

## RockSeed RS305D

# RockSeed RS305D Triple Output Linear DC Power Supply Instruction Manual

Model: RS305D | Brand: RockSeed

## 1. INTRODUCTION

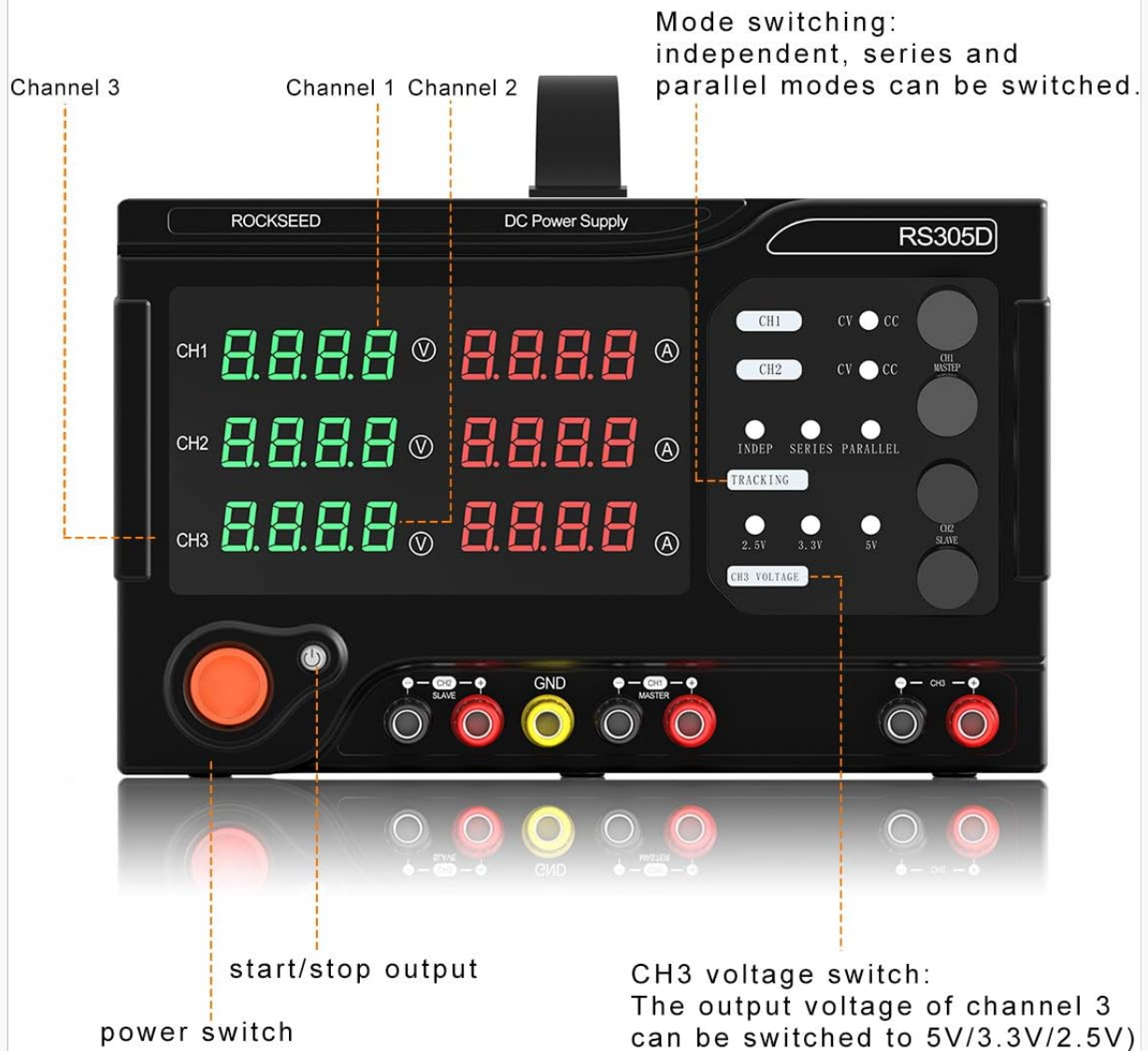
The RockSeed RS305D is a high-performance triple output linear DC power supply designed for various electronic applications. It features two main adjustable outputs (CH1/CH2) providing 0-30V/0-5A each, and one variable fixed output (CH3) with selectable voltages of 2.5V, 3.3V, or 5V. This unit supports independent, series, and parallel operation modes, offering flexibility for diverse testing and development needs. Its precise control and clear digital displays make it an essential tool for laboratories, educational institutions, and hobbyists.

## 2. PRODUCT FEATURES

- **Triple Output Channels:** Two main adjustable channels (CH1/CH2: 0-30V/0-5A) and one fixed variable channel (CH3: 2.5V/3.3V/5V).
- **Multiple Operation Modes:** Independent, Series (MAX 60V, MAX 5A), and Parallel (MAX 30V, MAX 10A).
- **High Precision Digital Display:** Clear LED displays for voltage and current on each channel.
- **Coarse and Fine Adjustment:** Dedicated knobs for precise control of voltage and current.
- **Over-Voltage Protection (OVP) & Over-Current Protection (OCP):** Built-in safety features to protect connected devices.
- **Linear Pure Copper Transformer:** Ensures stable output with low ripple and noise.
- **Temperature Control Cooling System:** Maintains stable performance during extended use.
- **USB Charging Ports:** Includes USB-A and USB-C fast charging ports for convenience.

### 2.1. Front Panel Overview

# Front Panel Display



**Image Description:** This image displays the front panel of the RockSeed RS305D power supply. It highlights the three output channels (CH1, CH2, CH3) with their respective digital voltage and current displays. Key controls such as coarse and fine adjustment knobs for voltage and current, mode selection buttons (Independent, Series, Parallel), and output enable/disable buttons are clearly visible. The fixed voltage selection for CH3 (2.5V, 3.3V, 5V) is also indicated. Input/output terminals for each channel are located at the bottom.

## 2.2. Triple Output Capabilities

# Three Channels Output: series, parallel, and independent output



5V/3.3V/2.5V

The fixed output current can reach to 3A. The output voltage of 5V/ 3.3V/2.5V can be switched to facilitate the experiment of components

**Image Description:** This image illustrates the triple output capabilities of the RockSeed RS305D. It shows Channel 1 and Channel 2 providing adjustable 0-30V voltage and 0-5A current. It also highlights the maximum output in series mode (60V, 5A) and parallel mode (30V, 10A). Channel 3 is depicted with its fixed output current of up to 3A and selectable voltages of 5V, 3.3V, or 2.5V, emphasizing its utility for component testing.

## 2.3. Internal Components

# Linear Pure Copper Transformer and Temperature Control Cooling System

Linear pure copper transformer has better performance than switching power supply, low ripple and low noise.

The temperature control cooling system makes the power supply performance more stable.



**Image Description:** This image provides an internal view of the RockSeed RS305D, showcasing its linear pure copper transformer and temperature control cooling system. The linear transformer is noted for better performance, lower ripple, and less noise compared to switching power supplies. The temperature control cooling system is highlighted as crucial for maintaining stable power supply performance.

## 2.4. Digital LED Display

## Digit Color LED Display, 3-Channel Independent Display



**Image Description:** This image focuses on the digit color LED display of the RockSeed RS305D. It clearly shows the independent displays for voltage and current for each of the three channels (CH1, CH2, CH3). The bright, multi-colored digits ensure excellent readability of the output parameters.

### 2.5. Included Accessories



**Image Description:** This image displays the accessories included with the RockSeed RS305D power supply. It shows two sets of red and black test leads with alligator clips, a power cord, and a user manual, providing all necessary components for immediate use.

### 3. 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 power cord to the AC input socket on the rear panel of the power supply and then to a suitable AC power outlet. Ensure the voltage selector switch on the rear is set correctly for your region (115V or 230V).
3. **Output Connections:** Connect the test leads to the output terminals on the front panel. Red terminals are

for positive (+) and black terminals are for negative (-). The yellow terminal is for ground.

4. **Placement:** Place the power supply on a stable, level surface with adequate ventilation around the unit. Do not block the ventilation openings.

## 4. OPERATING INSTRUCTIONS

1. **Power On/Off:** Press the main power switch on the front panel to turn the unit ON or OFF.
2. **Setting Voltage and Current (CH1/CH2):**
  - Press the 'V' (Voltage) or 'A' (Current) button for the desired channel (CH1 or CH2) to select the digit you wish to adjust. The selected digit will blink.
  - Rotate the coarse or fine adjustment knob to change the value of the blinking digit.
  - Repeat until the desired voltage and current limits are set.
3. **Output Enable/Disable:** After setting the desired voltage and current, press the 'Output' button for the respective channel to enable or disable the output. The indicator light will show the output status.
4. **Setting Fixed Voltage (CH3):**
  - Press the 'CH3 Voltage' button to cycle through the available fixed voltages: 2.5V, 3.3V, and 5V.
  - The selected voltage will be displayed on the CH3 output.

## 5. MODES OF OPERATION

The RockSeed RS305D offers three primary operation modes for its main channels (CH1 and CH2):

- **Independent Mode:** In this default mode, CH1 and CH2 operate completely independently. You can set different voltage and current values for each channel, and they will function as two separate power supplies.
- **Series Mode:** To achieve higher voltage output, CH1 and CH2 can be connected in series. In this mode, the total output voltage is the sum of CH1 and CH2 voltages (up to MAX 60V), while the current limit is determined by the lower of the two channel's current settings (up to MAX 5A). Ensure proper wiring for series connection.
- **Parallel Mode:** For higher current output, CH1 and CH2 can be connected in parallel. In this mode, the total output current is the sum of CH1 and CH2 currents (up to MAX 10A), while the voltage is determined by the lower of the two channel's voltage settings (up to MAX 30V). Ensure proper wiring for parallel connection.

Use the 'INDEP SERIES PARALLEL' switch on the front panel to select the desired mode.

## 6. SAFETY PRECAUTIONS

- Always ensure the power supply is connected to a grounded outlet.
- Verify the input voltage selector switch on the rear panel matches your local power supply (115V or 230V) before connecting to AC power.
- Do not operate the power supply in a wet or damp environment.
- Before connecting any device to the power supply, always set the voltage and current limits to appropriate values to prevent damage to the device.
- Do not exceed the maximum voltage or current ratings of the power supply.
- Ensure proper ventilation to prevent overheating. Do not block air vents.
- In case of malfunction, disconnect the power supply immediately and contact customer support. Do not attempt to repair the unit yourself.

## 7. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the power supply. Do not use abrasive cleaners or solvents.
- **Ventilation:** Regularly check that the ventilation openings are clear of dust and debris. Use compressed air to clean if necessary.
- **Storage:** When not in use for extended periods, store the power supply in a cool, dry place away from direct sunlight and extreme temperatures.

## 8. TROUBLESHOOTING

- **No Output:** Check if the 'Output' button for the respective channel is enabled. Ensure the power supply is turned on and connected to a working AC outlet.
- **Incorrect Readings:** Verify that the test leads are securely connected to both the power supply and the load. Check the calibration of any external measurement devices.
- **Overload/Protection Triggered:** If OVP or OCP indicators light up, it means the output limits have been exceeded. Disconnect the load, reduce the voltage/current settings, and then re-enable the output.
- **Unit Overheating:** Ensure adequate ventilation. Check if the cooling fan is operating correctly. Reduce the load if operating at high power for extended periods.

## 9. SPECIFICATIONS

Specification	Value
Brand	RockSeed
Model	RS305D
Main Output (CH1/CH2)	0-30V / 0-5A
Variable Fixed Output (CH3)	2.5V / 3.3V / 5V (MAX 3A)
Series Mode (MAX)	60V / 5A
Parallel Mode (MAX)	30V / 10A
Output Wattage	240 Watts
Item Weight	19.41 pounds
Package Dimensions	16.57 x 12.52 x 9.09 inches
Cooling Method	Air
Date First Available	January 27, 2021

## 10. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the contact details provided with your product packaging or visit the official RockSeed website. Keep your purchase receipt as proof of purchase for warranty claims.