

DC990 Buck Converter User Manual

Dongguan Leyi Intelligent Technology Co., Ltd.

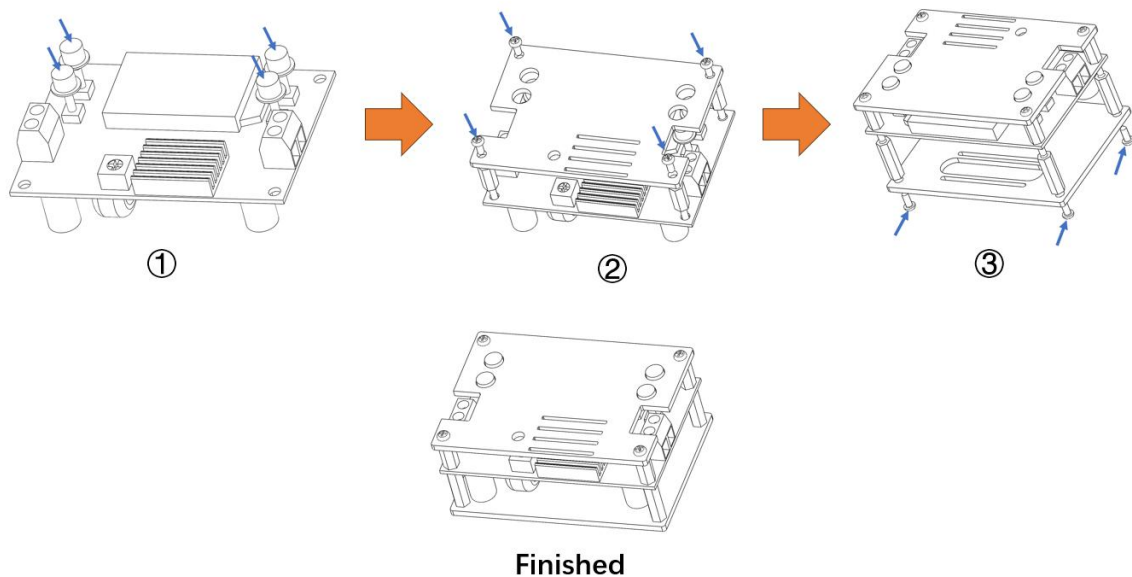
1. Precautions

- This product is only suitable for DC step-down applications within the specified input parameter range and is not suitable for any AC input.
- It is strictly forbidden to short-circuit IN- and OUT-terminals; otherwise, the constant current function will be disabled.
- Ensure that the power supply capacity is always greater than the power required by the output load.
- As this product generates heat during operation, it must be installed in a well-ventilated area. Do not cover or wrap the module. When used at maximum current for extended periods, proper ventilation and cooling must be ensured.
- Keep the product dry. Do not allow it to get wet or submerged in water to prevent short circuits.



2. Assembly Instructions

Assemble the included parts in the package by following the steps below:

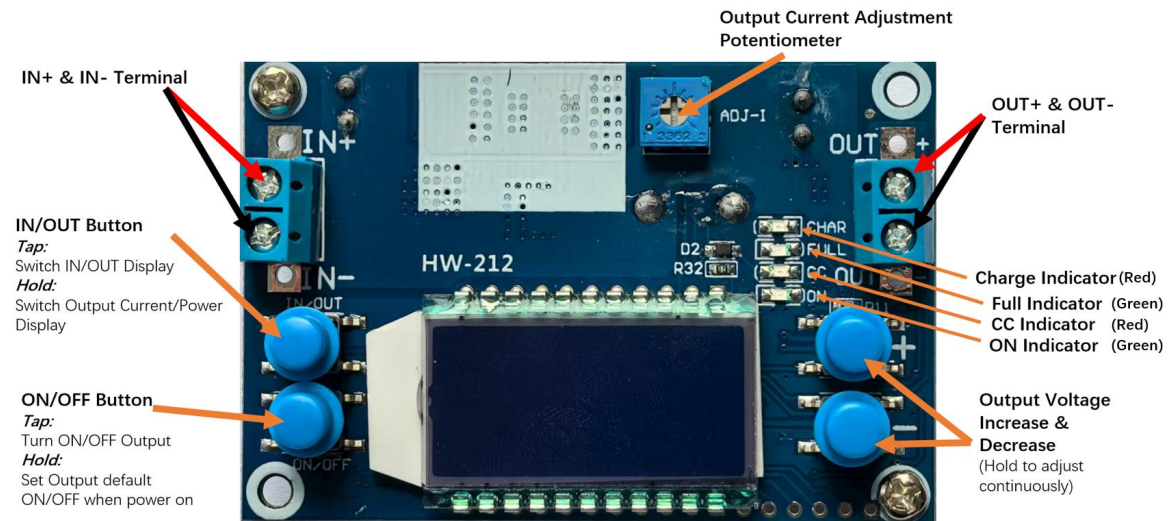


Step 1. Install buttons.

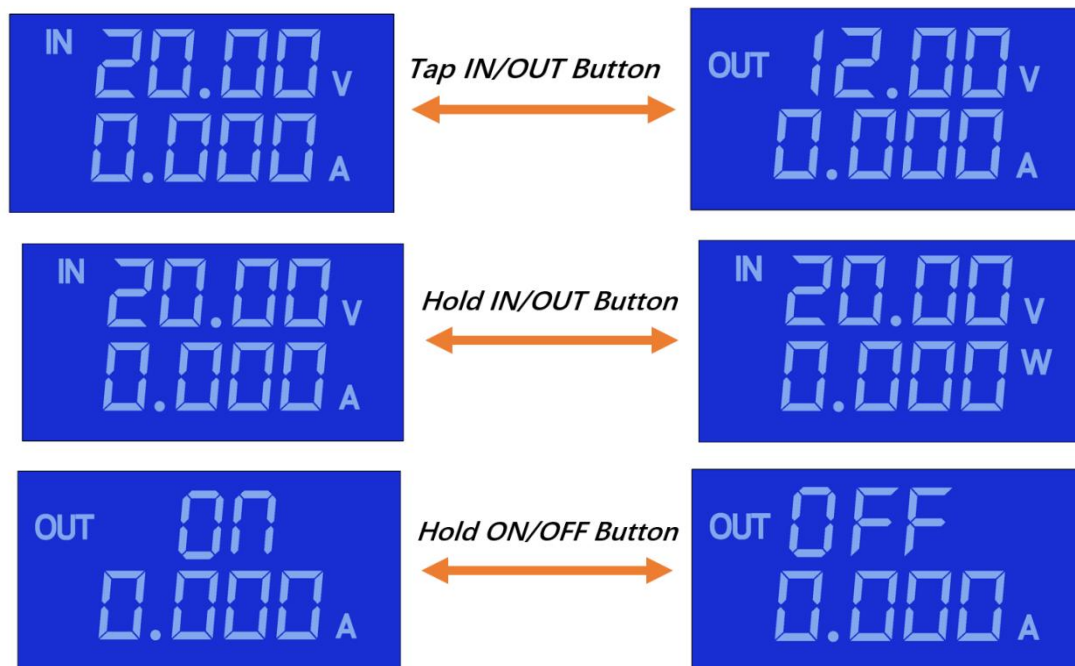
Step 2. Use the studs and screws to install the top acrylic plate, then tighten screws.

Step 3. Use the studs and screws to install the bottom acrylic plate, then tighten screws.

3.Button, Terminal, and Indicator Description



4.Operating Instructions



- TAP the **IN/OUT Button** to switch between input and output display pages.
- HOLD the **IN/OUT Button** to switch between current and power display.
- TAP the **ON/OFF Button** to turn the output on or off. When the output is on, the **ON Indicator** lights up.
- HOLD the **ON/OFF Button** to set the default power-on state (output ON or OFF).
- On the **OUT page**, TAP the **Output Voltage Increase/Decrease Buttons** to raise or lower the output voltage (HOLD for continuous adjustment).

- Rotate the **Current Adjustment Potentiometer** clockwise or counterclockwise to adjust the current limit value. If the output current exceeds the set limit, the converter will switch to **CC (Constant Current)** mode.

5. Typical Application Introduction

Note: Before using this product, you must confirm the required voltage and current of the output side (such as the battery or load), and ensure that they do not exceed the maximum output 32V/4.5A. Otherwise, there is a risk of damaging the product, the battery, or the connected load!

Warning:

- During the initial charging stage, the Charge Indicator lights up. When the charging current drops below 1/10 of the current limit value, the Full Indicator turns on and the Charge Indicator goes off, indicating that charging is complete. Please disconnect the battery.
- Carefully read the battery manual to determine the proper float charging voltage and charging current limit; failure to do so may damage the battery.
- Overcurrent protection value adjustment steps must be done under no-load conditions (do not connect the battery).
- This product does not have **reverse current protection**. (During charging, if the input terminal is not powered and the battery is connected first, the output voltage will be higher than the input voltage—this condition, called **reverse current**, which may damage the product.) Please make sure to strictly follow the order 1) Power on the input terminal; 2) Complete the parameter settings; 3) Connect the battery. Do not reverse the sequence, otherwise both the product and the battery may be damaged!



5.1 Used as a Regular Buck Converter with Overcurrent Protection

(1) On the OUT page, set the output voltage to the desired value and turn on the output. At this time, the ON Indicator lights up.

(2) Rotate the Current Adjustment Potentiometer fully counterclockwise. The CC Indicator and Charge Indicator will light up. Then rotate the potentiometer clockwise to set the desired current limit. The CC Indicator and Charge Indicator will turn off, and the Full Indicator will light up.

(3) Set multimeter to “10A current range” to measure the short-circuit current at the output terminals (connect the meter probes directly to the output positive and negative terminals). The reading on the multimeter is the overcurrent protection current value.

(4) Connect the load and start operation.

5.2 Used as a Battery Charger

(1) You must first read the battery specifications to determine the float voltage and charging current. (For example, if the lithium battery parameters are 3.7V / 2200mAh, the float voltage is 4.2V, and the maximum charging current is 1C, i.e., 2200mA.)

(2) Adjust the OUT voltage to the float charging voltage.

(3) Adjust the Current Adjustment Potentiometer as described in **section 5.1** to set the desired current limit.

Note: When used for charging, the current limit must not exceed the battery's maximum charging current. If you are unsure of the battery's maximum charging current, please consult your battery supplier before using this product.

(4) Connect the battery and turn on the output to start charging.

5.3 Used as a High-Power Load Driver Module

(1) Determine the maximum operating current and voltage required by your load.

(2) Under no-load conditions, use the buttons to set the output voltage to the load's working voltage.

(3) Adjust the overcurrent protection current value according to the method described in **section 5.1**, setting it to the maximum operating current of the constant current load.

(4) Connect the load and turn on the output.

6. Specification Table

Parameters	Value
Model No.	DC990
Input Voltage Range	6.5-36V
Output Voltage Range	1.2-32V
Output Current Range	3.5A(Typical), 4.5A(Max)
Output Power Range	50W(Typical), 75W (Good heat dissipation conditions)
Voltage Measurement Accuracy	$\pm 0.1V$
Current Measurement Accuracy	$\pm 0.05A$
Power Efficiency	94%
Capacity measurement accuracy	$\pm 3\%$ when Current $< 10A$ $\pm 1\%$ when Current $> 10A$
Short Circuit Protection	YES
Temperature Range	32-167°F

7. Customer Service and Technical Support

If you encounter any issues with the product, please scan the QR codes below for further assistance.



SETUP GUIDE



SUPPORT



Download Multilingual Manuals