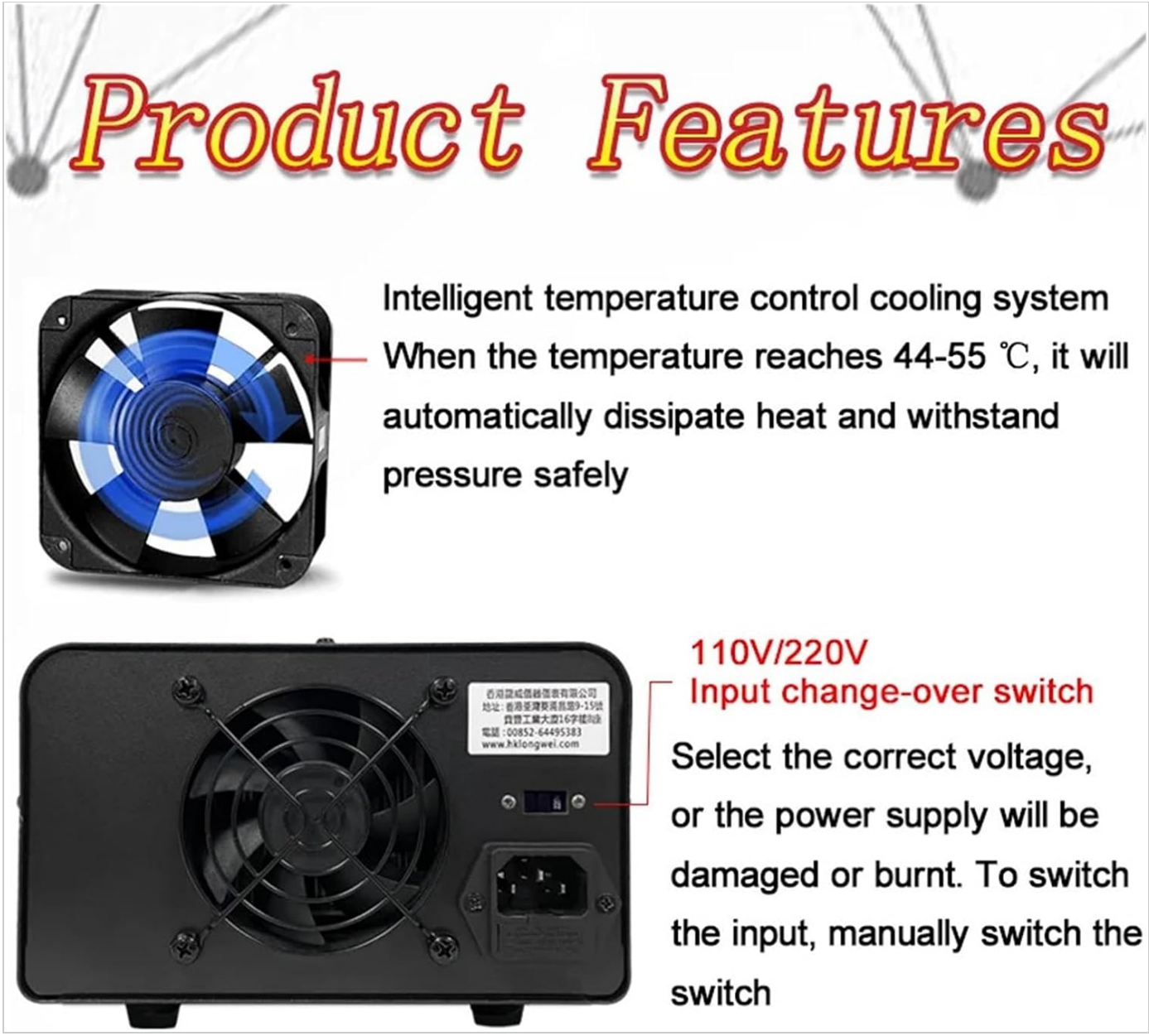


Figure 4: Rear panel of the ZEEGII DC Power Supply. This image highlights the intelligent temperature control cooling fan for heat dissipation and the crucial 110V/220V input change-over switch. This switch must be set correctly to match the local power supply.

3. Setup

3.1 Unpacking and Inspection

1. Carefully remove the power supply from its packaging.
2. Inspect the unit for any signs of physical damage that may have occurred during transit. If damage is found, contact your supplier immediately.
3. Verify that all accessories, including the power cord and user manual, are present.

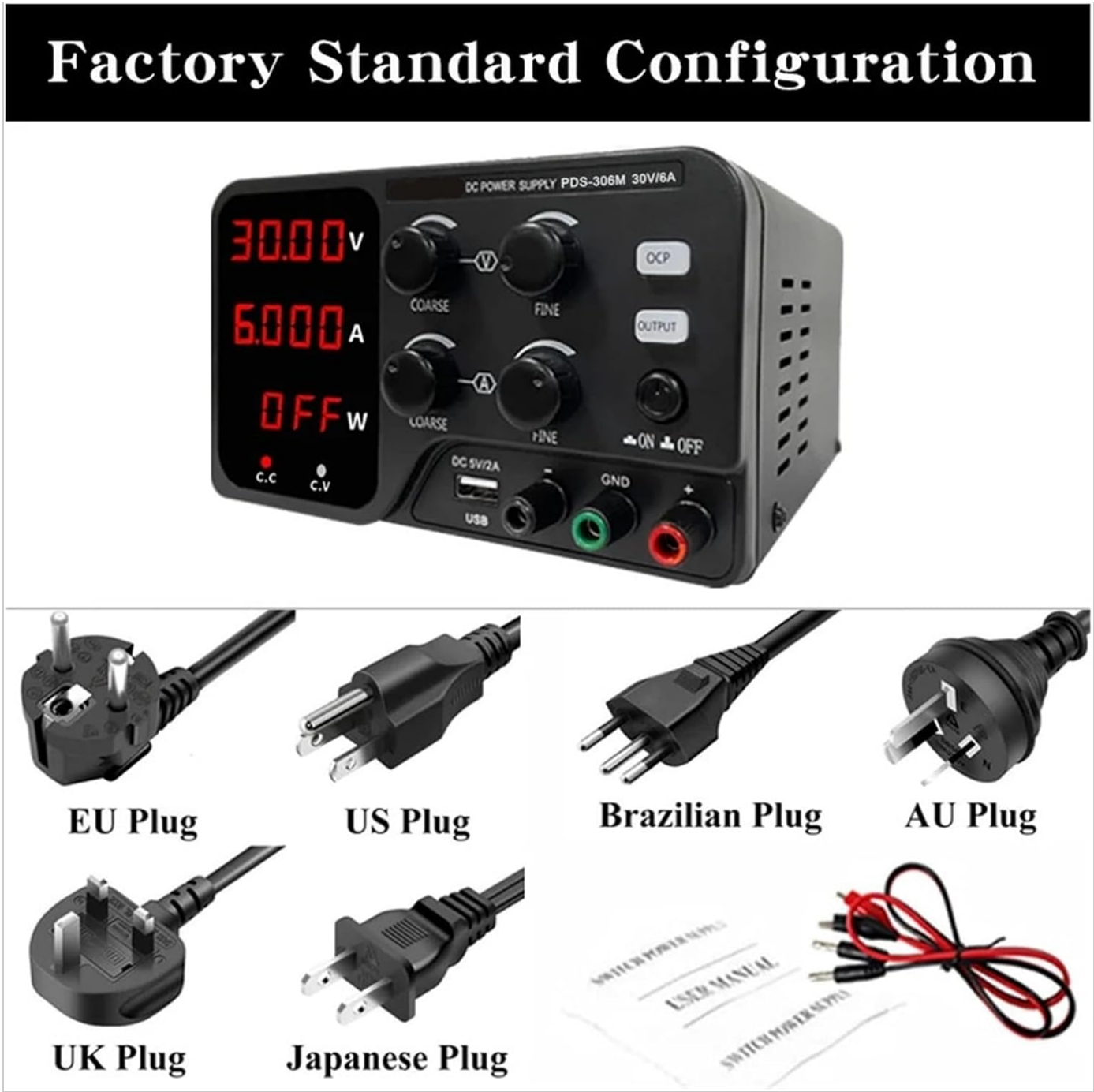


Figure 5: Standard configuration showing the ZEEGII DC Power Supply unit and various power plug types (EU, US, Brazilian, AU, UK, Japanese) that may be included depending on region, along with the user manual and output cables.

3.2 Power Connection

1. **Crucial Step:** Before connecting the power cord, locate the 110V/220V input change-over switch on the rear panel (refer to Figure 4). Set this switch to match your local mains voltage (e.g., 110V for North America, 220V for most of Europe). Failure to do so will damage the power supply.
2. Connect the provided power cord to the AC inlet on the rear panel of the power supply.
3. Plug the other end of the power cord into a properly grounded electrical outlet.

3.3 Connecting the Load

1. Ensure the power supply is turned OFF using the front panel ON/OFF switch.
2. Connect the positive (+) terminal of your load to the red output terminal of the power supply.
3. Connect the negative (-) terminal of your load to the black output terminal of the power supply.
4. For safety, connect the ground (GND) terminal of the power supply to the ground of your circuit if required.

4. Operating Instructions

4.1 Powering On and Initial Settings

1. After connecting the power cord and load, turn on the power supply using the front panel ON/OFF switch. The LED display will illuminate.
2. Before enabling the output, set the desired voltage and current limits.

4.2 Adjusting Voltage and Current

- **Voltage Adjustment:** Use the 'COARSE' and 'FINE' voltage knobs to set the desired output voltage. The 'COARSE' knob makes large adjustments, while the 'FINE' knob allows for precise tuning.
- **Current Adjustment:** Similarly, use the 'COARSE' and 'FINE' current knobs to set the maximum output current limit. This acts as a current protection threshold for your connected load.

4.3 Output Control

Press the 'OUTPUT' button to enable or disable the power supply output to the connected load. When the output is enabled, the corresponding indicator will light up, and voltage/current will be supplied.

4.4 Constant Voltage (C.V.) and Constant Current (C.C.) Modes

The power supply automatically switches between Constant Voltage (C.V.) and Constant Current (C.C.) modes depending on the load and your set limits:

- **C.V. Mode:** When the load resistance is high, the output current is below the set current limit, and the power supply maintains the set output voltage. The 'C.V.' indicator will be lit.
- **C.C. Mode:** When the load resistance is low, causing the current to reach the set current limit, the power supply will automatically reduce the output voltage to prevent the current from exceeding the limit. The 'C.C.' indicator will be lit.

4.5 Over Current Protection (OCP)

The OCP function provides an additional layer of protection. When activated, if the output current exceeds a preset threshold, the output will be shut off to protect both the power supply and the connected load. Consult the full manual for detailed OCP setup and operation.

4.6 USB Output (DC 5V/2A)

The front panel includes a USB port providing a fixed 5V DC output at up to 2A, suitable for charging mobile devices or powering small USB-compatible electronics.

5. Maintenance

5.1 Cleaning

To clean the unit, disconnect it from the power source and wipe the exterior with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure no liquids enter the casing.

5.2 Ventilation

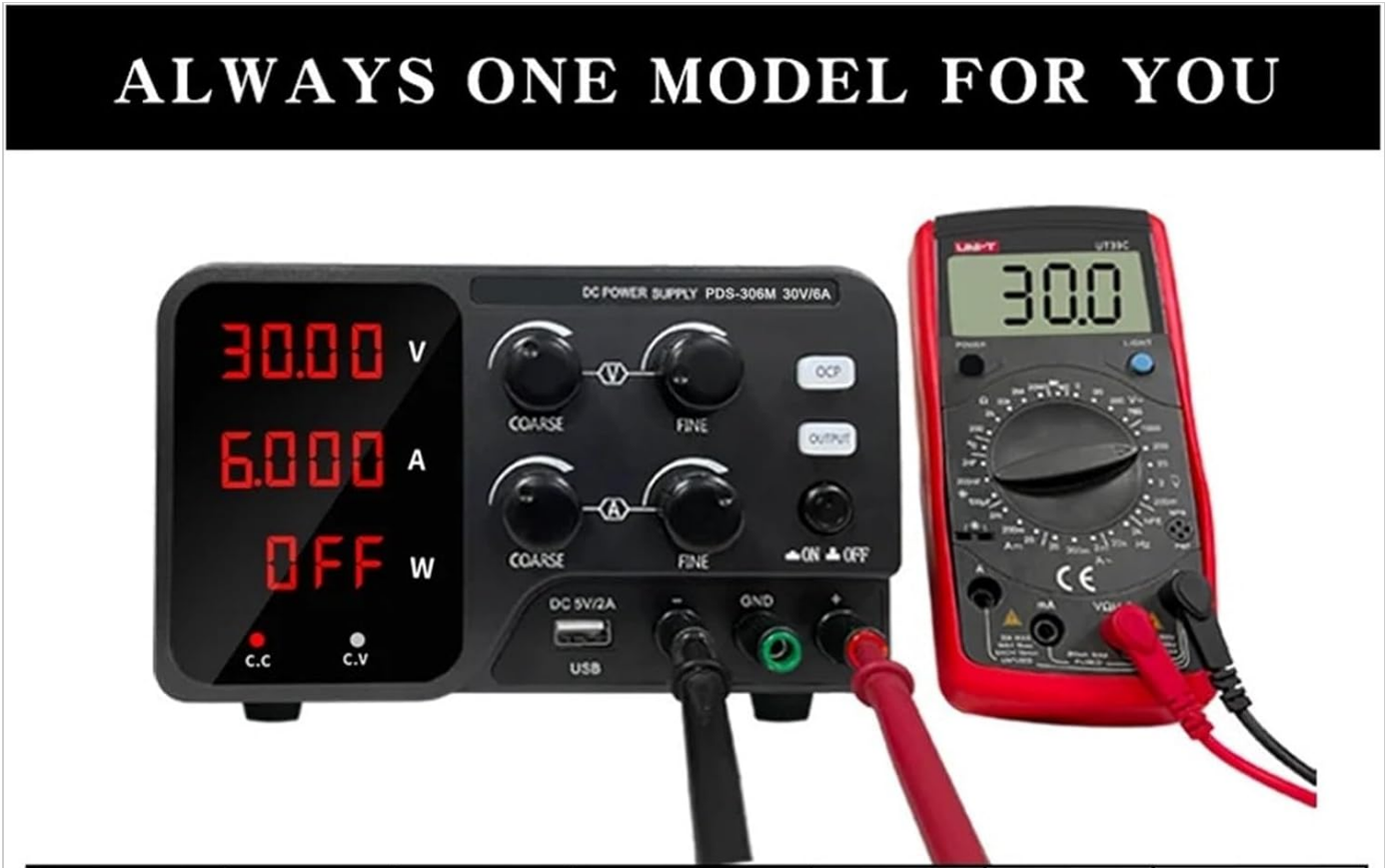
Ensure the cooling fan on the rear panel and ventilation grilles are free from dust and obstructions. The intelligent cooling system will activate automatically to maintain optimal operating temperature.

6. Troubleshooting

- **No Power:** Check the power cord connection, the mains outlet, and the 110V/220V switch setting on the rear panel.
- **No Output Voltage/Current:** Ensure the 'OUTPUT' button is pressed (indicator lit). Check if the current limit is set too low for the load, or if OCP has been triggered.
- **C.C. Indicator Always On:** This indicates the power supply is operating in Constant Current mode, meaning the load is drawing the maximum set current. If this is unexpected, check your load's resistance or increase the current limit.
- **Unit Overheating:** Ensure adequate ventilation around the unit. Check if the cooling fan is operating. If overheating persists, reduce the load or discontinue use and contact support.
- **Incorrect Readings:** Verify connections to the load. If readings are consistently inaccurate, the unit may require calibration or service.

7. Specifications

The ZEEGII PDS series offers various models with different output capabilities. Refer to the table below for detailed parameters.



Parameter / Model	Voltage Output	Voltage Resolution	Voltage Display accuracy	Current Output	Current Resolution	Current Display accuracy
PDS-303M	0-30V	0.01V	±0.3% FS	0-3A	0.001A	±0.5% FS
PDS-306M	0-30V	0.01V	±0.3% FS	0-6A	0.001A	±0.5% FS
PDS-3010M	0-30V	0.01V	±0.3% FS	0-10A	0.01A	±0.5% FS
PDS-603M	0-60V	0.01V	±0.3% FS	0-3A	0.001A	±0.5% FS
PDS-605M	0-60V	0.01V	±0.3% FS	0-5A	0.001A	±0.5% FS
PDS-1202M	0-120V	0.1V	±0.3% FS	0-2A	0.001A	±0.5% FS
PDS-1203M	0-120V	0.1V	±0.3% FS	0-3A	0.001A	±0.5% FS

Figure 6: Comparison table of ZEEGII PDS series models, including PDS-303M, PDS-306M, PDS-3010M, PDS-603M, PDS-605M, PDS-1202M, and PDS-1203M. The table details Voltage Output, Voltage Resolution, Voltage Display Accuracy, Current Output, Current

Resolution, and Current Display Accuracy for each model.

General Specifications

Parameter	Value
Input Voltage	110V AC / 220V AC (Switchable)
Display Type	4-Digit LED
USB Output	DC 5V / 2A
Operating Modes	Constant Voltage (C.V.), Constant Current (C.C.)
Safety Protections	Grounding, Leakage, Thermal, Voltage Overload, Power Overload, Short-circuit
Cooling System	Intelligent Temperature Control Fan
Item Weight	Approximately 2000 Grams (4.41 pounds)
Package Dimensions	Approximately 1.18 x 0.79 x 0.39 inches (Note: This dimension seems incorrect for the actual product and likely refers to packaging of a small component. Refer to product images for actual unit size.)

8. Warranty and Support

This product is sold without an explicit warranty. For technical support or inquiries regarding your ZEEGII PDS-306M or PDS-3010M DC Power Supply, please contact your point of purchase or the manufacturer directly. Ensure you have your product model number and purchase details available when seeking assistance.