EARNMee 80V10A*3

EARNMee 80V10A*3 3-Channel Programmable DC Power Supply User Manual

Model: 80V10A*3

1. Introduction

This manual provides essential information for the safe and effective operation of your EARNMee 80V10A*3 3-Channel Programmable DC Power Supply. This device is designed for laboratory use, offering stable output for various applications including photovoltaic system tests, data center equipment checks, and aerospace component research. It features programmable 3-channel output, RS485/RS232/USB communication, and comprehensive safety protections.

2. Safety Information

Always observe the following safety precautions to prevent injury and damage to the device or connected equipment:

- Ensure proper grounding before operation.
- Do not operate the device in wet or damp conditions.
- Verify input voltage compatibility before connecting to a power source.
- Do not attempt to open or repair the device. Refer servicing to qualified personnel.
- Keep ventilation openings clear to prevent overheating.

The EARNMee 80V10A*3 includes five powerful protection mechanisms:

- **Over-Voltage Protection (OVP)**
- **Over-Current Protection (OCP)**
- **Over-Power Protection (OPP)**
- **Over-Temperature Protection (OTP)**
- **Short-Circuit Protection (SCP)**

Figure 2.1: Multiple Protection Features

Description: This image illustrates the various safety protections integrated into the EARNMee DC Power Supply, including over-voltage, short-circuit, over-current, over-temperature, and over-load protection, ensuring safe operation in laboratory environments.

3. Product Overview

3.1 Front Panel Layout

Product Introduction

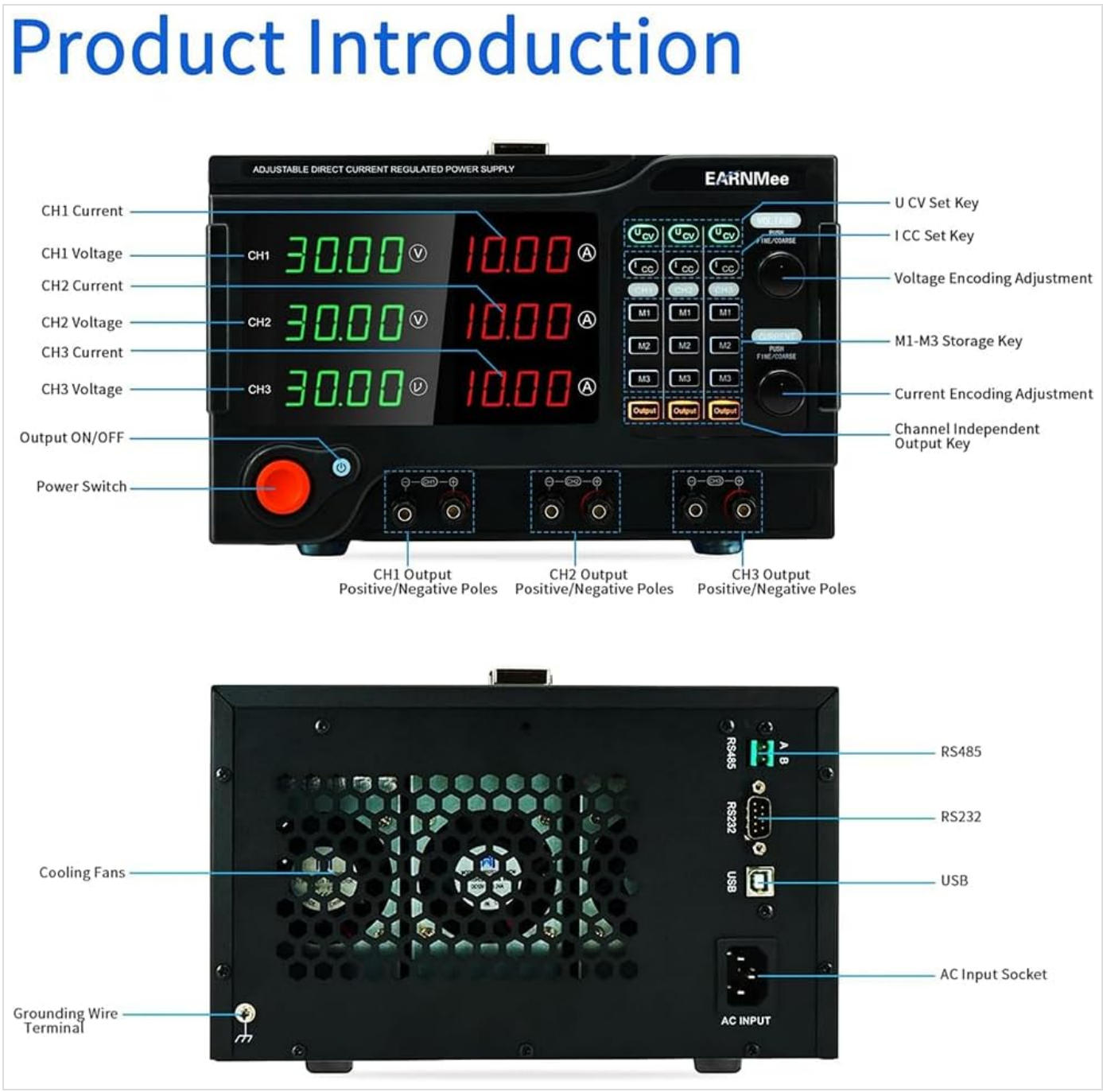

Figure 3.1: Front Panel Controls and Displays

Description: This image displays the front panel of the EARNMee DC Power Supply, highlighting key components such as the 4-LED digital display for each of the three channels (CH1, CH2, CH3) showing voltage and current, the power switch, output ON/OFF buttons, U CV Set Key, I CC Set Key, Voltage Encoding Adjustment, Current Encoding Adjustment, M1-M3 Storage Keys, and Channel Independent Output Keys. Each channel also has positive and negative output poles.

3.2 Rear Panel Layout

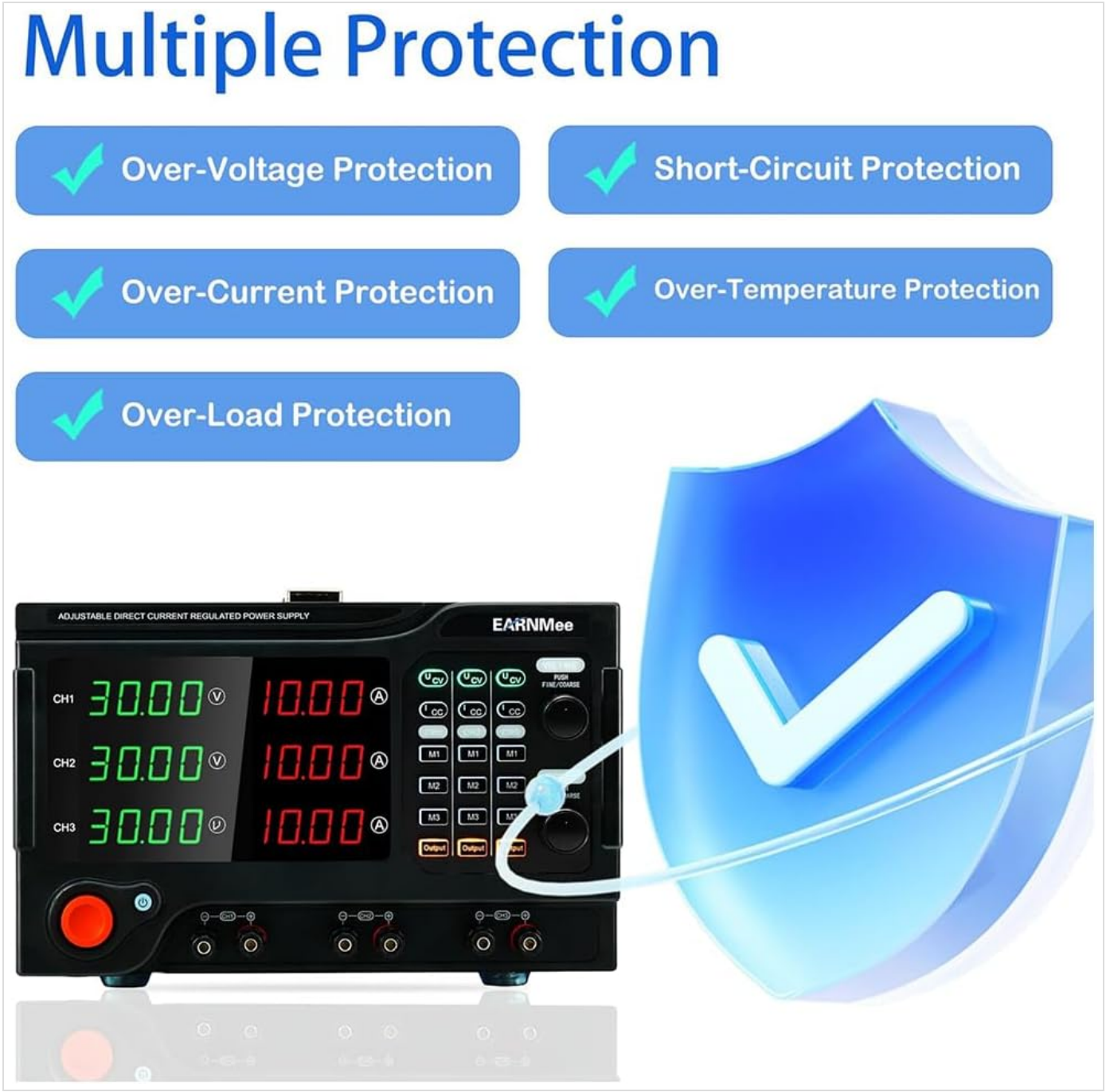

Figure 3.2: Rear Panel Connections

Description: This image shows the rear panel of the EARNMee DC Power Supply, detailing the cooling fans, grounding wire terminal, AC input socket, and communication interfaces including RS485, RS232, and USB ports.

4. Setup

4.1 Unpacking and Placement

- Carefully remove the power supply from its packaging.
- Place the unit on a stable, level surface with adequate ventilation around the cooling fans.
- Ensure the operating environment is free from excessive dust, moisture, and extreme temperatures.

4.2 Power Connection

- Connect the provided AC power cord to the AC Input Socket on the rear panel (Figure 3.2).
- Plug the other end of the power cord into a grounded electrical outlet.

- Ensure the grounding wire terminal is properly connected to an earth ground for safety.

4.3 PC Communication Setup

The power supply supports RS485, RS232, and USB communication interfaces for computer program control using the MODBUS protocol.

- Connect the appropriate cable (RS485, RS232, or USB) from the power supply's rear panel to your computer.
- Install the necessary driver software (if required) and the control application provided by EARNMee.
- Refer to the software's user guide for detailed instructions on establishing communication and controlling the device via PC.

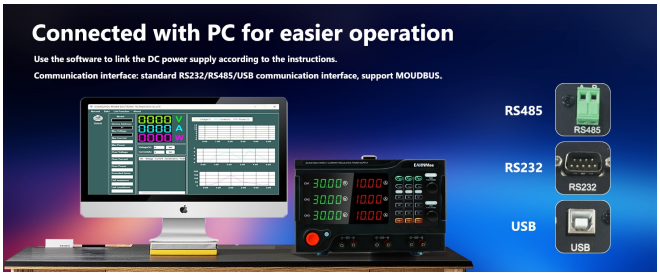

Figure 4.1: PC Connection Interfaces

Description: This diagram illustrates how the DC power supply can be connected to a personal computer using standard RS232, RS485, or USB communication interfaces, enabling remote control and data monitoring via software.

5. Operating Instructions

5.1 Powering On/Off

- To power on, press the red Power Switch on the front panel. The 4-LED digital display will illuminate.
- To power off, press the Power Switch again.

5.2 Setting Voltage and Current

Each of the three channels (CH1, CH2, CH3) can be set independently.

- **Voltage Adjustment:** Press the 'U CV' Set Key. Use the Voltage Encoding Adjustment knob to adjust the desired voltage value.
- **Current Adjustment:** Press the 'I CC' Set Key. Use the Current Encoding Adjustment knob to adjust the desired current limit.
- The 4-LED digital display shows real-time voltage and current for each channel.

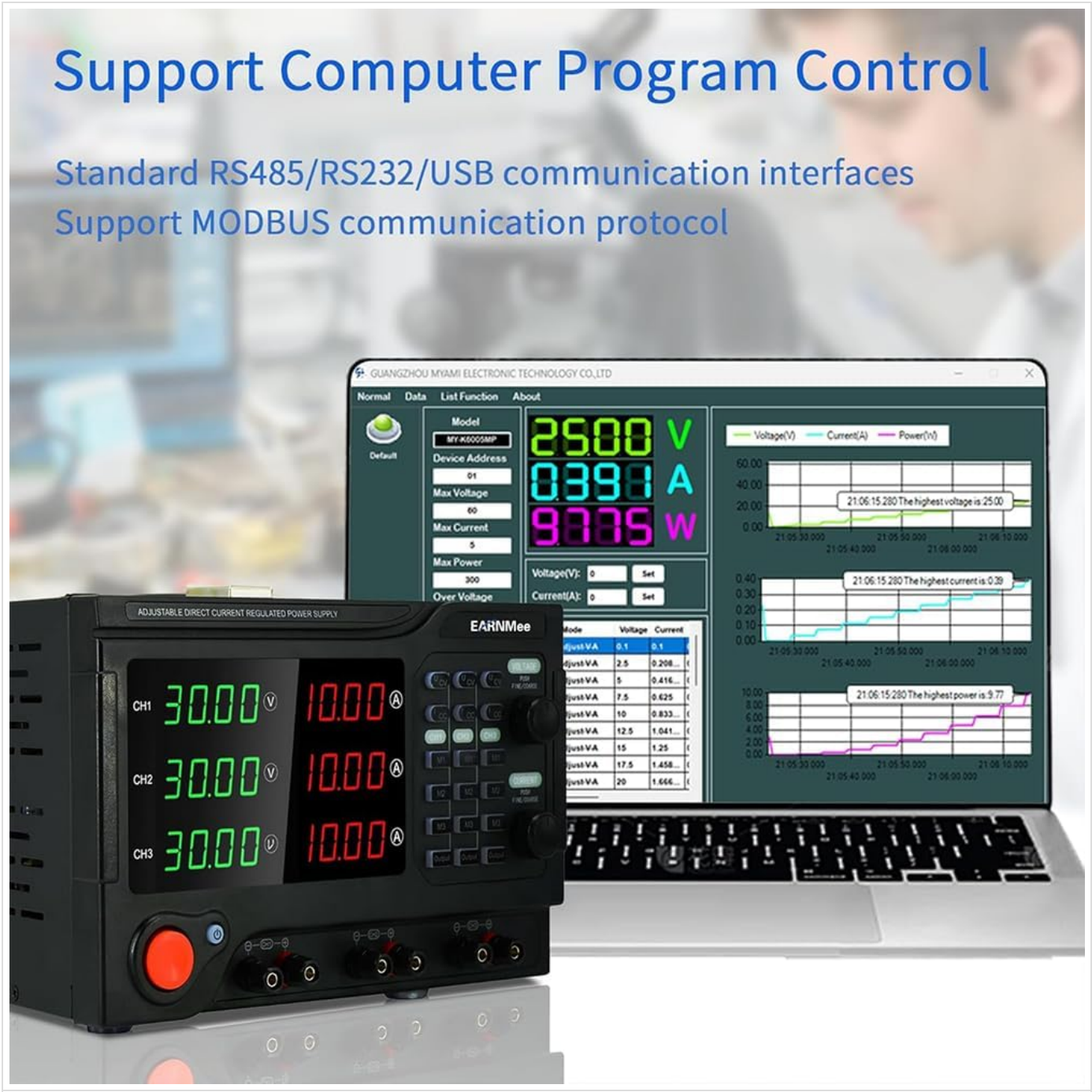

Figure 5.1: Independent Channel Output Display

Description: This image highlights the independent output capability of the power supply, showing the 4-bit LED display for each of the three channels, where voltage and current can be set and monitored separately.

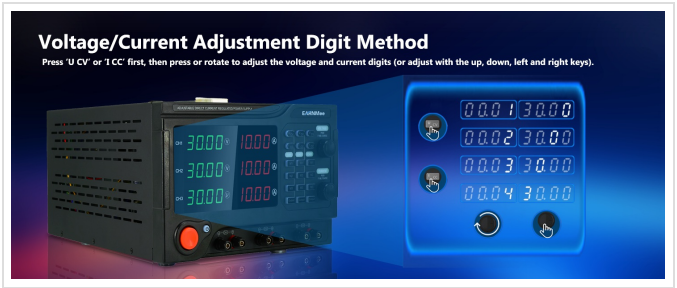

Figure 5.2: Voltage/Current Adjustment Method

Description: This diagram explains the process of adjusting voltage and current digits. Users press the 'U CV' or 'I CC' key, then rotate the corresponding knob to set the desired values. The display shows the adjustable digits.

5.3 Output Control

- Press the 'Output' button for each channel to enable or disable its output.
- The status of each channel's output is indicated on the display.

5.4 Storing and Recalling Settings

The device allows for storing and recalling up to three sets of parameter settings (M1, M2, M3).

- **To Store:** Set the desired voltage and current for each channel. Press and hold one of the M1, M2, or M3 keys until the display confirms storage.
- **To Recall:** Briefly press the M1, M2, or M3 key corresponding to the saved settings you wish to recall.

6. Module Combinations

The EARNMee DC Power Supply offers 11 module options for each output channel, allowing for 1331 combinations to meet diverse testing requirements.

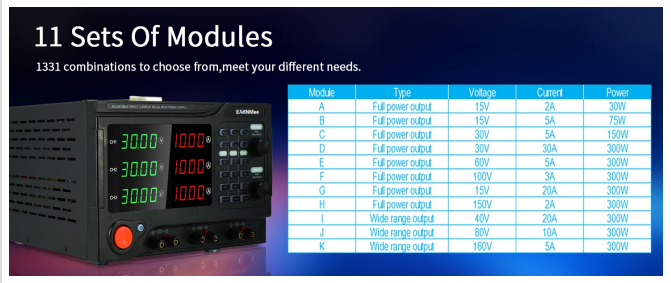

Figure 6.1: Module Options Table

Description: This image presents a table detailing the 11 available module options (A through K), specifying their type (Full power output or Wide range output), corresponding voltage, current, and power ratings. This allows users to select the appropriate module for their specific application.

Table 6.1: Available Module Options

Module	Type	Voltage	Current	Power
A	Full power output	15V	2A	30W
B	Full power output	15V	5A	75W
C	Full power output	30V	5A	150W
D	Full power output	30V	10A	300W
E	Full power output	60V	5A	300W
F	Full power output	100V	3A	300W
G	Full power output	15V	20A	300W
H	Full power output	150V	2A	300W
I	Wide range output	40V	20A	300W
J	Wide range output	80V	10A	300W
K	Wide range output	160V	5A	300W

7. Maintenance

7.1 Cleaning

- Disconnect the power supply from the AC outlet before cleaning.
- Use a soft, dry cloth to wipe the exterior of the unit.
- Do not use abrasive cleaners or solvents.
- Periodically clean the ventilation openings to ensure proper airflow and prevent dust buildup.

7.2 Storage

- Store the power supply in a cool, dry environment when not in use.
- Protect the unit from physical shock and extreme temperatures.

8. Troubleshooting

If you encounter issues with your EARNMee DC Power Supply, refer to the following common problems and solutions:

Table 8.1: Troubleshooting Guide

Problem	Possible Cause	Solution
No power/display	Power cord not connected; Power switch off; Outlet fault	Check power cord connection; Turn on power switch; Test outlet with another device
Output not enabled	Channel output button off	Press the 'Output' button for the desired channel
Voltage/Current cannot be set	Incorrect mode; Knob not responding	Ensure 'U CV' or 'I CC' key is pressed; Contact support if knob is unresponsive
Protection activated (e.g., OVP, OCP)	Output exceeds set limits; Short circuit; Overheating	Reduce output settings; Check for short circuits in load; Ensure adequate ventilation
PC communication failure	Incorrect cable; Driver not installed; Software settings incorrect	Verify cable type and connection; Install correct drivers; Check software communication settings

If the problem persists after attempting these solutions, please contact EARNMee customer support for assistance.

9. Specifications

- **Model:** 80V10A*3
- **Output Channels:** 3 independent channels
- **Max Output Voltage:** 80V per channel
- **Max Output Current:** 10A per channel
- **Output Wattage:** 2400 Watts (Total)
- **Display:** 4-LED Digital Display
- **Communication Interfaces:** RS485, RS232, USB (MODBUS protocol support)
- **Protection Features:** Over-Voltage, Over-Current, Over-Power, Over-Temperature, Short-Circuit Protection
- **Programmable Features:** 11 module options, 3 sets of preset parameter storage
- **Package Dimensions:** 17.32 x 13.78 x 9.84 inches
- **Manufacturer:** EARNMee

10. Warranty and Support

For warranty information, technical support, or service inquiries, please contact EARNMee customer service directly. Refer to the product packaging or the official EARNMee website for contact details.