

Aideepen 2_GXJA0008-007

Aideepen 1800W DC-DC Boost Converter Instruction Manual

Model: 2_GXJA0008-007

1. INTRODUCTION

This manual provides detailed instructions for the safe and effective use of the Aideepen 1800W DC-DC Boost Converter. This module is designed to step up a direct current (DC) input voltage from 10V-60V to an adjustable output voltage of 12V-90V, with a maximum output power of 1800W and output current up to 22A. It features robust protection mechanisms and an efficient cooling system, making it suitable for various high-power applications.

2. SAFETY INFORMATION

- Always ensure correct input and output polarity. Reverse connection can damage the module and connected devices.
- Do not exceed the maximum input voltage (60V) or output current (22A).
- This is a non-isolated module. If connecting in series or parallel, use independent power sources for each module.
- Before applying power, double-check all wiring connections to prevent short circuits.
- Operate in a well-ventilated area. The module generates heat during operation, especially under high loads.
- Avoid touching the module components during operation, as they may become hot.
- In case of any abnormality, immediately disconnect power and inspect the connections.
- Conduct simulation testing with a resistive load before connecting sensitive or critical equipment.

3. PRODUCT FEATURES

- **Wide Input Voltage Range:** 10V to 60V DC.
- **Adjustable Output Voltage Range:** 12V to 90V DC.
- **High Output Power:** Up to 1800W.
- **High Output Current:** Adjustable from 1.5A to 22A.
- **Integrated Protection:** Input overcurrent protection, short circuit protection, input reverse connection protection, and low battery protection.

- **Efficient Cooling System:** Features an air-blade type cooling fan with hydraulic bearing for balanced noise and heat dissipation. The fan activates automatically when the load temperature reaches approximately 60 degrees Celsius.
- **Multi-turn Potentiometers:** Ensures precise and stable voltage and current adjustments.

4. SPECIFICATIONS

Parameter	Value
Input Voltage Range	10V - 60V DC
Output Voltage Range	12V - 90V DC (Adjustable)
Maximum Output Power	1800W
Input Current	Up to 40A
Output Current	1.5A - 22A (Adjustable)
Efficiency	Up to 98.1%
Operating Temperature	Industrial grade (ensure heat dissipation above 40°C ambient)
Dimensions	Approximately 13cm x 5cm (5.1in x 1.97in)
Weight	14.4 ounces (approx. 412.5g)
Model Number	2_GXJA0008-007

5. PRODUCT OVERVIEW AND COMPONENTS

The Aideepen 1800W DC-DC Boost Converter features clearly labeled terminals and adjustment potentiometers for ease of use. Below is an illustration of the main components and their functions.

Product wiring

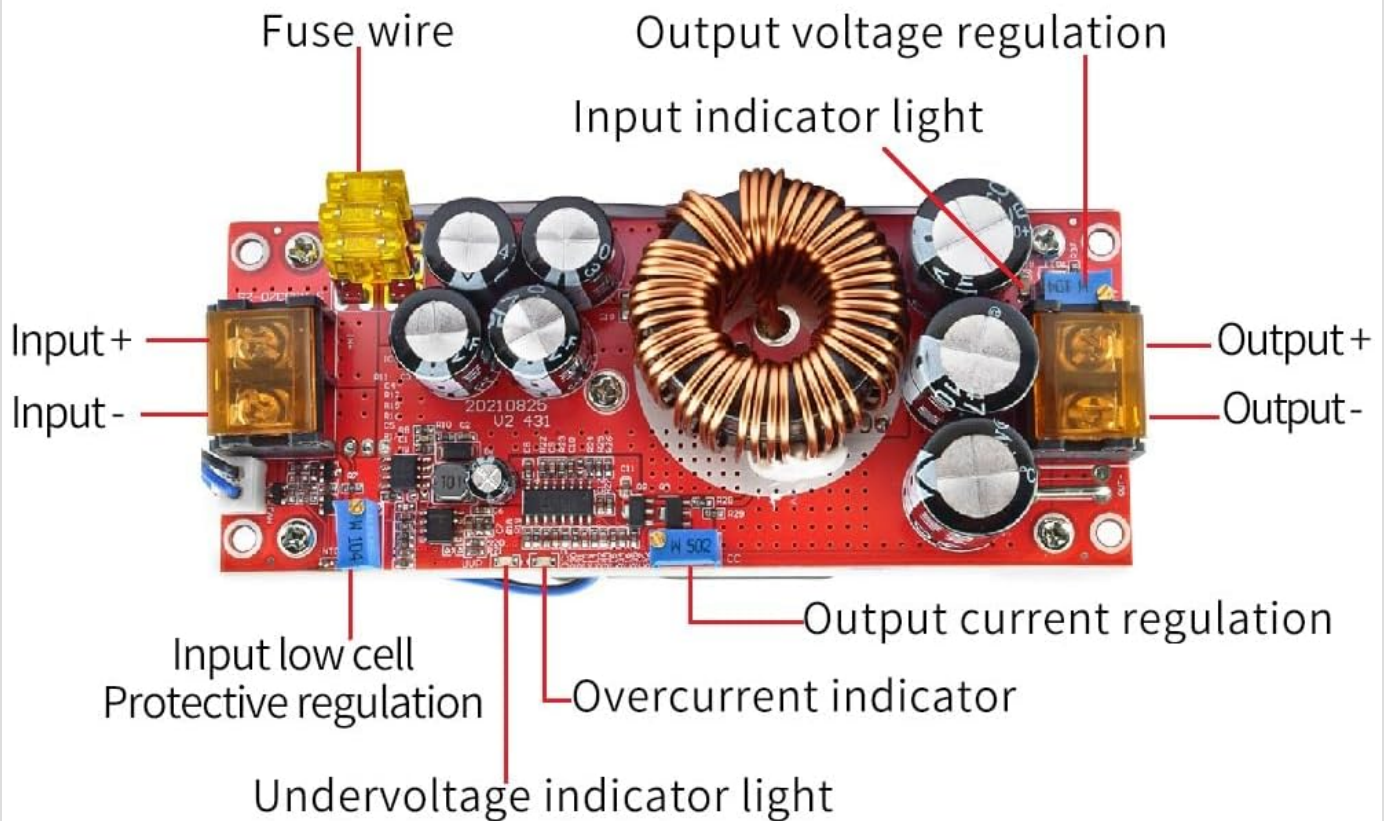


Image 1: Product Wiring Diagram. This image displays the top view of the boost converter module, highlighting key connection points and adjustment components. These include the Input+ and Input- terminals, Output+ and Output- terminals, fuse wire, output voltage regulation potentiometer, output current regulation potentiometer, input indicator light, overcurrent indicator, undervoltage indicator light, and input low cell protective regulation.

With Temperature Control Fan

The temperature control fan, coupled with the hydraulic bearing fan, achieves a very good balance between noise and heat dissipation.

When the load is light, the fans do not rotate.

When the load temperature reaches about **60 degrees**, the fans automatically turn on. It can effectively reduce noise and prolong life.



Image 2: Temperature Control Fan. This image shows the underside of the boost converter, revealing the integrated cooling fan. The fan is designed to activate automatically when the module's load temperature reaches approximately 60 degrees Celsius, ensuring optimal heat dissipation and extending product lifespan.

6. SETUP INSTRUCTIONS

Follow these steps to set up your Aideepen 1800W DC-DC Boost Converter:

1. **Check Voltage Compatibility:** Confirm that your input power supply's voltage is within the 10V-60V range and that your desired output voltage is achievable within the 12V-90V range.
2. **Prepare Tools:** Gather necessary tools such as wire cutters, wire strippers, insulation tape, and a multimeter for testing.
3. **Input Wiring:** Connect the positive (+) and negative (-) terminals of your power supply to the module's input terminals (labeled VIN or Input+ / Input-). Ensure correct polarity.
4. **Output Wiring:** Connect your load to the module's output terminals (labeled VOUT or Output+ / Output-). For initial testing, it is recommended to use an appropriate resistive load to prevent damage to sensitive equipment from incorrect settings.
5. **Initial Wiring Check:** Before applying power, meticulously verify all wiring connections. Ensure there are no loose

wires or potential for short circuits. Keep wiring neat and organized.

7. OPERATING INSTRUCTIONS

Once the module is wired, proceed with operation and adjustment:

1. **Power-Up Test:** Slowly increase the input power. Observe the module's working status. Use a multimeter to measure the output voltage to confirm it reaches the expected value. If any abnormality is detected, immediately turn off the power for inspection.
2. **Adjust Output Voltage:** If voltage adjustment is required, use the multi-turn potentiometer labeled for output voltage regulation. Turn clockwise to increase voltage, counter-clockwise to decrease. Adjust gradually while monitoring with a multimeter.
3. **Adjust Output Current (if applicable):** If constant current operation is desired, use the multi-turn potentiometer labeled for output current regulation. Adjust to set the desired current limit.
4. **Load Testing:** After confirming correct voltage and current settings, connect your actual load. Monitor the load's operation and the module's temperature rise to ensure stable performance. The integrated fan will activate automatically if the module's temperature reaches approximately 60°C.

8. MAINTENANCE

The Aideepen 1800W DC-DC Boost Converter is designed for durability. Regular maintenance is minimal but important for longevity:

- **Keep Clean:** Periodically inspect the module for dust accumulation, especially on the heatsink and fan. Use compressed air or a soft brush to gently clean.
- **Ensure Ventilation:** Always operate the module in an environment with adequate airflow to facilitate heat dissipation. Avoid enclosing it in tight spaces without ventilation.
- **Temperature Monitoring:** While the fan is automatic, it is good practice to monitor the module's temperature during prolonged high-load operation. If temperatures consistently exceed safe limits, consider additional cooling.
- **Connection Integrity:** Periodically check all wiring connections for tightness and signs of wear or corrosion.

9. TROUBLESHOOTING

This section addresses common questions and issues you might encounter.

You Might Want To ... ???			
Q:	How efficiently does the module work? I am using it for batteries, can I use it if I need high efficiency?	Q:	The operating voltage of the module is 10-60V, so if I input 12V can I output 48V?
A:	The efficiency of this module is very high. The highest efficiency we have tested is 98.1%.	A:	Yes, this module is a boost module .
Q:	Does this power module have reverse input protection? Will it burn out if I accidentally reverse the input power when I use it?	Q:	The operating voltage of the module is 10-60V, so can I input 12V and output 97V 1800W?
A:	No, our modules are reverse-connection protected.	A:	No, it can't. Input 12V can output 97V, but if you want to output 1800W power, the input voltage must be above 48V.
Q:	Does this power module have short circuit protection? Will it burn out if I accidentally short-circuit the output when I use it?	Q:	What is the operating temperature of this module and is it industrial grade?
A:	Our module is with short-circuit protection, you output short-circuit, the fuse will be blown, need to change the fuse to restore the use of the need to pay attention to, try not to short-circuit.	A:	Yes, but when the ambient temperature exceeds 40 degrees , please reduce the power or strengthen the heat dissipation.
Q:	Can this module current run at 72V 10A for a long time?	Q:	I need about 20A current, can this module work in parallel?
A:	This module is designed for 1800W, it can run for a long time at 1500W (fan is needed to force heat dissipation). $72V \times 10A = 720W$, so it can run for a long time.	A:	When the inputs are supplied separately , the outputs can be connected directly in parallel, doubling the power. When the inputs are all connected to the same power supply , parallel connection is not possible.
Q:	I see that the power of your module is 1800W, if I output 60V then how much current should be?	Q:	I see that your module has a potentiometer on it, will the output voltage suddenly rise because of a damaged potentiometer?
A:	This can be calculated by the formula $P = U \times I$, $I = P / U$, the output voltage of 60V current is 30A, due to the maximum output current of the module for the 22A or so, so the maximum output current in 22A.	A:	No, the module uses a multi-turn precision potentiometer, which has very high adjustment accuracy and reliability, and will not cause a sudden increase in output voltage, so you can rest assured that you can use it.

Image 3: Frequently Asked Questions. This image presents a table of common questions and answers regarding the boost converter's operation, efficiency, protection features, and adjustment.

- **Module Not Powering On:**

- Check input voltage: Ensure it is within 10V-60V.
- Verify input polarity: Incorrect polarity will prevent operation.
- Check fuse: A blown fuse indicates an overcurrent event or short circuit. Replace if necessary.

- **Output Voltage is Incorrect or Unstable:**

- Adjust the output voltage potentiometer carefully.
- Ensure the load is not drawing excessive current beyond the module's capacity (22A max).
- Check for loose connections or faulty wiring.

- **Module Overheating:**

- Ensure adequate ventilation.
- Verify the cooling fan is operating when the module is under load and warm.
- Reduce the load if operating continuously at maximum power, especially in ambient temperatures above 40°C.

- **Short Circuit Protection Activated:**

- The module has short-circuit protection. If activated, the fuse may blow. Replace the fuse and identify the cause of the short circuit before re-applying power.

- **Input Reverse Connection Protection:**

- The module is designed with reverse connection protection. If input polarity is reversed, the module will not operate but should not be damaged. Correct the polarity.

10. APPLICATIONS

The Aideepen 1800W DC-DC Boost Converter is versatile and can be used in various applications, including:

- High-power solar street lamp driving.
- Various LED lighting constant voltage (CV) driving.
- Vehicle-mounted and mobile device power supplies.
- DIY adjustable constant voltage (CV) and constant current (CC) power supplies.
- Solar power charging systems.
- Charging various types of batteries.




11. WARRANTY AND SUPPORT




Each Aideepen product comes with a **24-month service warranty**. If you encounter any quality issues with your item, you are eligible for a new replacement. For assistance with application, troubleshooting, or any other inquiries, please feel free to contact Aideepen customer support.



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Related Documents - 2_GXJA0008-007

	<p>Aideepen 1200W 20A DC-DC Boost Converter Module: Specifications and Guide</p> <p>Detailed specifications, usage guide, and troubleshooting for the Aideepen 1200W 20A DC-DC Boost Converter Module, an adjustable voltage power supply module operating from 8-60V to 12-83V.</p>
	<p>SWM-103 Spot Welder Control Module: Instruction Manual</p> <p>Comprehensive instruction manual for the Aideepen SWM-103 spot welder control module, featuring double pulse trigger, voltage compensation, and parameter storage for DIY battery welding applications.</p>
	<p>U-18 USB Voltage and Current Tester User Manual</p> <p>Comprehensive user manual for the Aideepen U-18 USB Voltage and Current Tester. Learn about its features, safety precautions, interface operations, technical specifications, fast charging protocol testing (QC, PD), and PC software for detailed analysis.</p>

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