

MiOYOOW 616678

MiOYOOW DC Buck Converter Instruction Manual

MODEL: 616678

Introduction

This manual provides detailed instructions for the safe and efficient operation of your MiOYOOW DC Buck Converter. Please read this manual thoroughly before installation and use to ensure proper functionality and to prevent damage to the device or connected equipment.

Important Safety Instructions

- This is a DC power module. Do not connect it to AC power.
- Ensure correct polarity when connecting input and output terminals (VIN+, VIN-, OUT+, OUT-). Incorrect connections can cause damage.
- Always disconnect the power supply before making or changing any connections.
- Do not exceed the maximum input voltage (140V DC) or output current (22A) to prevent overheating and damage.
- Ensure adequate ventilation around the module, especially when operating at high power, as it is equipped with a fan for cooling.
- Keep the device away from moisture, dust, and extreme temperatures.
- Only qualified personnel should perform installation and maintenance.

Product Overview

The MiOYOOW DC Buck Converter is a high-power step-down module designed to convert a wide DC input voltage (12V-140V) to a lower, adjustable DC output voltage (0V-125V). It features constant voltage (CV) and constant current (CC) control, making it suitable for various applications requiring precise power regulation.



Figure 1: Top-down view of the DC Buck Converter module.



Figure 2: Angled view of the DC Buck Converter, highlighting the cooling fan.

Key Features

- **High Power Output:** Up to 2000W / 22A maximum output, suitable for demanding applications.
- **Wide Input Voltage Range:** Accepts DC input from 12V to 140V.
- **Adjustable Output:** Provides adjustable DC output from 0V to 125V.
- **Constant Voltage (CV) and Constant Current (CC) Control:** Allows for stable voltage output and current limiting to protect connected loads.
- **Multiple Protection Mechanisms:** Includes input under-voltage, output over-voltage, output over-current, and output over-power protection.
- **Efficient Cooling:** Equipped with an aluminum heat sink and fan for optimal thermal management.

Technical Specifications

Parameter	Value
Work Voltage (Input)	DC 12V-140V
Output Voltage	DC 0V-125V
Output Current	0-22A
Output Power (Max)	2000W
Max Output Voltage	$V_{in} * 0.945$
Output Ripple	150mV VPP
Conversion Efficiency	Approximately 95%
Input Under-voltage Protection	Yes (10V-145V adjustable, default 10V)
Output Over-voltage Protection	Yes (0V-130V adjustable, default 130V)
Output Over-current Protection	Yes (0A-23A adjustable, default 23A)
Output Over-power Protection	Yes (0W-2200W adjustable, default 2200W)

Setup Instructions

Follow these steps to correctly set up your DC Buck Converter module.

Connecting the Module

- Prepare Connections:** Ensure all power sources are disconnected before making any connections.
- Input Power Connection:** Connect your DC input power supply to the VIN+ (positive) and VIN- (negative) terminals on the module. Ensure correct polarity.
- Output Load Connection:** Connect your load to the OUT+ (positive) and OUT- (negative) terminals. Do not connect the load yet if you need to adjust output voltage/current first.
- Initial Power On:** Apply input power. The module is now ready for configuration.



Figure 3: Bottom view of the module with input/output terminals and DIP switches.

Operating Instructions

This section details how to adjust the output voltage and current for your specific application.

Setting Output Voltage (CV)

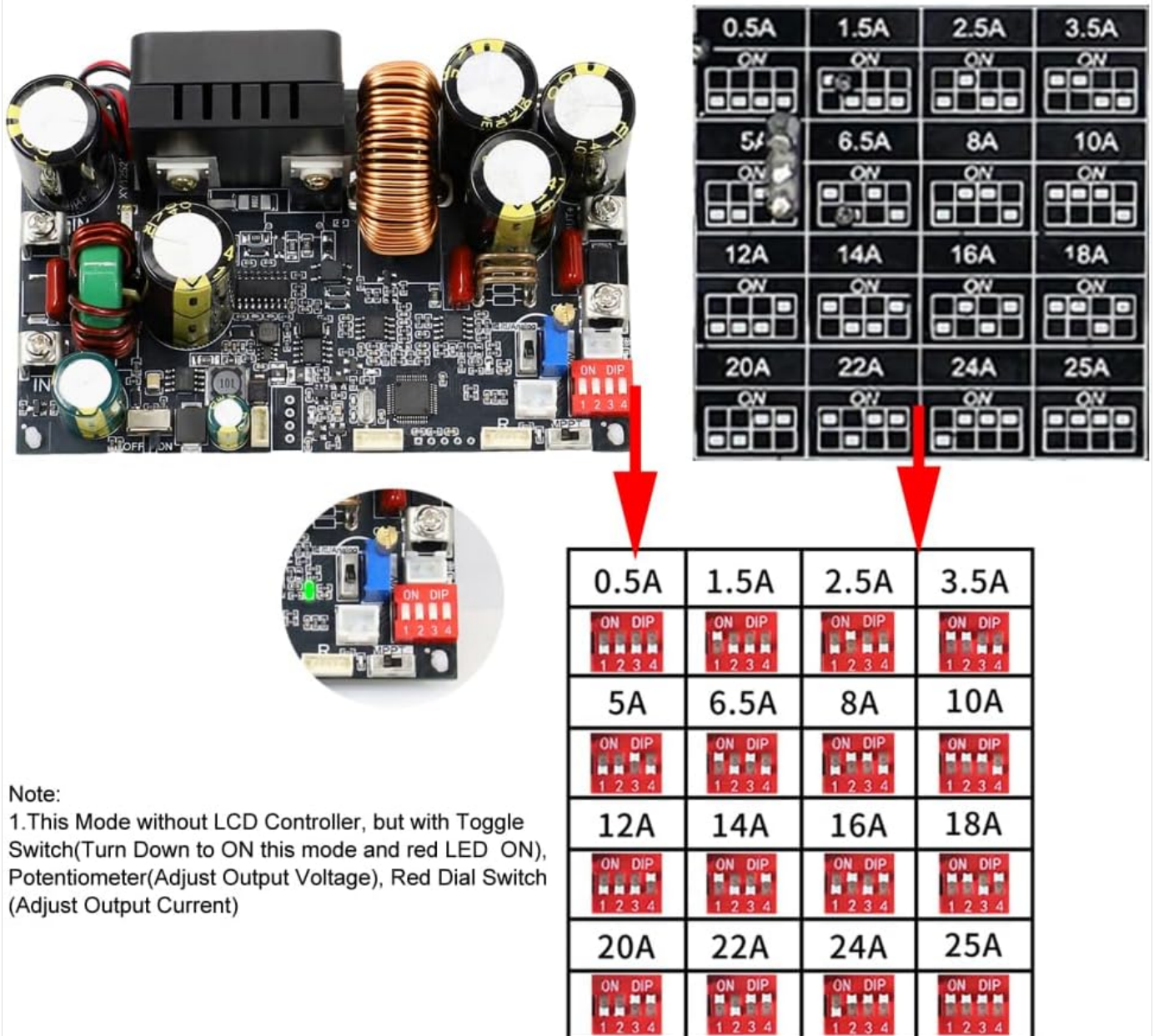
1. With input power applied and no load connected, use a multimeter to measure the voltage across the OUT+ and OUT- terminals.
2. Locate the voltage adjustment potentiometer (often labeled 'V-ADJ' or similar, typically a blue square component with a screw).
3. Carefully turn the potentiometer clockwise to increase the output voltage or counter-clockwise to decrease it until the desired voltage is reached.

Setting Output Current (CC) using DIP Switches

The output current limit is set using the red DIP switches on the module. Refer to Figure 4 for the switch configuration to achieve the desired current.

1. **Disconnect Load:** Ensure no load is connected to the output terminals.
2. **Set Current Limit:** Adjust the DIP switches according to the desired current value as shown in Figure 4. Each switch corresponds to a specific current increment.
3. **Verify Current (Optional):** To verify the current limit, you can connect a suitable load (e.g., a power resistor) and use an ammeter in series with the load. Adjust the current potentiometer (if present and separate from DIP switches, often labeled 'I-ADJ') to fine-tune if necessary, or rely on the DIP switch settings for the primary limit.
4. **Connect Load:** Once voltage and current limits are set, disconnect input power, connect your load, and then re-apply input power.

Independent Motherboard Output Voltage



Note:

1. This Mode without LCD Controller, but with Toggle Switch (Turn Down to ON this mode and red LED ON), Potentiometer (Adjust Output Voltage), Red Dial Switch (Adjust Output Current)

Figure 4: DIP switch configuration for setting output current (Independent Motherboard variant).

Note: The image above indicates that this mode operates without an LCD Controller, relying on the toggle switch (DIP switch) and potentiometer for adjustments.

Maintenance

- **Cleaning:** Periodically clean the module with a soft, dry cloth to remove dust. Ensure power is disconnected before cleaning.
- **Ventilation:** Ensure the cooling fan and heatsink fins are free from obstructions to maintain proper airflow.
- **Inspection:** Regularly inspect connections for tightness and signs of wear or damage.
- **Storage:** Store the module in a dry, cool environment when not in use.

Troubleshooting

Problem	Possible Cause	Solution
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No output voltage	No input power; Incorrect input polarity; Output protection triggered	Check input power supply; Verify VIN+ and VIN- connections; Check protection settings (e.g., over-voltage, under-voltage)
Output voltage unstable	Input voltage fluctuation; Overload; Loose connections	Ensure stable input power; Reduce load; Check all wiring connections
Module overheating	Excessive load; Insufficient ventilation; Fan malfunction	Reduce output power/current; Ensure clear airflow around the module; Check fan operation
Output current not reaching desired level	Incorrect DIP switch setting; Load resistance too high; Output current protection triggered	Verify DIP switch configuration (Figure 4); Check load requirements; Adjust output current protection limit

Warranty and Support

This MiOYOOOW product is covered by a standard manufacturer’s warranty. For specific warranty terms, technical support, or service inquiries, please refer to the product packaging or contact your retailer. Keep your purchase receipt as proof of purchase.

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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