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## RockSeed HM305P

# RockSeed HM305P Programmable 30V/10A DC Power Supply User Manual

Model: HM305P

## 1. INTRODUCTION

Thank you for choosing the RockSeed HM305P Programmable DC Power Supply. This device is a high-precision, adjustable switching regulated power supply designed for laboratory, educational, and industrial applications. It features a 4-digit large display, USB interface for PC software control, and various protection functions to ensure safe and reliable operation. Please read this manual thoroughly before operating the device to ensure proper usage and to maximize its performance and lifespan.

## 2. SAFETY INSTRUCTIONS

To prevent electric shock, fire, or damage to the product, please observe the following safety precautions:

- Ensure the power supply is connected to a grounded outlet.
- Do not operate the device in wet or damp conditions.
- Do not open the casing; there are no user-serviceable parts inside.
- Verify input voltage matches local power specifications.
- Avoid short-circuiting the output terminals.
- Always turn off the power supply and disconnect it from the main power before making any connections or disconnections.
- Do not exceed the maximum voltage and current ratings of the device or the connected load.

## 3. PRODUCT OVERVIEW

### 3.1 Front Panel Features

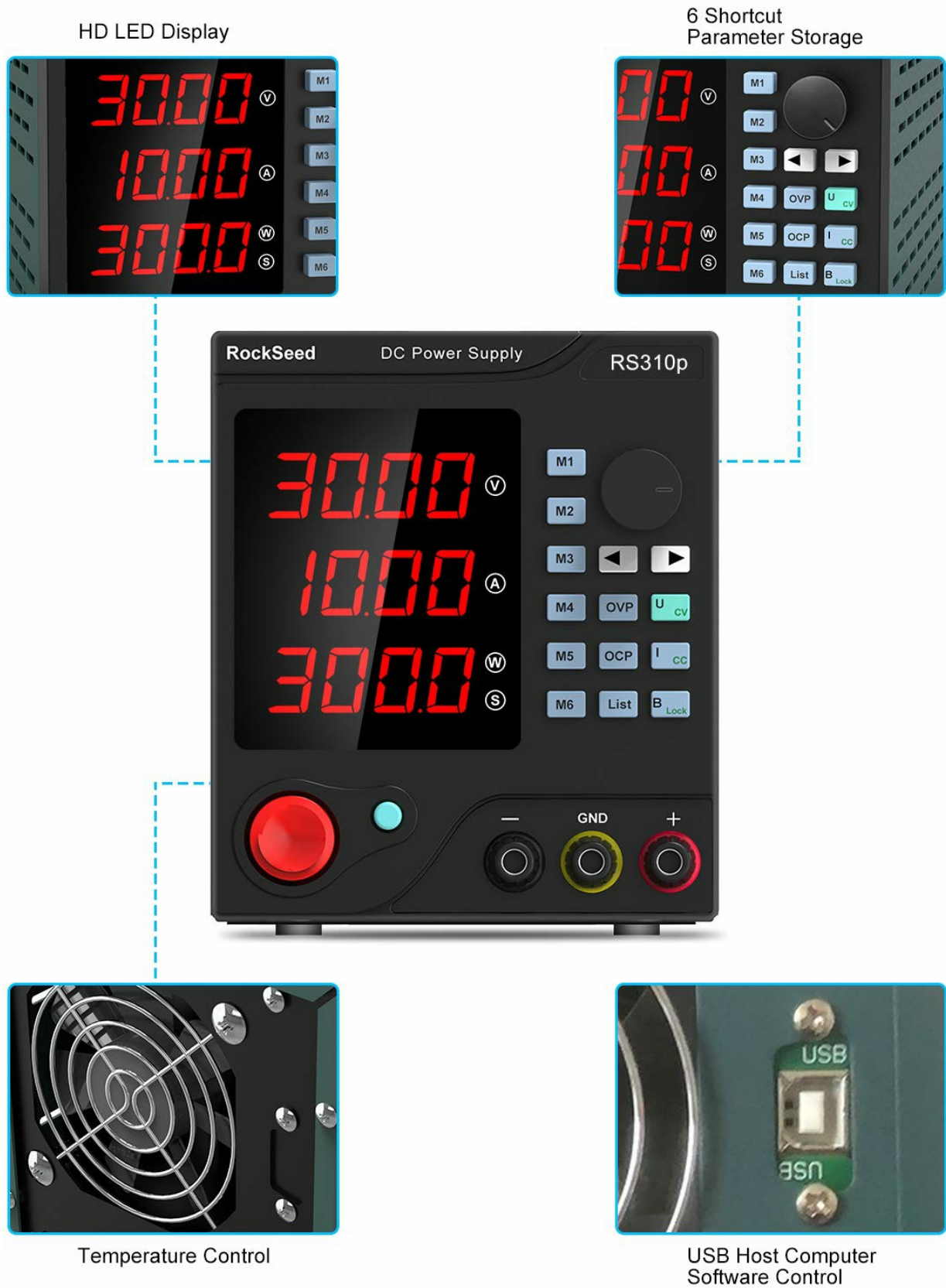


Figure 1: Front Panel Layout. Shows the HD LED display for voltage, current, and power, 6 shortcut parameter storage buttons (M1-M6), OVP/OCP/CV/CC indicators, adjustment knob, output ON/OFF button, and output terminals.

- **HD LED Display:** Shows real-time voltage (V), current (A), and power (W) readings.
- **Memory Buttons (M1-M6):** Store and recall up to 6 sets of voltage and current parameters.
- **Adjustment Knob:** Used to precisely set voltage and current values.
- **Output ON/OFF Button:** Controls the power output to the terminals.
- **Output Terminals:** Positive (+), Negative (-), and Ground (GND) connections for your load.
- **OVP/OCP/CV/CC Indicators:** Lights indicate Over Voltage Protection, Over Current Protection, Constant Voltage mode, and

Constant Current mode.

### 3.2 Rear Panel Features



Figure 2: Rear Panel. Features the temperature-controlled cooling fan and the USB host computer control interface.

- **Cooling Fan:** Temperature-controlled fan for efficient heat dissipation.
- **USB Interface:** For connecting to a PC for software control and programming.
- **AC Power Input:** Connector for the main power cord.

### 3.3 Key Features and Accessories



Programming Instruction



Solar heat Dissipation



4-in-1 Power Supply



Overvoltage Protection



Over Temperature Protection



Impact Protection



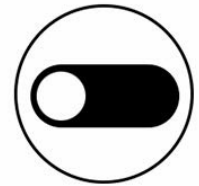
Keyboard Lock



High Precision



Stable Current



Unique On-Off switch



Figure 3: Key Features. Highlights the device's capabilities such as programming, multiple protections, precision, and stability.



Figure 4: Included Accessories. Shows the standard accessories provided with the power supply.

The RockSeed HM305P comes with essential accessories for immediate use, including alligator clip test leads, a power cord, a USB cable for PC connectivity, and a software CD. Its portable design with an elastic handle (as shown in Figure 5) makes it convenient for various work environments.

# Portable Lightweight Design with Elastic Handle



Figure 5: Portable Design. Illustrates the compact size and integrated handle for easy transport.

## 4. SETUP

1. **Unpacking:** Carefully remove the power supply and all accessories from the packaging. Inspect for any signs of damage.
2. **Power Connection:** Connect the provided AC power cord to the power input on the rear panel of the device, then plug the other end into a grounded AC power outlet.
3. **Initial Power On:** Press the main power button on the front panel to turn on the device. The display should illuminate.

4. **Output Connections:** Before connecting any load, ensure the power output is OFF (indicated by the output button not being lit or displaying "OFF"). Connect your load to the output terminals using the provided alligator clip leads or other suitable cables. Connect the positive (+) terminal of the load to the red (+) terminal of the power supply, and the negative (-) terminal of the load to the black (-) terminal of the power supply. For safety, connect the ground (GND) terminal to the chassis ground of your setup if required.

## 5. OPERATING INSTRUCTIONS

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### 5.1 Setting Voltage and Current

1. Ensure the output is OFF before setting parameters.
2. **Adjusting Voltage:** Press the 'V' button (or the corresponding button to select voltage adjustment). The voltage display will flash. Rotate the adjustment knob to set the desired voltage. Press the 'V' button again to confirm or wait a few seconds for it to auto-confirm.
3. **Adjusting Current:** Press the 'A' button (or the corresponding button to select current adjustment). The current display will flash. Rotate the adjustment knob to set the desired current limit. Press the 'A' button again to confirm or wait a few seconds for it to auto-confirm.
4. **Enabling Output:** Once voltage and current limits are set, press the Output ON/OFF button to enable the power output. The button will illuminate, and the display will show the actual output voltage and current.

### 5.2 Memory Functions (M1-M6)

The device allows you to store and recall up to 6 sets of frequently used voltage and current parameters.

- **Storing Parameters:** Set the desired voltage and current. Press and hold one of the memory buttons (M1-M6) for approximately 3 seconds until a beep sounds, indicating the parameters are saved.
- **Recalling Parameters:** Briefly press the desired memory button (M1-M6). The display will show the stored values. Press the button a second time to activate these settings.

### 5.3 Over Voltage Protection (OVP) and Over Current Protection (OCP)

These features protect your load and the power supply from damage due to excessive voltage or current.

- **Setting OVP:** Press the OVP button. The OVP value will flash. Use the adjustment knob to set the maximum allowable output voltage. Press OVP again to confirm.
- **Setting OCP:** Press the OCP button. The OCP value will flash. Use the adjustment knob to set the maximum allowable output current. Press OCP again to confirm.
- If the output voltage or current exceeds the set OVP or OCP limits, the power supply will automatically shut off its output and indicate the protection status.

### 5.4 Keyboard Lock

To prevent accidental changes to settings, you can lock the front panel controls.

- **Activating Lock:** Press and hold the 'Lock' button (often combined with 'List' or another function) for a few seconds until the lock indicator appears or a beep sounds.
- **Deactivating Lock:** Repeat the same action to unlock the keyboard.

## 6. PC SOFTWARE CONTROL

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The RockSeed HM305P can be controlled and monitored via a computer using the provided USB interface and software.

1. **Software Installation:** Insert the provided software CD into your computer's CD-ROM drive and follow the on-screen instructions to install the control software. If a CD drive is not available, please visit the manufacturer's website for software downloads.
2. **Connecting to PC:** Connect the power supply to your computer using the supplied USB cable.
3. **Launching Software:** Open the installed control software on your PC. The software should automatically detect the power supply.

4. **Operation:** Refer to the software's built-in help or documentation for detailed instructions on controlling voltage, current, memory functions, and monitoring output via the PC interface. The software may also support advanced programming features.

*Note: Some users have reported that the software documentation can be limited. Explore the software interface and its options, including right-clicking on tray icons for additional features. The device uses MODBUS serial protocol, and basic documentation for this protocol may be available on the software CD or manufacturer's website.*

## 7. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the power supply. Do not use abrasive cleaners or solvents.
- **Ventilation:** Ensure the ventilation openings on the device are clear and unobstructed to allow for proper airflow and cooling.
- **Storage:** When not in use for extended periods, store the power supply in a cool, dry place away from direct sunlight and extreme temperatures.
- **Calibration:** For professional applications requiring high accuracy, periodic calibration by qualified personnel is recommended.

## 8. TROUBLESHOOTING

Problem	Possible Cause	Solution
No output voltage/current	Output is OFF; OVP/OCP triggered; loose connections; power cord not connected.	Press the Output ON/OFF button. Check OVP/OCP settings and reset if necessary. Verify all connections are secure. Ensure the power cord is firmly plugged in.
Display shows "OFF" but output is desired	Output is intentionally disabled.	Press the Output ON/OFF button to enable output.
Inaccurate voltage/current readings	Measurement error; device requires calibration.	Ensure proper connection to the load. Compare readings with a calibrated multimeter. If discrepancies persist, professional calibration may be needed.
High-pitched fan noise at low loads	Normal operation for variable speed fan at low power draws.	This is typically normal behavior. The noise should subside or change to a regular fan sound as the current draw increases. Ensure adequate ventilation.
PC software not connecting or functioning correctly	Incorrect driver installation; software compatibility issues; USB cable fault.	Reinstall USB drivers and software. Ensure the correct COM port is selected in the software. Try a different USB port or cable. Check manufacturer's website for updated software or drivers.

## 9. SPECIFICATIONS

Feature	Value
Model Number	HM305P
Brand	RockSeed
Output Voltage	0-30V (Adjustable)
Output Current	0-10A (Adjustable)
Output Wattage	305 Watts

Feature	Value
Current Rating	10 Amps
Display	4-Digit LED
Interface	USB
Product Dimensions (L x W x H)	10.43 x 4.92 x 5.71 inches
Item Weight	5.52 pounds (2.51 Kilograms)
Cooling Method	Air (Temperature-controlled fan)
Date First Available	December 17, 2019

## 10. WARRANTY AND SUPPORT

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RockSeed products are designed for reliability and performance. For warranty information, technical support, or service inquiries, please refer to the warranty card included with your product or visit the official RockSeed website. Please have your model number (HM305P) and purchase date available when contacting support.