HT-DC150ABP
Battery Capacity Tester
(Discharge)
User Manual

1. Product Introduction

The HT-DC150ABP battery discharge capacity tester is suitable for battery packs within the voltage range of 10 to 120 volts with protection boards. It is commonly used by electric vehicle dealers and battery manufacturers for testing battery performance and features functions such as constant voltage discharge, timed discharge, and fixed capacity discharge. It can accurately collect real-time battery voltage signals and perform data storage and operation processing. This device has the characteristics of high precision, strong timeliness, simple operation, and reliable practicality.

2. Product Features

① During discharge, the system automatically collects battery voltage and current data and displays the curve changes, to meet various testing requirements.
② The current can be adjusted, and its maximum discharge current can reach 150 amperes (the maximum support is 150A for voltages below 100V, and 100A for voltages above 100V).
③ The instrument supports reverse connection of the battery, overvoltage, overcurrent, high temperature of the battery, and four internal high-temperature alarms and protection measures, to ensure the safety of the battery and the equipment.
④ The operation interface is simple and clear, allowing for easy setting of battery parameters. It also displays real-time data such as battery voltage, current, capacity, and energy.

3. Product Main Parameters

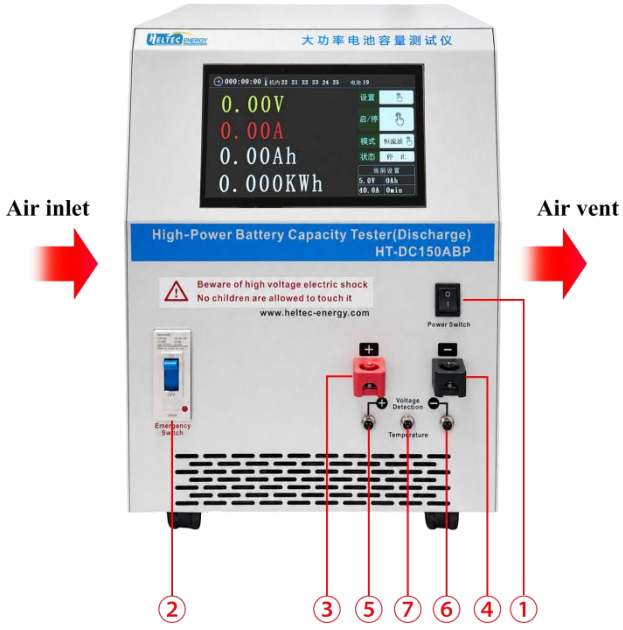
Model	HT-DC150ABP
Scope of application	Batteries within 10-120V
Discharge parameters	10 - 120V adjustable (step by 0.1V), 1 - 150A adjustable (step by 0.1A) Maximum 150A below 100V, maximum 100A above 100V
Working mode	Constant voltage discharge/Timed discharge/constant capacity discharge
Communication	/
Protective function	Over-voltage/Reverse connection/over-current/battery high temperature/4-channel high-temperature alarm and protection within the machine
Calibration equipment	Voltage and current standard source: GuWei PCS-1000I
Error range	Voltage:±0.1%,current:±0.35%,(The accuracy guarantee period is one year from the date of purchase)
Heat dissipation	Forced air cooling and delayed operation for 2 minutes (Please regularly check and maintain the fan operation)

Power supply	AC110-240V 150W 50/60HZ
Working environment/ matters needing attention	This machine uses heating wires to consume electrical energy. During operation, it generates a large amount of heat. Therefore, it is necessary to ensure there is a sufficiently large open space with good ventilation and heat dissipation. Moreover, someone must be on duty during operation. No objects are allowed within 2 meters of the left intake port and the right outlet port. Otherwise, it may damage the machine or cause a fire. If the machine detects a high temperature alarm, a negative pressure fan should be installed to force air convection or the machine's outlet should face the window for heat dissipation.
Size/weight	Wide:390 high:550 long: 605mm, Net weight:27.4Kg

Product application scope

It is applicable to all kinds of electric vehicle dealers and battery manufacturers, and is used for testing the performance of batteries, such as electric vehicle batteries, three-wheeler batteries, sightseeing vehicle batteries, and other large and medium-sized electronic product batteries or battery packs.

4. Product Appearance



There must be no items within 2 meters on the left and 2 meters on the right,To prevent fire (it is recommended to dissipate heat to the outside facing the window) !

① Power switch: Do not cut off the power during the testing process; otherwise, the test data cannot be saved.The device must be turned off only after the cooling fan has completely stopped rotating.

②Emergency stop switch: The connection to the positive terminal of the battery can be immediately disconnected (this function is prohibited from being used in normal circumstances)
③Battery positive terminal: Do not connect it in reverse, tighten the nut to ensure maximum contact area with the fixture
④ Battery negative terminal: Do not reverse the connection, tighten the nut to ensure maximum contact area with the fixture
⑤ Positive voltage detection port: Do not reverse the connection, tighten the nut
⑥ Negative voltage detection port: Do not reverse the connection, tighten the nut
⑦External temperature detection port: used to detect battery temperature. If it exceeds 55 degrees, the machine will stop working

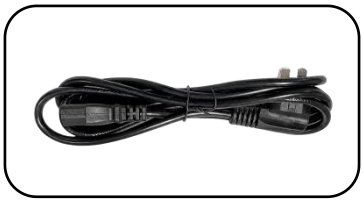
5. Product List



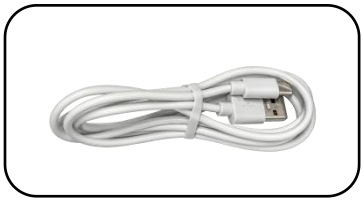
Tester



Testing Clip



Power Cord



Data line

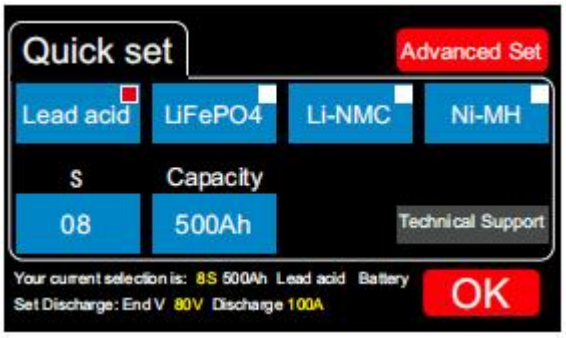
6. Basic Operation Instructions

1.First, turn on the machine and then secure the battery. Click the "Settings" button on the screen to enter the quick settings or advanced settings page. After completing the settings, return to this page. All the parameters you have set will be displayed. Carefully check for any errors, then press the "Start/Stop" button to begin discharging.

main page



Quick Setup Page



2. After entering the quick settings page, if you continue to click on the advanced settings, you will move to the next page. If you don't want to calculate the discharge cut-off voltage and current, you can select the type/number of series/ battery capacity of the battery to be tested on this page, and then let the system calculate automatically. During the system calculation, based on the common information of the battery cells (as shown in the table below), it may not be comprehensive or accurate. You are required to confirm it yourself.

Single battery	Lead-acid battery	Nickel-metal hydride battery	LFP battery	NCM battery
Rated voltage	12V	1.2V	3.2V	3.7V
Discharge cut-off voltage	10V	0.9V	2.5V	2.8V
Discharge current	≤20% of the capacity	≤20% of the capacity	≤50% of the capacity	≤50% of the capacity

3.When you click on advanced settings, you will enter the following page where you can set the discharge method as needed.

Discharge A It is recommended to set it according to the battery specification sheet, generally at 20-50% of the battery capacity.

End V The termination voltage of discharge. Discharge stops when this voltage is reached. It is recommended to set it according to the battery specification sheet or calculate it with reference to the above table.

End Ah Discharge at a fixed capacity (set to 0000 to turn off this function). For example, if you need to discharge 100Ah, just set the cut-off capacity to 100Ah. When it reaches 100Ah, the machine will automatically stop discharge.

End Time Discharge at the set time (set to 0000 to turn off this function). For example, if you need to discharge for 90 minutes, set the cut-off time to 90 minutes. When it reaches 90 minutes, the machine will automatically stop discharging.

V Follower If the shutdown voltage of the protection board is captured, will the cut-off voltage be automatically modified to the current captured voltage value? By default, this function

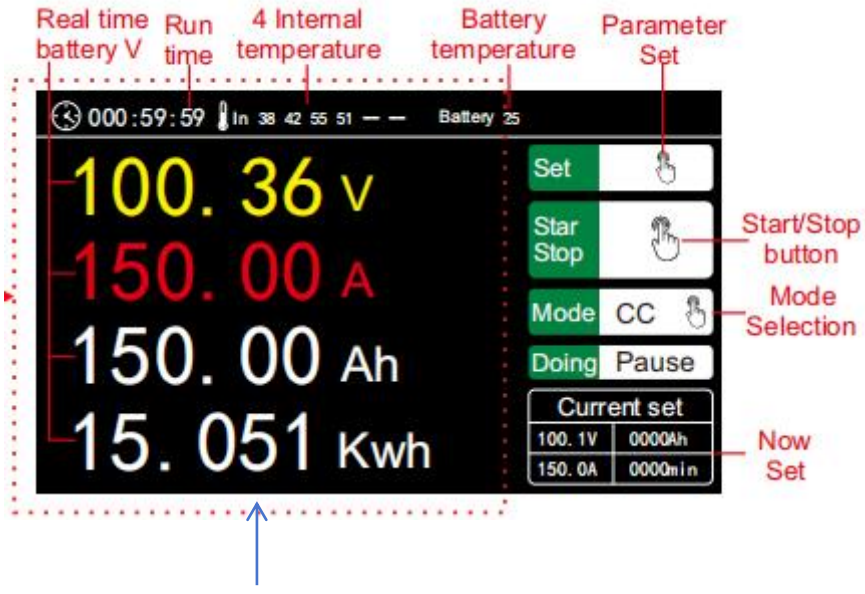
will be disabled.

Cap Calibration Set a capacity standard value, and when the test is completed, automatically compare the actual capacity with the standard value. If the deviation is less than 5%, it is judged that the capacity meets the standard. Otherwise, it is judged as insufficient capacity, and this function is disabled by default.



4.After setting the above parameters, simply click "Save" to return to the main page. On the main page, you can see "Battery Voltage", "Running Time", "Internal Temperature", and "Current Settings Parameters". After confirming there are no errors, click the "Start/Stop" button to begin discharging. If you need to pause during the process, you can click the "Start/Stop" button (but not the "Power Off" button).

If there is no operation within 3 minutes, the display will automatically reduce its brightness. Clicking anywhere will wake it up.



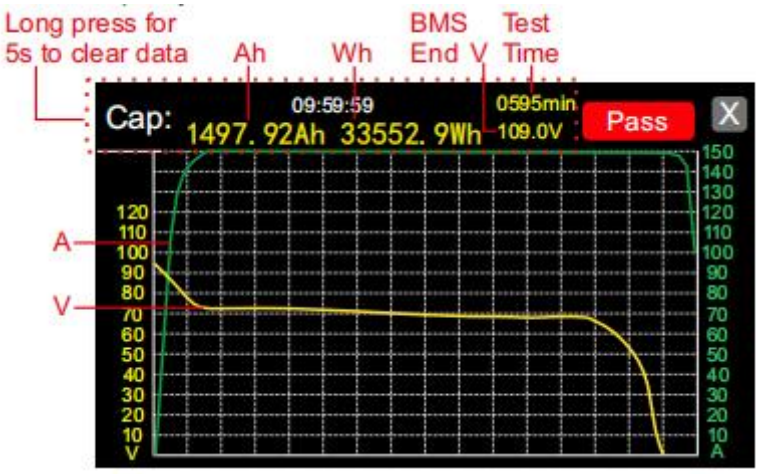
During operation, clicking on this area will allow you to switch to the result page shown in the following picture and view the real-time changes in the discharge curve.

When the discharge reaches the termination condition you have set, it will automatically stop and make a beeping sound. A pop-up window with the following test result page will appear, showing the capacity/energy/time/protect board cut-off voltage/voltage/current curves/whether the capacity

meets the standard.

Note: The accuracy of the protection board's shutdown voltage measurement is affected by various factors and may have some errors.

Whether the capacity meets the standard: The criterion is to compare the actual discharge capacity with the set capacity for calibration. If it is less than 5%, it is considered to meet the standard; otherwise, it indicates insufficient capacity.



Do not turn off the power immediately after the discharge is completed, as the cooling fan will delay operation for 2 minutes.

Matters need attention:

- The result data will only be available after the machine finishes running**.**
- Do not cut off the power during the operation of this machine; otherwise, the test data will not be saved.
- If the running time is less than 1 minutes, no data will be recorded. Data recording and overwriting of the previous data will only start after 1 minutes of running.
- During the operation of this machine, any operation must be performed by pressing the pause button first.
- It is prohibited to test batteries that do not have protective covers or have bulges and damages.
- There is high temperature at the air outlet on the back of the machine, and no objects are allowed within 2 meter.
- Do not test batteries with a voltage exceeding 120V. Do not connect them in reverse. Otherwise, the machine will be burned out and no warranty will be provided.
- The discharge cut-off voltage/current must be set correctly and reasonably in accordance with the battery specification sheet.
- Tests must be conducted in an open and supervised environment, and there must be no high-temperature, flammable, explosive or valuable items around.
- This product cannot be rented, transferred or given to a third party for use. Otherwise, the consequences will be borne by yourself and no after-sales service will be provided.
- Please use a well-grounded socket (otherwise, there may be a risk of leakage or slight induced electricity).

- This product is merely a tool. Under no circumstances will our company be liable for any direct or indirect losses beyond the price of this product.

7. Common troubleshooting methods

1: Why is the voltage and current displayed on this machine inconsistent with those on your multimeter? Reason 1: This machine is calibrated with a GW PCS-1000I six-and-a-half-digit high-precision voltmeter and ammeter at the factory. Moreover, it is regularly sampled and tested for accuracy by a national third-party authoritative institution every year. However, your multimeter may not be able to achieve this level of accuracy. Solution: Measure and compare with instruments of the same level as those in our factory. Reason 2: The voltage measurement points are inconsistent. Solution: If you are measuring voltage in the presence of current, you must measure the voltage sampling point of the fixture (the position of the thin line); otherwise, voltage inconsistency will occur due to voltage drop.
2: Why do fixtures or battery tabs burn out? Reason: The contact area between the fixture and the battery TAB is too small or there is severe poor contact. Solution: Increase the contact area to ensure good contact.
3: Why is there no result data? Reason: The test was not completed or it did not work for more than 2 minutes. Solution: Wait for the test to complete or fully charge the battery before conducting the test.
4: Why is the data deviation in the test results so serious? Reason 1: Battery capacity decline. Solution: It is recommended to phase out or repair the battery. Reason 2: The discharge parameters were set incorrectly. Solution: Set the parameters correctly and reasonably in accordance with the battery cell specification sheet. Reason 3: The error of this machine exceeds the nominal value. Solution: Return to the factory for calibration.
5: Why does the battery heat up severely during the testing process? Reason 1: The discharge current exceeds the battery's tolerance range. Solution: Set the parameters correctly and reasonably in accordance with the battery cell specification sheet. Reason 2: Excessive internal resistance or damage to the battery. Solution: It is recommended to phase out or repair the battery.
6: Why does the current fluctuate greatly during the testing process? Reason 1: The contact area between the fixture and the battery TAB is too small or the contact is poor and loose. Solution: Increase the contact area to ensure good contact. Reason 2: Poor battery performance (increased internal resistance or unstable fluctuations in internal resistance). Solution: It is recommended to phase out or repair the battery.

7: Why is the test process automatically interrupted?

Reason 1: The contact area between the fixture and the TAB is too small, resulting in excessive pressure drop or poor contact for the protection of this machine.

Solution: Increase the contact area between the fixture and the TAB and ensure good contact.

Reason 2: The set discharge current exceeds the battery's tolerance range, causing the device to be protected.

Solution: Reduce the discharge current and set it correctly and reasonably.

Reason 3: The increase or instability of the battery's internal resistance leads to the protection of this device.

Solution: It is recommended to phase out or repair the battery.

Reason 4: The fixture is not suitable for the battery tabs.

Solution: Replace with a suitable fixture.

8: Why was the power discharged so quickly?

Reason 1: Excessive discharge current causes the machine to stop working after being rapidly pulled to the set cut-off voltage.

Solution: Set the parameters correctly and reasonably.

Reason 2: The internal resistance of the battery has increased, approaching scrapping.

Solution: It is recommended to phase out or repair the battery.

Reason 3: The contact area between the fixture and the battery cell TAB is too small or the contact is poor.

Solution: Increase the contact area to ensure good contact.

9: Why does the voltage rise a few hours after the battery test is completed?

Reason 1: This is true for any battery. After it is completely discharged and left to stand for a period of time, the voltage will naturally rise.

Solution: Physical properties that cannot be changed.

Warranty Regulations

Warranty service period is 1 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.