Saved from manuals.plus.
Open the live page for links to other documents and user manuals.

Aideepen [NP] Aideepen-XXX

Aideepen 1800W 40A DC-DC Boost Converter User Manual

Model: [NP] Aideepen-XXX

1. Introduction and Overview

The Aideepen 1800W 40A DC-DC Boost Converter is a high-performance power supply module designed to efficiently step up a DC input voltage to a higher DC output voltage. This module is engineered for robust applications requiring significant power conversion, such as boosting car battery voltage, charging various battery types, and powering high-power LEDs or motors.
Key features of this converter include:

- **High Output Power:** Capable of delivering up to 1800W.
- **Wide Voltage Range:** Accepts input voltages from 10.5V to 60V and provides adjustable output from 12V to 90V.
- **High Current Capacity:** Supports an input current of up to 40A and an output current of up to 22A.
- **Advanced Protection:** Features input reverse polarity protection and a constant current function for enhanced safety and versatility.
- **Exceptional Efficiency:** Achieves a conversion efficiency of 97% to 98%, ensuring minimal energy loss.
- **Intelligent Cooling:** Equipped with a temperature-controlled fan that activates automatically at approximately 60°C to maintain optimal operating temperatures and extend lifespan.
- **Durable Construction:** Utilizes high-quality components, including an aluminum oxide insulation plate and an oversized silicon-iron aluminum magnetic ring, for superior thermal management and performance.

2. Setup and Connections

Proper connection is crucial for the safe and effective operation of the boost converter. Refer to the wiring diagram below for terminal identification and connection points.

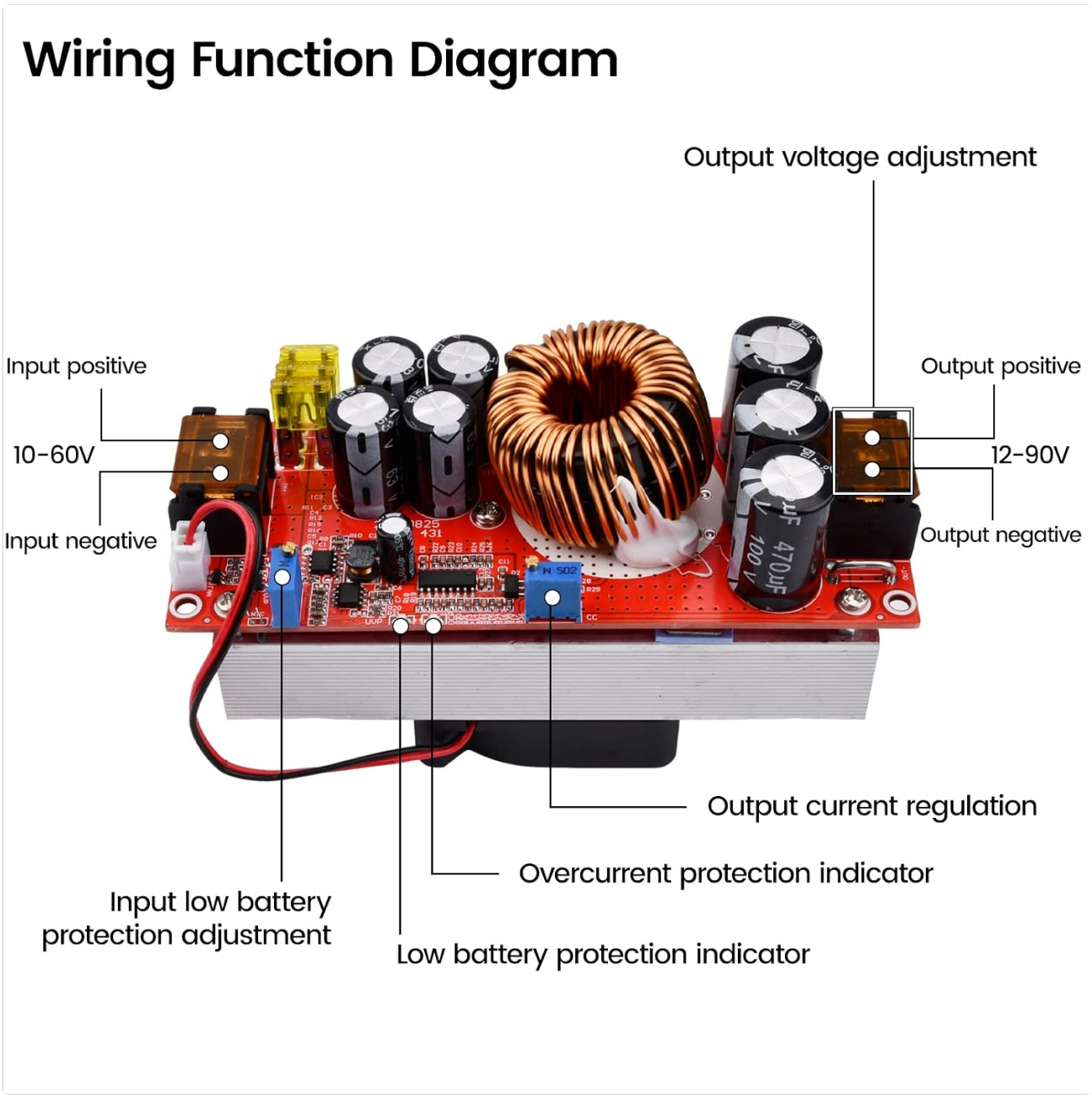

Figure 2.1: Wiring Function Diagram. This diagram illustrates the input positive, input negative, output positive, output negative terminals, along with the potentiometers for output voltage adjustment, output current regulation, and input low battery protection adjustment. It also shows the overcurrent and low battery protection indicators.

1. **Input Connection:** Connect your DC power source (10.5V-60V) to the input terminals. Ensure the positive (+) terminal of your power source connects to the 'Input positive' terminal on the converter, and the negative (-) terminal connects to the 'Input negative' terminal. The module features input reverse polarity protection.
2. **Output Connection:** Connect your load (device to be powered) to the output terminals. Ensure the positive (+) terminal of your load connects to the 'Output positive' terminal on the converter, and the negative (-) terminal connects to the 'Output negative' terminal. **Caution:** The positive and negative poles of the output cannot be reversed or short-circuited.
3. **Initial Adjustment:** Before connecting a sensitive load, it is recommended to adjust the output voltage and current. Use a multimeter to monitor the output.

3. Operating Instructions

The Aideepen boost converter allows for precise adjustment of output voltage and current to meet specific application requirements.

3.1. Voltage and Current Adjustment

- **Output Voltage Adjustment:** Use the potentiometer labeled 'Output voltage adjustment' (typically marked as VO-ADJ or similar) to set the desired output voltage. Turn clockwise to increase voltage, counter-clockwise to decrease.
- **Output Current Regulation:** Use the potentiometer labeled 'Output current regulation' (typically marked as CC-ADJ or similar) to set the maximum output current. This acts as a current limit.
- **Input Low Battery Protection Adjustment:** The potentiometer labeled 'Input low battery protection adjustment' (typically marked as UVP-ADJ or similar) allows you to set a low voltage cutoff for the input. This protects your input source (e.g., battery) from over-discharge.

3.2. Important Operating Notes

- **Step-Up Only:** This power supply module is designed to boost voltage (step-up) only. It cannot step down voltage, nor can it power electrical devices with a voltage lower than the input voltage. For example, a 24V battery cannot be used to charge a 12V battery or a capacitor.
- **Input Source Considerations:** When using batteries, switching power supplies, solar cells, or generators as input sources, it is crucial to properly manage battery protection. Failure to do so may result in damage to both the battery and the power supply module.
- **Load Management:** Avoid operating the module at full load for extended periods. It is recommended to maintain a 20% margin for continuous operation to ensure stability and prolong the lifespan of the power supply.
- **Ventilation:** Ensure adequate ventilation and heat dissipation around the module, especially during high-power operation. The integrated temperature-controlled fan will assist, but proper airflow is essential.

4. Maintenance

The Aideepen boost converter is designed for reliable operation with minimal maintenance. However, following these guidelines can help ensure its longevity:

- **Cleaning:** Periodically inspect the module for dust accumulation, especially on the heatsink fins and fan blades. Use compressed air or a soft brush to gently remove any dust, ensuring proper airflow for cooling.
- **Fan Operation:** The temperature-controlled fan will activate automatically when the module reaches approximately 60°C. Ensure the fan is not obstructed and spins freely when active.
- **Environmental Conditions:** Operate the module within its specified temperature and humidity ranges. Avoid exposure to excessive moisture, corrosive substances, or extreme temperatures.
- **Connection Integrity:** Periodically check all wiring connections to ensure they are secure and free from corrosion. Loose connections can lead to poor performance or damage.

5. Troubleshooting

If you encounter issues with your Aideepen 1800W 40A DC-DC Boost Converter, consider the following common problems and solutions:

- **No Output Voltage:**
  - Verify input voltage is within the 10.5V-60V range.
  - Check all input and output wiring for correct polarity and secure connections.
  - Ensure the output voltage adjustment potentiometer is not set to its minimum or faulty.
  - Check if the overcurrent protection indicator is active, indicating a short circuit or excessive load.

- **Incorrect Output Voltage/Current:**
    - Use a multimeter to accurately measure input and output values.
    - Carefully adjust the output voltage and current regulation potentiometers.
    - Ensure the load is not exceeding the module's maximum output current (22A).
- **Overheating:**
    - Ensure adequate ventilation around the module.
    - Check if the fan is operating correctly when the module heats up (around 60°C).
    - Reduce the load if operating continuously near maximum capacity. Remember to maintain a 20% margin.
    - Clean any dust from the heatsink and fan.
- **Module Not Powering On:**
    - Confirm the input power source is active and providing sufficient voltage and current.
    - Check for any visible damage to the module or its components.

If problems persist after following these steps, consult a qualified technician or contact Aideepen customer support for further assistance.

6. Specifications

The following table details the technical specifications of the Aideepen 1800W 40A DC-DC Boost Converter:

Parameter	Value
Product Dimensions (L x W x H)	13 x 8 x 5 cm
Product Weight	460 grams
Manufacturer	Aideepen
Model Number	[NP] Aideepen-XXX
Input Voltage Range	10.5V - 60V DC
Output Voltage Range	12V - 90V DC (Adjustable)
Input Current	40A (Max)
Output Current	22A (Max)
Output Power	1800W (Max)
Conversion Efficiency	97% - 98% (Max)
Switching Frequency	110 KHz (Typical)
No-Load Current	18 mA (Typical, VIN=48V, VO=72V)
Input Reverse Polarity Protection	Yes

Parameter	Value
Operating Temperature	-20°C to 65°C
Storage Temperature	-40°C to 125°C
Wiring Type	Terminal Block (Screw terminals)
Heat Dissipation	External Powerful Air Cooling (Integrated Fan)

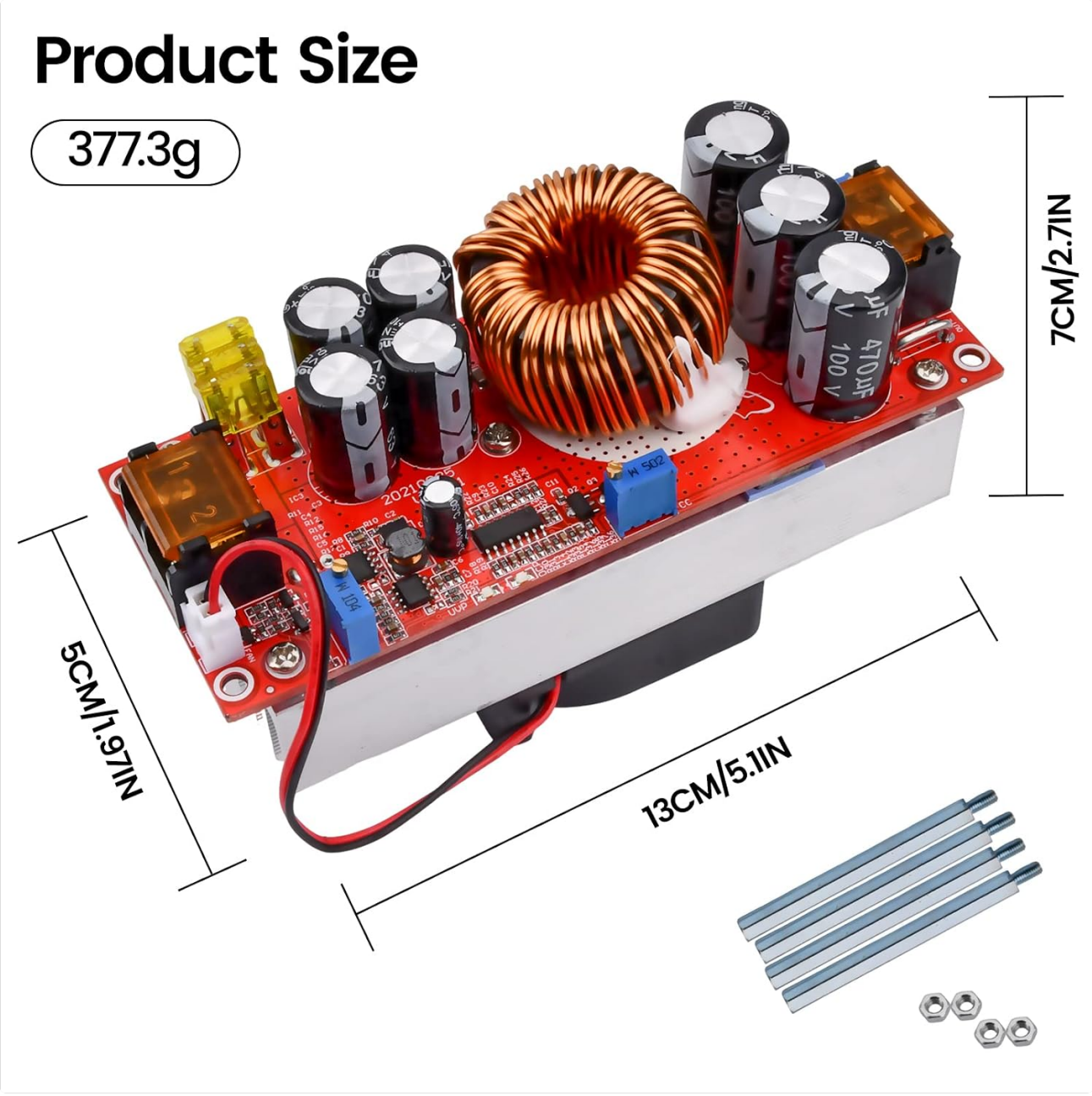

Figure 6.1: Product dimensions of the Aideepen 1800W 40A DC-DC Boost Converter, showing its length, width, and height in inches and centimeters, along with its weight.

7. Warranty and Support

Information regarding the specific warranty period or detailed support procedures for the Aideepen 1800W 40A DC-DC Boost Converter was not provided in the available product data. For warranty claims, technical support, or inquiries about spare parts, please refer to the seller's return policy or contact the manufacturer, Aideepen, directly

through their official channels or the platform where the product was purchased.
It is recommended to retain your purchase receipt as proof of purchase for any warranty or support requests.

© 2025 Aideepen. All rights reserved.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question

Open the live page

https://manuals.plus/asin/B0BZ4HXQLD

More documents and user manuals: **https://manuals.plus/**