MiOYOOW Host

MiOYOOW Boost Buck Voltage Converter Instruction Manual

Model: Host

1. Introduction

This manual provides essential information for the safe and effective use of the MiOYOOW Boost Buck Voltage Converter. This DC-DC module is designed to convert an input voltage range of 6V-36V to an adjustable output voltage of 0.5V-36V, with a maximum output current of 5A and power of 60W. It features Constant Voltage Constant Current (CVCC) capabilities, a large LCD display, and multiple protection mechanisms, making it suitable for various applications including solar charging and general power supply.

2. Safety Information

- This is a DC power module. **Do not connect it to AC power.**
- Always connect the input power supply before connecting any load or battery.
- When charging batteries, ensure the output voltage is set higher than the battery voltage.
- Verify that the input power source can supply more power than the connected load requires.
- Battery charging requires specialized knowledge. Non-professionals should not attempt direct battery charging to prevent fire or explosion hazards.
- If the module becomes hot during operation, reduce the output power to prevent damage.
- Ensure proper ventilation around the module during operation.
- Observe correct polarity for all connections (VIN+, VIN-, OUT+, OUT-). Reversing polarity can damage the device.

3. Product Features

- MPPT Solar Charging capability.
- Adjustable Constant Voltage (CV) and Constant Current (CC) output.
- Large, clear LCD display for voltage, current, and power readings.
- Programmable multi-parameter settings.

- Multiple Protection Mechanisms: Input Anti-reverse, Output Anti-backflow, Input Under-voltage, Output Over-voltage, Output Over-current, Output Over-power, Over-temperature, Timeout, Over-capacity, Over-energy.
- Soft start function.
- Supports standard Modbus protocol for serial communication.
- Firmware upgrade support.

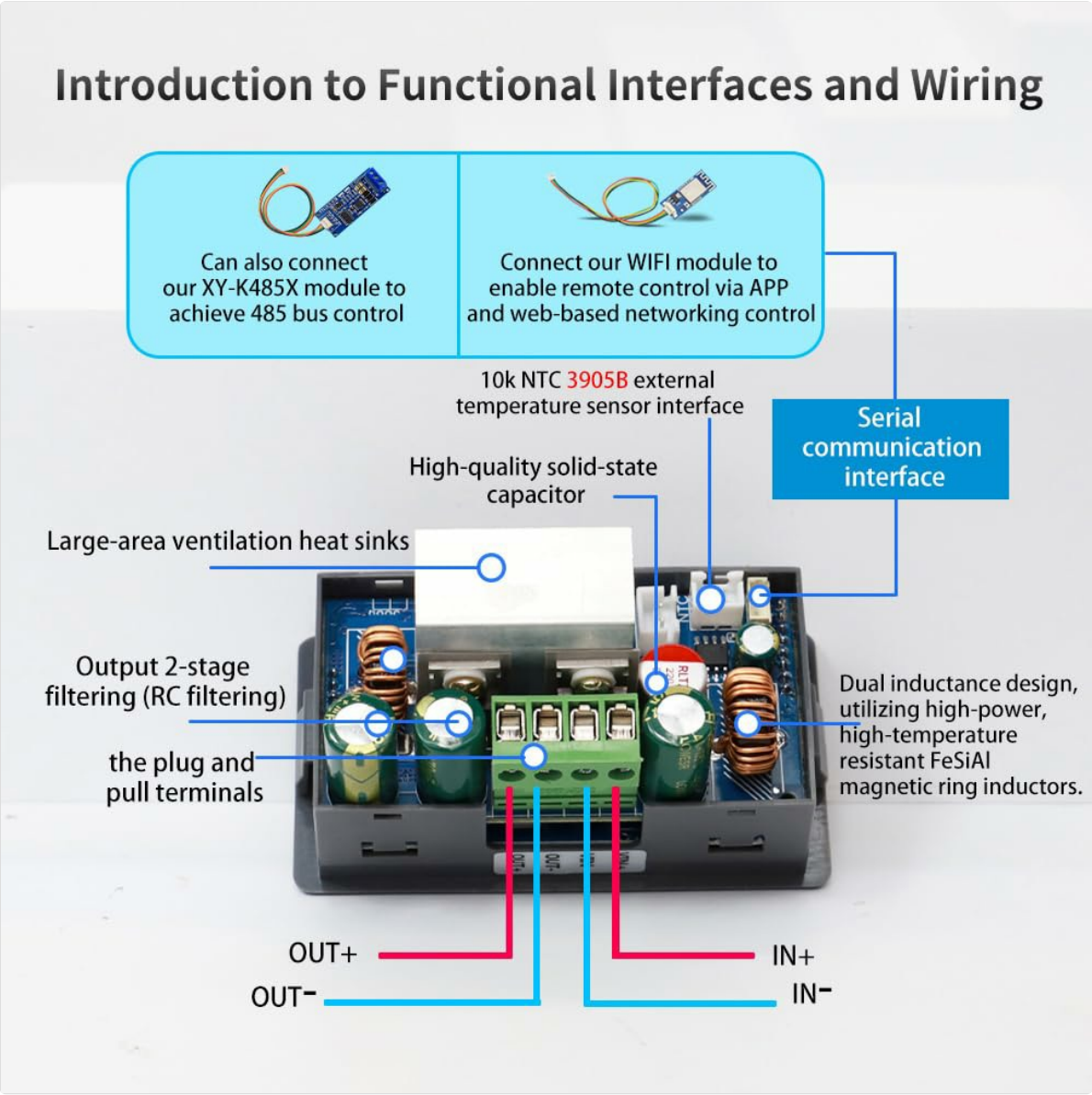
4. Specifications

Parameter	Value
Work Voltage	DC 6V-36V
Output Voltage	DC 0.5V-36V
Output Current	0~5A
Output Power	60W
Voltage Display Precision	+/-0.5%+0.01V
Voltage Display Resolution	0.01V
Current Display Precision	+/-0.5%+0.003A
Current Display Resolution	0.001A
Conversion Efficiency	About 88%
Soft Start	Yes
Input Anti-reverse Protection	Yes
Output Anti-backflow Protection	Yes
Input Under-voltage Protection	Yes (5.5V-36V adjustable, default 5.5V)
Output Over-voltage Protection	Yes (0V-38V adjustable, default 38V)
Output Over-current Protection	Yes (0A-5.2A adjustable, default 5.2A)
Output Over-power Protection	Yes (0W-60W adjustable, default 65W)
Over-temperature Protection	Yes (0-110℃ adjustable, default 95℃)
Timeout Protection	Yes (0-100H adjustable, default OFF)
Over-capacity Protection	Yes (0-9999AH adjustable, default OFF)
Over-energy Protection	Yes (0-4200KWH adjustable, default OFF)
Work Temperature	-20℃~85℃
Work Humidity	10%~85%RH
Size	79mm * 50mm * 43mm

5. Setup and Installation

Follow these steps for proper setup and installation of your Boost Buck Voltage Converter:

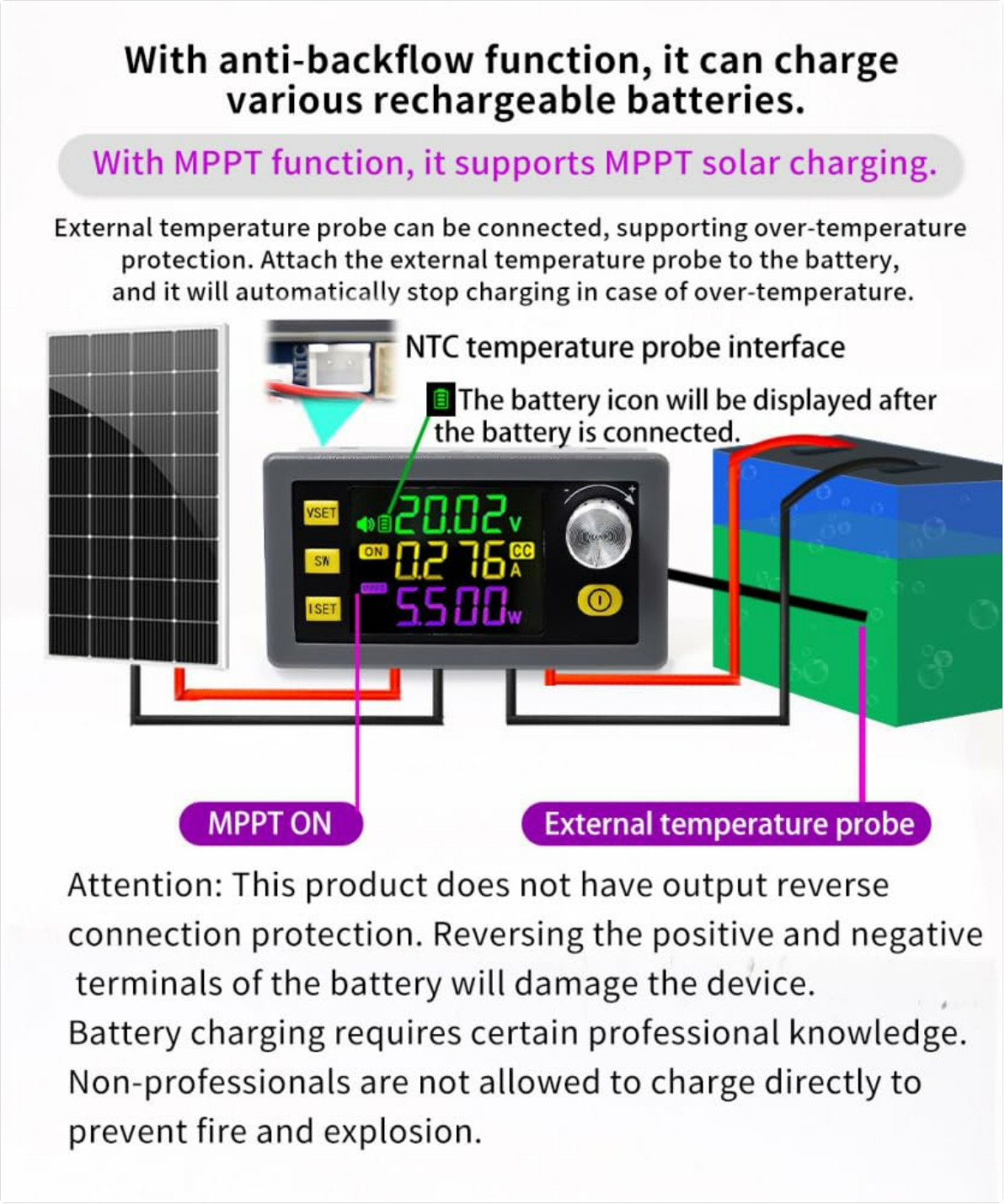
1. **Wiring Connections:**



This image illustrates the internal components and wiring terminals. Connect your input power to **IN+** and **IN-**, and your load or battery to **OUT+** and **OUT-**. The module features large-area ventilation heat sinks, high-quality solid-state capacitors, and dual inductance design for stable operation. A 10k NTC 3905B external temperature sensor interface is also visible, along with a serial communication interface.

- Connect the positive terminal of your DC power source to **VIN+** and the negative terminal to **VIN-**.
- Connect the positive terminal of your load or battery to **OUT+** and the negative terminal to **OUT-**.
- Ensure all connections are secure and observe correct polarity.

2. **Optional External Connections:**



This diagram shows the module connected to a solar panel (MPPT ON) and a battery with an external temperature probe. The NTC temperature probe interface allows for monitoring battery temperature, and the battery icon is displayed on the LCD when connected. Note the warning about the lack of output reverse connection protection.

- An external temperature probe can be connected to the NTC interface for temperature monitoring, especially useful during battery charging.
- The module supports connection to an XY-K485X module for 485 bus control or a WiFi module for remote control via APP and web-based networking.

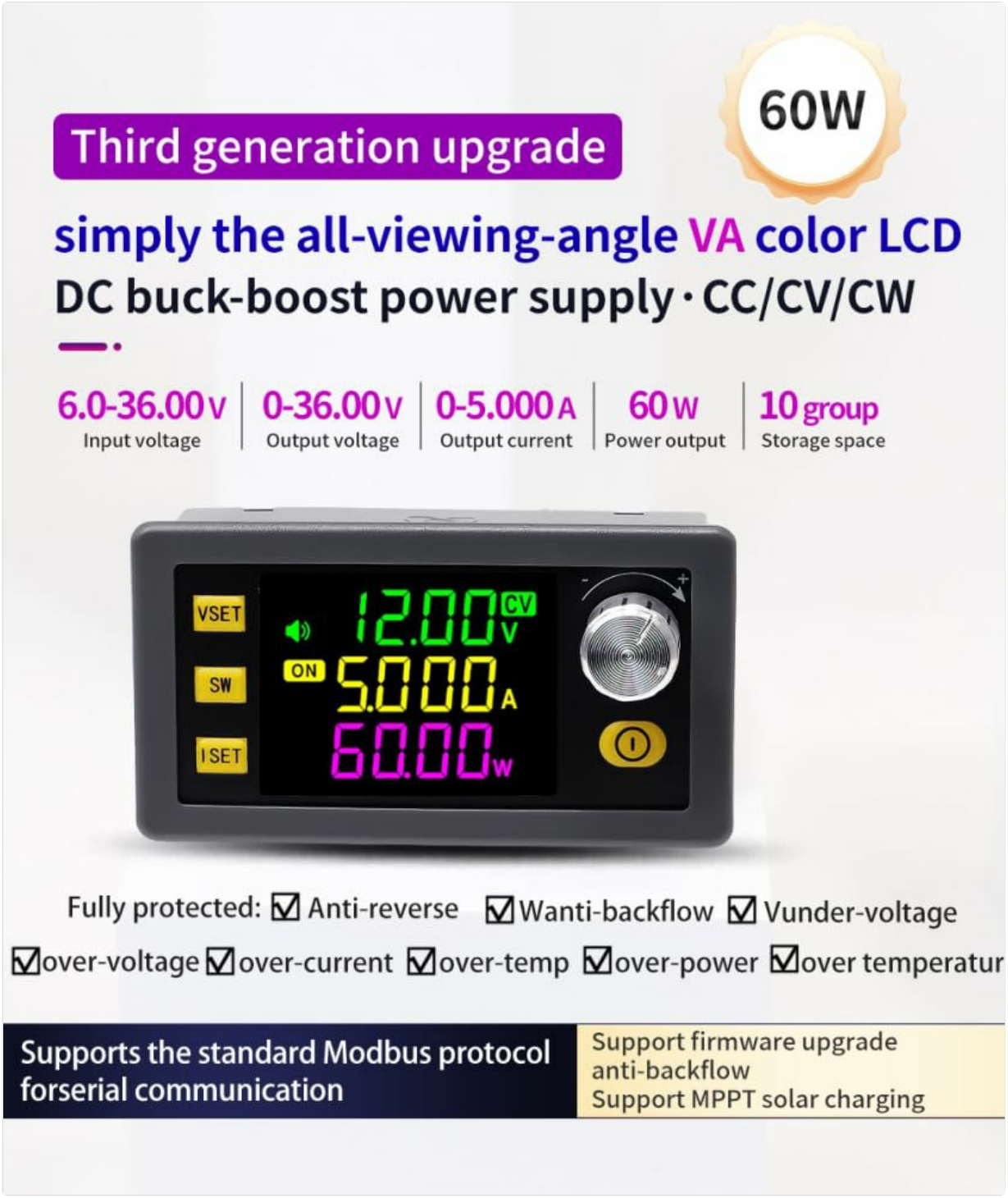
3. **Mounting (Optional):**

This image provides the physical dimensions of the module (79mm x 50mm x 43mm) and the recommended opening size for panel mounting (71.3mm x 39mm).

- If panel mounting, refer to the provided dimensions for the recommended opening size: 71.3mm x 39mm.

6. Operating Instructions

The Boost Buck Voltage Converter features an intuitive interface for setting and monitoring parameters.



This image displays the main interface of the converter, highlighting the LCD screen with readings for voltage, current, and power. The VSET and ISET buttons are used for setting voltage and current, respectively, while the SW button cycles through display modes. The rotary encoder allows for fine adjustments.

1. **Power On:** After connecting the input voltage (VIN+ and VIN-), the LCD will power on and display current parameters.
2. **Setting Output Voltage (CV Mode):**
   - Press the **VSET** button. The voltage value on the LCD will start blinking.
   - Use the rotary encoder to adjust the desired output voltage. Turn clockwise to increase, counter-clockwise to decrease.
   - Press **VSET** again to confirm the setting, or wait a few seconds for it to auto-confirm.
3. **Setting Output Current Limit (CC Mode):**
   - Press the **ISET** button. The current value on the LCD will start blinking.

- Use the rotary encoder to adjust the desired maximum output current.
- Press **ISET** again to confirm the setting, or wait a few seconds for it to auto-confirm.

4. **Display Modes:** Press the **SW** button to cycle through different display modes, such as input voltage, output voltage, output current, and output power.
5. **Enabling/Disabling Output:** The button next to the rotary encoder (often labeled with a power symbol) typically controls the output enable/disable function. Press it to toggle the output power.
6. **Advanced Settings:** Refer to the detailed product documentation for instructions on programming multi-parameters and configuring protection mechanisms (e.g., input under-voltage, output over-voltage, over-temperature limits).

7. Maintenance

To ensure the longevity and optimal performance of your Boost Buck Voltage Converter, follow these maintenance guidelines:

- **Cleaning:** Keep the module clean and free from dust and debris. Use a soft, dry cloth for cleaning. Avoid using liquids or abrasive cleaners.
- **Ventilation:** Ensure that the heat sinks are not obstructed and that there is adequate airflow around the module to prevent overheating.
- **Connections:** Periodically check all wiring connections to ensure they are secure and free from corrosion. Loose connections can lead to unstable operation or damage.
- **Storage:** When not in use, store the module in a dry, cool environment away from direct sunlight and extreme temperatures.

8. Troubleshooting

If you encounter issues with your Boost Buck Voltage Converter, consider the following troubleshooting steps:

- **No Output Voltage/Current:**
  - Check if the output is enabled (toggle the output ON/OFF button).
  - Verify input voltage is within the 6V-36V range.
  - Ensure all wiring connections are correct and secure.
  - Check if any protection mechanisms (e.g., over-current, over-voltage, under-voltage) have been triggered. The LCD may display an error code or indicator.
- **Incorrect Output Voltage/Current:**
  - Re-adjust the VSET and ISET parameters using the buttons and rotary encoder.
  - Ensure your measurement tools are accurate.
  - Check for excessive load that might be causing voltage drop or current limiting.
- **Module Overheating:**
  - Reduce the output power or current.
  - Ensure adequate ventilation around the module.
  - Verify that the ambient temperature is within the specified operating range (-20℃~85℃).

- **LCD Display Issues:**
  - Check input power stability.
  - If the display is blank, ensure the module is receiving power.

9. Customer Support

Thank you for your purchase. If you encounter any problems or have questions regarding the MiOYOOW Boost Buck Voltage Converter, please do not hesitate to contact customer support at any time. We are committed to assisting you.