

NANKADF 30V 5A

NANKADF 30V 5A Adjustable DC Power Supply User Manual

Model: 30V 5A

1. INTRODUCTION

This manual provides detailed instructions for the safe and efficient operation of your NANKADF 30V 5A Adjustable DC Power Supply. This device is a mini-type switching power supply designed for electronic product repair, laboratory research and development, teaching, and production line aging tests. Please read this manual thoroughly before use and retain it for future reference.

2. PRODUCT OVERVIEW

2.1 Key Features

- **Encoder Adjustment:** Precise voltage and current setting via a single encoder knob.
- **High-Precision LED Display:** 4-digit display for voltage, current, and power with 0.01V/0.001A resolution.
- **Multi-Protection:** Includes short-circuit protection, over-temperature protection, over-voltage protection (OVP), over-current protection (OCP), and low ripple.
- **USB Fast Charging Ports:** Integrated USB-A and Type-C ports (up to 18W) for charging external devices.
- **Compact Design:** Mini portable bench power supply with high-quality components.

2.2 Front Panel Components

Refer to the image below for a visual guide to the front panel components.



Image 2.2.1: Front and Rear Panel Diagram. This image labels the various controls and ports on the NANKADF 30V 5A DC Power Supply, including the voltage/current setting knob, output button, OCP switch, power switch, output terminals, USB ports, cooling fan, and power input interface.

- **Voltage Output Display:** Shows the current output voltage.
- **Current Output Display:** Shows the current output current.
- **Power Output Display:** Shows the calculated output power.
- **Type-C Fast Charging Indicator:** Indicates activity on the Type-C charging port.
- **USB Fast Charging Indicator:** Indicates activity on the USB-A charging port.
- **Voltage Stabilizing Indicator Light (C.V):** Illuminates when the power supply is operating in constant voltage mode.
- **Constant Current Indicator Light (C.C):** Illuminates when the power supply is operating in constant current mode.
- **Output Indicator Light (OUT):** Indicates if the main output is active.
- **Short Circuit Protection Indicator Light (OCP):** Illuminates when Overcurrent Protection is triggered.
- **Output Button (OUT):** Toggles the main power output on or off.
- **Voltage/Current Switching Key (V/A):** Switches between voltage and current adjustment modes for the encoder knob.

- **Voltage/Current Setting Knob:** Used to adjust voltage and current values.
- **OCP Short Circuit Protection Switch (OCP):** Activates or deactivates the Overcurrent Protection function.
- **Power Switch:** Turns the unit on or off.
- **Positive Polarity (Red) Terminal:** Connects to the positive lead of the load.
- **Ground Terminal (Green):** Connects to the ground lead of the load or system.
- **Negative Polarity (Black) Terminal:** Connects to the negative lead of the load.

2.3 Rear Panel Components

- **Cooling Fan:** Provides active cooling for internal components.
- **Power Input Interface:** Connects the AC power cord.
- **Fuse Box:** Contains the main protective fuse.

3. SETUP

Follow these steps to set up your NANKADF DC Power Supply:

1. **Unpacking:** Carefully remove the power supply and all accessories from the packaging. Verify that all items listed in the 'Package Contents' section are present.
2. **Placement:** Place the power supply on a stable, level surface with adequate ventilation. Ensure that the cooling fan at the rear is not obstructed.
3. **Power Connection:** Connect the provided AC power cord to the power input interface on the rear panel of the power supply and then to a suitable AC power outlet.
4. **Initial Power On:** Flip the power switch to the 'ON' position. The LED display should illuminate.
5. **Output Connection:** Connect your load to the output terminals (red for positive, black for negative, green for ground) using appropriate test leads. Ensure connections are secure before activating the output.

4. OPERATING INSTRUCTIONS

4.1 Adjusting Voltage and Current

The NANKADF power supply uses an encoder knob for precise adjustments.

High Precision Encoder Adjustment Knob



Image 4.1.1: Encoder Adjustment Knob. This image illustrates how to use the encoder knob: press to change the adjustment position (digit) and rotate to change the numerical value. The V/A button switches between voltage and current adjustment modes.

1. **Select Adjustment Mode:** Press the **V/A** button to switch between voltage (V) and current (A) adjustment modes. The active adjustment parameter will be highlighted on the display.
2. **Select Digit:** Press the **Voltage/Current Setting Knob** to move the cursor to the desired digit you wish to adjust (e.g., tens, units, tenths, hundredths).
3. **Adjust Value:** Rotate the **Voltage/Current Setting Knob** clockwise to increase the value or counter-clockwise to decrease it.
4. **Confirm Setting:** Once the desired voltage and current limits are set, you can proceed to activate the output.

4.2 Output Control

The main power output is controlled by the **OUT** button.



Image 4.2.1: Output and OCP Button Functions. This image shows the functionality of the 'OUT' button to turn the power supply output on or off, and the 'OCP' button to activate or deactivate short circuit protection.

- **Turn Output ON:** Press the **OUT** button. The 'OUT' indicator light will illuminate, and power will be supplied to the output terminals.
- **Turn Output OFF:** Press the **OUT** button again. The 'OUT' indicator light will turn off, and power will be disconnected from the output terminals.

4.3 Overcurrent Protection (OCP)

The OCP function provides additional safety by automatically shutting off the output if the current exceeds a preset limit or if a short circuit occurs.

- **Activate OCP:** Press the **OCP** button. The 'OCP' indicator light will illuminate, indicating that the protection is active.
- **Deactivate OCP:** Press the **OCP** button again. The 'OCP' indicator light will turn off.
- **OCP Trigger:** If OCP is active and the current exceeds the set limit or a short circuit is detected, the power supply will automatically stop output and emit an alarm.

4.4 USB Fast Charging Ports

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



Image 4.4.1: USB-A and Type-C Quick Charge Interface. This image highlights the integrated USB-A and Type-C fast charging ports on the front panel, capable of delivering up to 18W.

- Connect your device to either the USB-A or Type-C port.
- The ports support various fast charging protocols up to 18W.
- These ports can be used simultaneously with the main DC output.

4.5 Mute Function

To silence the operational beeps:

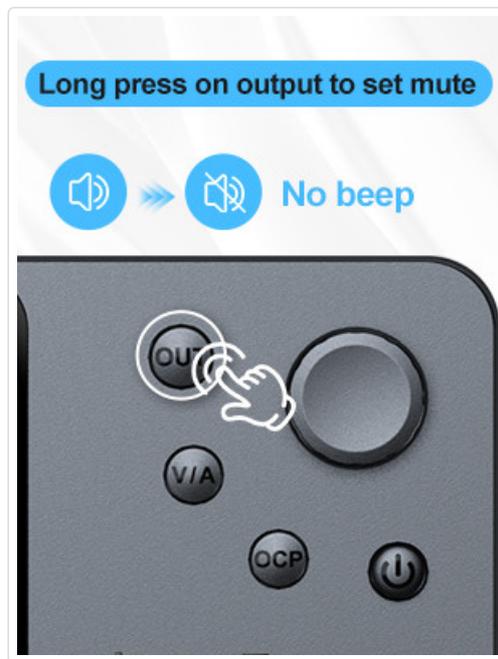


Image 4.5.1: Mute Function. This image demonstrates that a long press on the 'OUT' button will toggle the mute function, silencing the operational beeps.

- **Long press** the **OUT** button to toggle the mute function on or off. When muted, the device will not emit beeps during operation or adjustments.

5. SAFETY INFORMATION

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

- Do not operate the power supply in wet or damp conditions.
- Ensure proper grounding to prevent electric shock.
- Do not open the casing of the power supply. Refer all servicing to qualified personnel.
- Avoid placing objects on top of the power supply that could obstruct ventilation.
- Always disconnect the power supply from the AC outlet before performing any maintenance or when not in use for extended periods.
- Verify that the input voltage matches the specifications of the power supply.
- Do not exceed the maximum rated output voltage or current.

6. MAINTENANCE

To ensure the longevity and proper functioning of your NANKADF DC Power Supply:

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the unit. Do not use abrasive cleaners or solvents.
- **Ventilation:** Regularly check that the cooling fan and ventilation openings are free from dust and obstructions.
- **Fuse Replacement:** If the power supply fails to turn on, check the fuse in the fuse box on the rear panel. Replace it with a fuse of the same type and rating if necessary.
- **Storage:** When not in use, store the power supply in a cool, dry place away from direct sunlight and extreme temperatures.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Power supply does not turn on.	No AC power; Blown fuse; Power switch off.	Check AC power connection; Replace fuse; Ensure power switch is ON.
No output voltage/current.	Output button OFF; OCP triggered; Incorrect settings.	Press OUT button to activate output; Check OCP status and reset if needed; Verify voltage/current settings.
OCP indicator is on, output off.	Overcurrent detected; Short circuit in load.	Reduce load current or fix short circuit; Press OCP button to reset.
Display shows incorrect values.	Measurement error; Internal fault.	Verify with an external multimeter; Contact support if discrepancy persists.

8. SPECIFICATIONS

Parameter	Value
Brand	NANKADF
Model Number	30V 5A
Output Voltage	0-30 V
Output Current	0-5 A
Maximum Power	150 Watt
Voltage Display Accuracy	0.01 V
Current Display Accuracy	0.001 A
Form Factor	Benchtop
Material	Aluminum
Color	Black
Item Weight	1.45 Kilograms
Connector Type	USB-A, Type-C
USB Fast Charging Output	Up to 18W
Protection Features	Short-circuit, Over-temperature, Over-voltage (OVP), Over-current (OCP)

9. PACKAGE CONTENTS

The package includes the following items:



Image 9.1: Package Contents. This image displays the NANKADF DC Power Supply unit, an AC power cord, output test leads, and the user manual.

- 1 x NANKADF DC Power Supply Unit (30V 5A)
- 1 x AC Power Cord (UK plug)
- 1 x Output Test Leads
- 1 x User Manual (English)

10. WARRANTY AND SUPPORT

NANKADF is committed to improving user experience and service. We provide after-sales services and technical consulting for this product. For any issues or inquiries, please contact NANKADF customer support.