

Whole Group Under 30V 10A
Battery Capacity Tester User Manual
(HT-BCT10A30V)

Heltec Energy

1. Introduction

The contents of this manual have fulfilled the obligation of reminding and warning according to the safety production law! Before using this product, you must read and understand the contents of the manual carefully! This product is only for professional use, you must know Any operation on the lithium battery is extremely dangerous! Therefore, you must set the machine correctly and reasonably according to the specifications provided by the battery manufacturer. All direct or indirect consequences caused by the use of this product have nothing to do with our company! This product and accessories will be upgraded from time to time without notice.

2. Product Parameters

Model	HT-BCT10A30V
Charging range	1-30V/0.5-10A Adj
Discharge range	1-30V/0.5-10A Adj
Work step	Charge/Discharge/Rest time/Cycle
Communication	USB, WIN XP or above systems, Chinese or English
Protective function	Battery overvoltage/Battery reverse connection/ Battery disconnection/Fan not running
Calibration equipment	V: Fluke 8845A , A: Gwinstek PCS-1000I
Accuracy	V \pm 0.1%,A \pm 0.1%(The validity period of accuracy, within one year from the date of purchase)
Cooling	Cooling fans open at 40°C, protected at 83°C (please check and maintain the fans regularly)
Working environment	0-40°C, air circulation, do not allow heat to accumulate around the machine
Warning	It is forbidden to test batteries over 30V
Power	AC200-240V 50/60HZ (If you need 110V, please inform us in advance)
Size and weight	Product Size 167*165*240mm,Weight 2.6Kg
Model	HT-BCT10A30V
Charging range	1-30V/0.5-10A Adj

3. Appearance introduction



- ① Power switch: If the power is suddenly cut off during the test, the test data will not be saved.
- ② Display screens: Display charging and discharging parameters and discharge curve
- ③ Coding switches: Rotate to adjust working mode, press to set parameters
- ④ Start/Stop button: any operation in running state must be paused first.
- ⑤ Battery positive input: 1-2-3 pin through current, 4 pin voltage detection.
- ⑥ Battery negative input: 1-2-3 pin through current, 4 pin voltage detection.

4. Use method

1. Start up first, and then clip the battery. Press_the_setting knob to enter the setting page, rotate left and right to adjust the parameters, press to determine, Set the parameters correctly and save the exit.



Parameters to be set in Charging mode:

Single cell Charging End V: lithium titan ate 2.7-2.8V, 18650/ternary/polymer 4.1-4.2V, lithium iron phosphate 3.6-3.65V

Battery pack Charging End V=Number of strings*single-cell Charging End V-0.5V.

Charging current: It shall be set at 10-20% of the capacity of a single battery, and the battery cell shall not generate heat as much as possible.

Judging full current: When constant current charging is switched to constant voltage charging, and the charging current decreases to this value, it is judged as fully charged and set to 0.3A by default.

Parameters to be set in Discharge mode:

Single cell Discharge End V: lithium titan ate 1.6-1.7V, 18650/ternary/polymer 2.75-2.8V, lithium iron phosphate 2.4-2.5V.

Battery pack Discharge End V= Number of strings*single-cell Discharge End V+0.5V.

Discharge current: It shall be set at 20-50% of the capacity of a single battery, and the battery cell shall not generate heat as much as possible.

Parameters to be set in Cycle mode:

After setting the parameters of charging mode and discharging mode at the same time
Keep voltage: In cycle mode, the last time the Charging End V, Allowed to be set between Charge End V Discharge End V .

Voltage recording: Due to consistency issues such as capacity, internal resistance, and pressure difference in the battery cells, BMS may be protected in advance. Therefore it is possible to choose whether to record the voltage value at the moment of protection of the protection board.

Resting time: Let the battery cool down and rest for a while, usually set to 10 minutes.

Cycle: Max 5 times,

1 times(charge-discharge-charge),

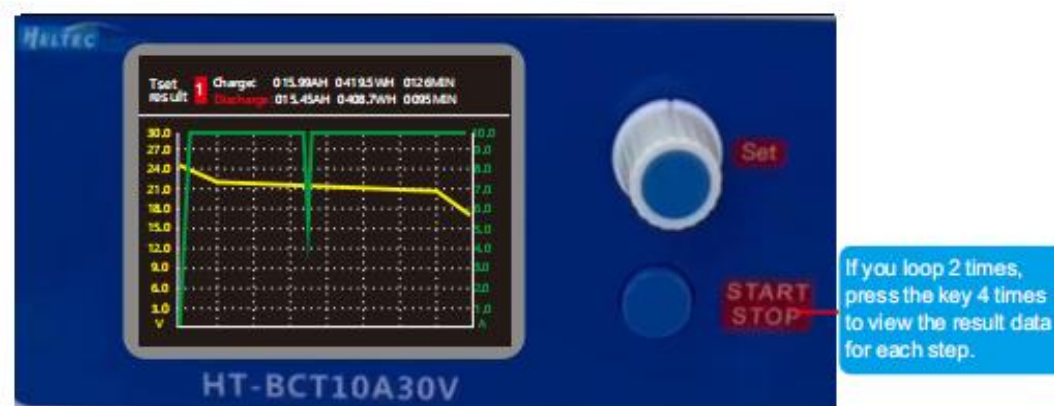
2 times(charge-discharge-charge-discharge-charge),

3 times(charge-discharge-charge-discharge-charge-discharge-charge).

2. Return to the home page, rotate the setting button to the left or right to the working state, and press again to pause.



3. After waiting for the test to end, the result page will automatically pop up (press any button to stop the alarm sound) and record it manually. Test the results, and then test the next battery.



Test results: 1 indicates the first cycle, the AH/WH/min of charge and discharge respectively. Press the start / stop button further to show the results and curve of each step in turn.

The yellow numbers represent the voltage axis, and the yellow curve represents the voltage curve.

Green numbers represent the current axis, green numbers represent the current curve.

When the battery performance is good, the voltage and current should be a relatively smooth curve. When the voltage and current curve rises and falls sharply, it may be that there is a pause during the test or the charging and discharging current is too large.

Or the internal resistance of the battery is too large and it is close to being scrapped.

If the test result is empty, the working step is less than 2 minutes, so the data will not be recorded.

5. Cautions

- In any working mode, the results and data will be displayed only after the test is completed, and the working mode cannot be switched in the middle, otherwise the data will be cleared.
- During the test, you can pause, but you cannot power off or switch the working mode, otherwise the data will be cleared.
- If you need to perform any operation during the test, you must first press the pause button.
- In any working mode, the machine must work for more than 2 minutes before it starts recording data and overwrites the previous data.
- If the cell is seriously heated, it means that the current you set is too large. If the voltage rises/drops rapidly and causes the machine to alarm, it means that the clamp is in poor contact with the battery, or the internal resistance of the cell is too large to be scrapped.
- It is forbidden to test batteries without protective plates/non-rechargeable/damaged bulges.
- For BMS lithium battery packs with different charging and discharging ports, they can only be charged from the charging port and discharged from the discharging port, The use of cycle mode is prohibited.
- The surface of the radiator has a high temperature and is connected to the positive electrode of the battery. Short circuit and touch are prohibited.
- Do not test batteries whose voltage exceeds 30V, and do not connect them in reverse, otherwise the warranty will be voided.
- The Charge End V/A and Discharge End V/A must be set correctly and reasonably.
- Please perform the test in a supervised open environment, and there should be no high temperature, flammable, explosive and valuables around.
- This machine cannot be rented/transferred/gifted to a third party for use, otherwise the consequences will be at your own risk and no warranty will be provided.
- Please use a well-grounded socket (otherwise there may be a risk of leakage or slight induction).
- This machine is just a tool, so the company will not be liable for any direct/indirect losses beyond the price of this product under any circumstances.

6. The warranty policy

When the product has quality problems, and the warranty will be one year.

The warranty service is limited to normal use: man-made damage, self-disassembly, modification and repair, use not in accordance with the instructions, and damage caused by external force majeure factors are not within the scope of free warranty.

Accessories such as test fixtures are consumables without warranty.

When you need warranty service, please contact your dealer for processing. If you cannot contact the dealer, you can contact our company by email or phone.

There are no after-sales service stations in other countries except China. If you need warranty service, please send the product to us for free repair, but you need to pay the freight for the round trip.