HT-DC50ABP
Battery Capacity Tester
(Discharge)
User Manual

1. Product Introduction

The HT-DC50ABP battery pack discharge capacity tester is suitable for batteries or battery packs within 5-120V. It is usually used by electric vehicle dealers and battery manufacturers to test the performance of batteries and has the functions of constant voltage discharge, timed discharge and constant capacity discharge. It can accurately collect battery voltage signals in real time and perform data storage and operation processing. It features high precision, strong timeliness, simple operation and practical reliability.

2. Product Features

① Automatically collect the voltage of the battery for analysis to meet diverse testing requirements.
② The current is adjustable, and the peak discharge current can reach 50A.
③ Battery reverse connection/over-voltage/over-current/battery high temperature/internal high temperature protection to ensure the safety of the battery and the equipment.
④ Simplified operation interface, real-time display of voltage, capacity, current, etc., supporting both Chinese and English languages.

3. Product Main Parameters

Model	HT-DC50ABP
Scope of application	Batteries within 5-120V
Discharge parameters	5-120V adjustable (step 0.1V),1-50A adjustable (step 0.1A) The maximum discharge current is 20A within 5-10V and 50A within 10-120V. The maximum discharge power is 6000W
Working mode	Constant voltage discharge/Timed discharge/constant capacity discharge
Communication	/
Protective function	Over-voltage/Reverse connection/over-current/battery high temperature/Internal high temperature alarm and protection
Calibration equipment	Voltage standard: Fluke 8845A Current standard: GW PCS-1000I
Error range	Voltage:±0.1%,current:±0.2%,(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 50/60HZ

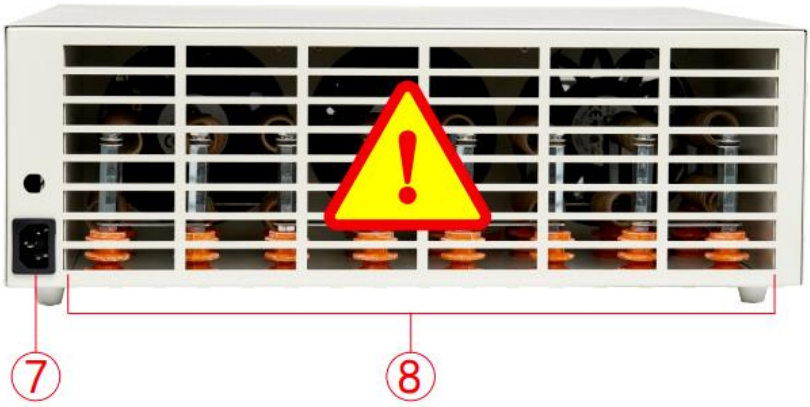
Working environment/ matters needing attention	This machine uses high-power internal resistors to dissipate energy and generates significant heat. Ensure good heat dissipation and do not block the vents,dissipation and have someone on duty. The temperature at the back air outlet can reach up to 90℃. Therefore, no flammable, explosive or valuable items are allowed within 1 meter around this machine.
Size/weight	Wide:380 high:158 long: 445mm, Net weight:8.7Kg

Product application scope

It is suitable for various electric vehicle dealers and battery manufacturers to test the performance of batteries, such as electric vehicle batteries, tricycle batteries, sightseeing vehicle batteries, notebook batteries, radios and other small and medium-sized electronic product batteries or battery packs.

4. Product Appearance





① Power switch: Do not cut off the power during the testing process; otherwise, the test data cannot be saved

② Rotary encoder: Rotate to switch working modes and press to set parameters

③ Start/Stop button: In the running state, any operation must be paused first

④ External battery temperature probe interface (optional temperature sensing head)

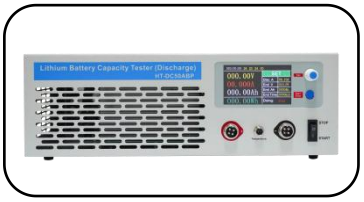
⑤ Connect the positive terminal of the battery (pin definition: Pins 1, 2, and 3 are connected in parallel for main current, and pin 4 is the fine voltage detection wire)

⑥ Battery negative terminal connection (Pin definition: Pins 1, 2, and 3 are connected in parallel for main current, and pin 4 is the fine voltage detection wire)

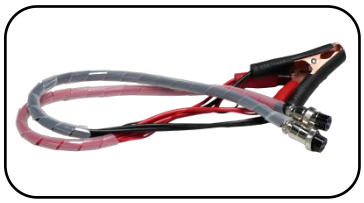
⑦ AC110-220V power socket

⑧ Air outlet. The maximum temperature in this area can reach 90℃. No items should be placed within 1 meter to prevent burns

5. Product List



Tester



Testing Clip



Power Cord



Manual Instruction

6. Basic Operation Instructions

1.First, turn on the machine, then clamp the battery. Press the Settings knob to enter the quick Settings or custom Settings page. After setting, return to this page and all the parameters you have set will be displayed. Carefully check for errors and then press the start-stop button to start discharging.



2. For beginners, you can also use the quick setting. Rotate the knob left or right to adjust the parameters, and press to confirm. The system calculation is based on our experience (refer to the table on page 2). This is only a reference suggestion and may not be comprehensive or accurate for all battery types. You need to confirm the settings 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 select Custom Settings, you will enter this page, where you can set the discharge mode as needed.

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

Cut-off voltage: 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.

Cut-off capacity: 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 discharging.

Cut-off 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.

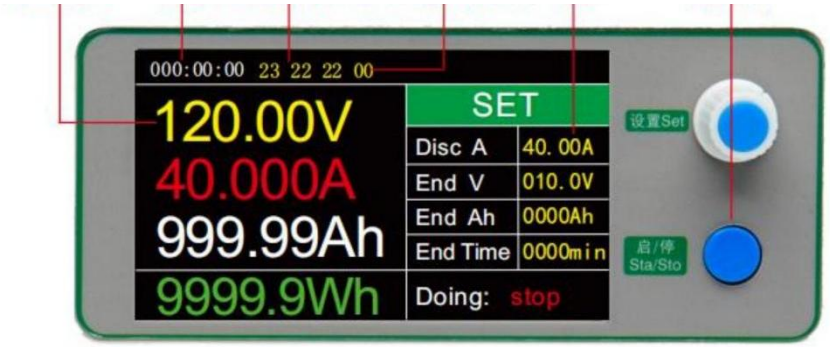
Voltage recording: If the turn-off voltage of the battery pack protection board is higher than the cut-off voltage/cut-off capacity/cut-off time you set, this voltage will be automatically written into the cut-off voltage column for the convenience of the next test. You can also turn off this function.

Usage Help: This page shows some common battery cell parameters and can help you quickly set various parameters.

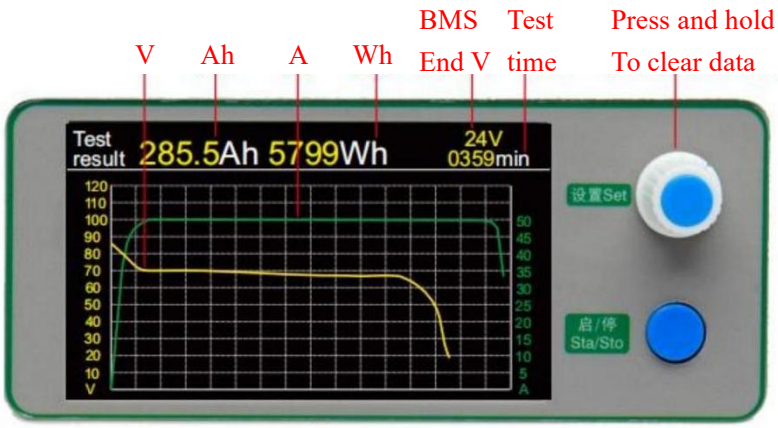


4.After setting the above parameters, select "Save" to return to the main page. On the main page, you can see battery voltage/running time/internal temperature/current setting parameters. After confirming that there are no errors, press the start/stop button to start discharging. If you need to pause during the process, you can press the start/stop button again (but do not turn off the machine). If there is no operation within 3 minutes, the display screen will automatically reduce its brightness. Any button can be pressed to wake it up.

Real time Battery V	Run time	3 internal temperature	Battery temperature	Now set	Start/stop button



5.When the discharge reaches the termination condition you set, it will automatically stop and emit a beeping sound, and a test result page will pop up, displaying capacity/battery level/time/protection board turn-off voltage/voltage-current curve.



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

Important Notes:

➢Test data will only be available after the machine finishes running. Do not cut off the power during operation; otherwise, the test data will not be saved

➢If the running time is less than 2 minutes, no data will be recorded. Data recording will only start after 2 minutes of operation (overwriting the previous data).

During operation, any function must be paused first.

Do not test bulging or damaged batteries.

There is a high temperature at the air outlet on the back of the machine. Do not place any items within 1 meter.

Do not test batteries with a voltage exceeding 120V. Do not connect them in reverse; otherwise, the machine will be damaged and the warranty will be void.

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. Keep away from high-temperature, flammable, explosive, or valuable items.

This product is for the original purchaser only and cannot be rented, loaned, or transferred to third parties. Failure to comply will void any warranty.

Please use a well-grounded socket to avoid the risk of leakage or induced electricity.

This product is a testing tool. Under no circumstances will our company be liable for any direct or indirect losses exceeding the purchase 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 voltage drop or poor contact, triggering the device's protection mechanism. 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 end-of-life. 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.