

NANKADF 0-30V 0-10A

NANKADF DC Power Supply User Manual

MODEL: 0-30V 0-10A

Your comprehensive guide to operating and maintaining your NANKADF DC Power Supply.

1. Introduction

The NANKADF DC Power Supply (Model: 0-30V 0-10A) is a high-precision bench power supply designed for various electronic applications. It features an encoder knob for accurate voltage and current adjustment, an output enable/disable button for safety, and built-in overcurrent protection. This manual provides detailed instructions for setup, operation, maintenance, and troubleshooting to ensure optimal performance and longevity of your device.

Key Features:

- **High-precision Encoder Knob:** Allows precise adjustment of voltage and current by toggling and rotating digits.
- **Output Enable/Disable Button:** Provides immediate control over power output, preventing accidental damage to connected loads.
- **Overcurrent Protection (OCP):** Automatically stops output and alerts the user with a buzzer in case of a short circuit.
- **Four-digit Display & Mute Mode:** Bright display for clear readings and an option to mute the beep sound during settings.
- **USB & Type-C Quick-Charge:** Integrated 5V/3.6A USB and Type-C ports for convenient charging of external devices.

2. Safety Precautions

Please read and understand all safety instructions before operating the NANKADF DC Power Supply. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Ensure the input voltage selector switch on the rear panel is set correctly for your region (115V or 230V) before connecting to mains power. Incorrect setting can damage the unit.
- Do not operate the power supply in wet or damp conditions.
- Do not open the casing of the power supply. There are no user-serviceable parts inside. Refer all servicing to qualified personnel.

- Always disconnect the power supply from the mains before making or breaking connections to the output terminals.
- Avoid short-circuiting the output terminals. While the unit has Overcurrent Protection, prolonged short circuits can still cause damage.
- Ensure proper ventilation. Do not block the cooling fan or vents.
- Use only the provided power cords and accessories.

3. Product Components and Layout

Familiarize yourself with the front and rear panels of your NANKADF DC Power Supply.



Figure 3.1: Front and Rear Panel Layout. This image illustrates the various controls, ports, and indicators on the NANKADF DC Power Supply, including the voltage/current display, encoder knob, output terminals, USB ports, cooling fan, and power input interface.

Front Panel:

- **Voltage Output Display:** Shows the set or actual output voltage.
- **Current Output Display:** Shows the set or actual output current.
- **Power Output Display:** Shows the calculated output power in Watts.
- **Type-C Fast Charging Port:** For charging compatible devices (up to 18W).
- **USB Fast Charging Port:** For charging compatible devices (up to 18W).
- **Voltage/Current Switching Key (V/A):** Toggles between voltage and current adjustment modes.
- **Voltage/Current Setting Knob:** Used to adjust the numerical values. Press to select a digit, rotate to change its value.
- **Output Enable/Disable Button (OUT):** Toggles the power output on or off.
- **OCP Short Circuit Protection Switch (OCP):** Activates or deactivates the overcurrent protection.
- **Power Switch:** Turns the unit on/off.
- **Positive Polarity (Red) Terminal:** Connects to the positive lead of your load.
- **Negative Polarity (Black) Terminal:** Connects to the negative lead of your load.
- **Ground Terminal (Green):** For grounding the load if required.
- **Output Indicator Light:** Illuminates when output is enabled.

- **Short Circuit Protection Indicator Light:** Illuminates when OCP is triggered.

Rear Panel:

- **Power Input Interface:** For connecting the input power cord.
- **Fuse Box:** Contains the replaceable fuse.
- **Voltage Selector Switch (115V/230V):** Must be set to match your local mains voltage.
- **Cooling Fan:** Provides active cooling for the internal components.

4. Setup

1. **Unpacking:** Carefully remove the power supply and all accessories from the packaging. Verify that all items listed in the "What's in the Box" section are present.
2. **Voltage Selection:** Locate the voltage selector switch on the rear panel. Ensure it is set to the correct voltage for your region (115V for North America, 230V for most of Europe and Asia). *Incorrect voltage selection can cause severe damage to the unit.*

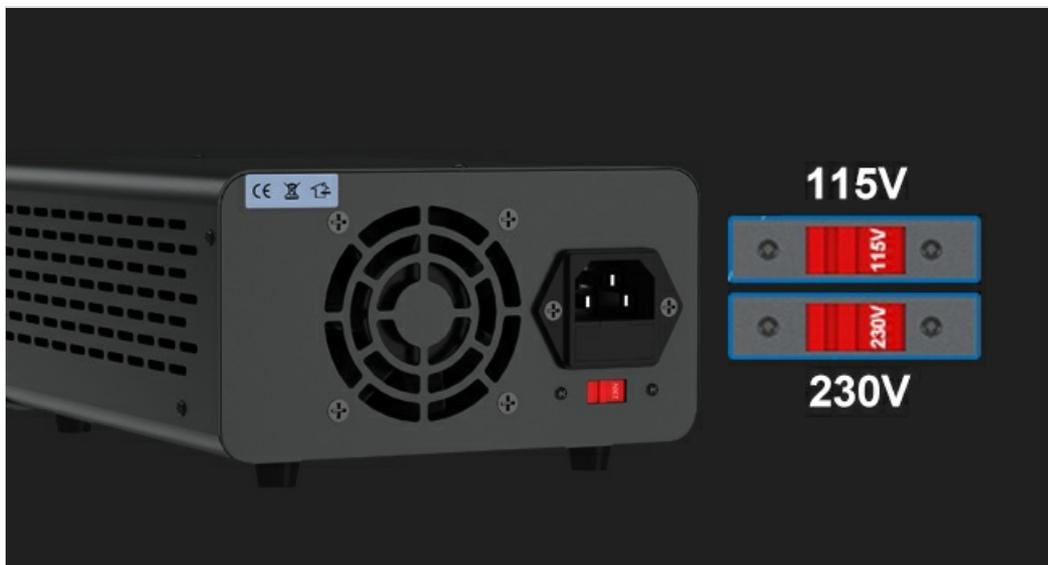


Figure 4.1: Rear panel showing the voltage selector switch. Ensure this is set correctly before powering on.

3. **Power Connection:** Connect the provided input power cord to the power input interface on the rear panel of the power supply, then plug the other end into a suitable mains outlet.
4. **Initial Power On:** Flip the power switch on the front panel to the 'ON' position. The display should illuminate, showing default voltage and current settings.
5. **Connecting Load:** Before connecting any load, ensure the output is disabled by pressing the 'OUT' button (the output indicator light should be off). Connect the positive lead of your load to the red (+) terminal and the negative lead to the black (-) terminal. Use the green ground terminal if your application requires grounding.

5. Operating Instructions

5.1 Adjusting Voltage and Current:

1. **Select Mode:** Press the 'V/A' button to toggle between Voltage (V) and Current (A) adjustment modes. The active mode will be indicated on the display.
2. **Select Digit:** In the desired mode (V or A), press the main encoder knob to select the digit you wish to adjust. Each press will cycle through the digits from left to right.
3. **Adjust Value:** Rotate the encoder knob clockwise to increase the value of the selected digit, and counter-clockwise to decrease it.

High Precision Encoder Adjustment Knob



Figure 5.1: Adjusting voltage and current using the encoder knob.

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Video 5.1: Demonstration of one-touch switching to adjust voltage and current, high precision voltage and current testing, and other features.

5.2 Output Enable/Disable:

The 'OUT' button controls the power output to the terminals.

- Press 'OUT' once to enable the output. The output indicator light will illuminate.
- Press 'OUT' again to disable the output. The output indicator light will turn off.



Figure 5.2: Using the Output Enable/Disable button for safe operation.

5.3 Overcurrent Protection (OCP):

The OCP function protects your load and the power supply from damage due to excessive current.

- Press the 'OCP' button to activate or deactivate the overcurrent protection. When active, the OCP indicator light will be on.
- If a short circuit or overcurrent condition occurs with OCP enabled, the power supply will automatically stop output and emit a buzzer alarm. The OCP indicator light will flash.
- To reset after an OCP event, resolve the short circuit/overcurrent condition, then press the 'OCP' button again or cycle the power.



Figure 5.3: Overcurrent Protection (OCP) activation and alarm.

5.4 USB/Type-C Quick Charging:

The power supply includes dedicated USB-A and Type-C ports for quick charging of compatible electronic devices.

- Simply connect your device to the USB-A or Type-C port using an appropriate cable.
- The ports provide up to 18W fast charging.

USB-A/Type-C QUICK CHARGE INTERFACE

Built-in fast charging identification chip,
output power up to 18W.



Type-C power
supply interface



USB-A power
supply interface



Figure 5.4: USB-A and Type-C Quick Charge Interface.

5.5 Mute Mode:

To silence the operational beeps:

- Long press the encoder adjustment knob to toggle the sound on or off.

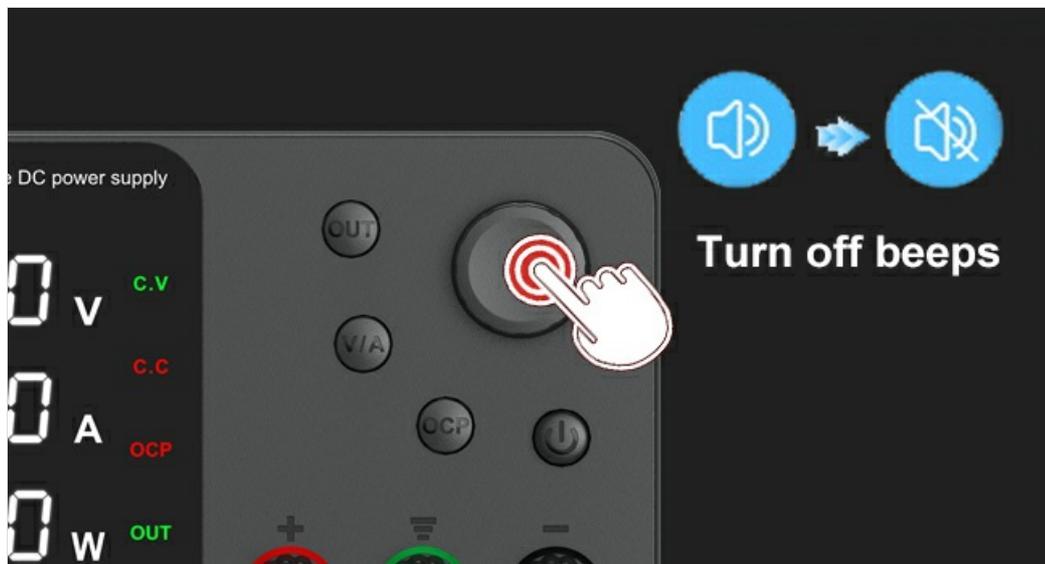


Figure 5.5: Activating Mute Mode.

6. Maintenance

- **Cleaning:** Disconnect the power supply from the mains before cleaning. Use a soft, dry cloth to wipe the exterior. Do not use abrasive cleaners or solvents.
- **Ventilation:** Ensure the cooling fan and ventilation holes are free from dust and obstructions. Periodically clean them with compressed air 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.
- **Fuse Replacement:** If the unit fails to power on, check the fuse located in the fuse box on the rear panel. Replace with a fuse of the same type and rating only. Refer to the specifications for fuse details.

7. Troubleshooting

Problem	Possible Cause	Solution
Unit does not power on.	<ul style="list-style-type: none"> ◦ Power cord not properly connected. ◦ Mains power outlet is dead. ◦ Blown fuse. ◦ Incorrect voltage selector switch setting. 	<ul style="list-style-type: none"> ◦ Check power cord connection. ◦ Test outlet with another device. ◦ Replace fuse (refer to Maintenance section). ◦ Verify the 115V/230V switch on the rear panel is set correctly for your region.
No output voltage/current.	<ul style="list-style-type: none"> ◦ Output disabled (OUT button). ◦ OCP triggered. ◦ Load not properly connected. 	<ul style="list-style-type: none"> ◦ Press the 'OUT' button to enable output. ◦ Check OCP indicator; resolve short circuit and reset OCP. ◦ Verify load connections to output terminals.
Buzzer alarm sounds continuously.	<ul style="list-style-type: none"> ◦ OCP triggered due to short circuit or overcurrent. 	<ul style="list-style-type: none"> ◦ Immediately disconnect the load. Identify and resolve the short circuit or overcurrent condition. Press 'OCP' to reset.

Problem	Possible Cause	Solution
Inaccurate voltage/current readings.	<ul style="list-style-type: none"> Measurement error or external interference. 	<ul style="list-style-type: none"> Ensure proper connection of measuring instruments. Verify calibration of external measuring devices. Contact technical support if discrepancies persist.

8. Specifications

Parameter	Value
Model Number	0-30V 0-10A
Output Voltage Range	0-30V DC
Output Current Range	0-10A DC
Output Wattage	300 Watts
Minimum Input Voltage	100 Volts (AC)
Maximum Input Voltage	120 Volts (AC) (Note: Unit supports 115V/230V via selector switch)
Connector Type	USB C
Form Factor	Benchtop
Cooling Method	Air (with 1 fan)
Item Weight	3.25 pounds
Package Dimensions	11.65 x 7.64 x 5.08 inches

9. Warranty and Support

NANKADF is committed to providing high-quality products and excellent customer service.

- Technical Support:** We provide 7 x 24 hours technical support. For assistance, please refer to the contact information provided with your purchase or visit the official NANKADF website.
- Warranty:** Please refer to your purchase documentation for specific warranty terms and conditions. Optional protection plans may be available for extended coverage.