BA101 Pro




24V/12V

- 24V/12V Lead-acid Battery Test
- 24V/12V Cranking System Test
- 24V/12V Charging System Test
- Graphical Operating System

# BATTERY TESTER

## 1. PRODUCT DESCRIPTION

### 1.1 Product Introduction

The battery tester adopts the world's most advanced conductance test technology, which can conveniently, quickly and accurately measure the cold cranking amps and battery health of the vehicle battery without damaging the battery performance.

### 1.2 Function Description

- Test the 24V/12V lead-acid battery CCA (cold cranking amps) /internal resistance/voltage/state of charge/state of health.
- Test the 24V/12V vehicle cranking system and charging system.
- One-key quick test function for batch battery continuous test or real-time voltage curve.
- Real-time voltage curve graphic display, can be saved up to 120 seconds and played back.
- Can save up to 1400 historical test records, including battery test, cranking test, charging test, voltage curve, 350 records each.
- Built-in protection of short circuit and reverse connection.
- Can print the battery test, cranking test and charging test data by connecting it to the computer via USB.
- View voltage and CCA data of car, truck(24V) and truck(12V) in the form of waveform.
- Support 13 languages, including English, French, Dutch, German, Spanish, Italian, Chinese, Japanese, Korean, Russian, Portuguese, Polish and Finnish.

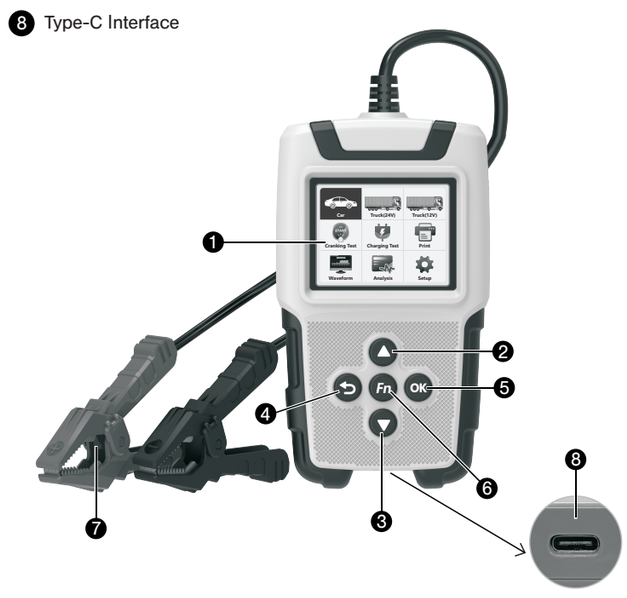
### 1.3 Technical Specifications

- Input Voltage Range: 5V~32V DC
- Tester Working Temperature: -10°C~60°C (14°F~140°F)
- Storage Temperature: -20°C~70°C (-4°F~158°F)
- Display: 2.8" TFT color screen
- Dimensions: (L) 160 x (W) 91 x (H) 32 mm



### 1.4 Product Information

1 Display 2 Up Key
3 Down Key 4 Back Key 5 OK Key
6 Fn key - Battery test or voltage waveform test function can be set.
7 Red/Black Clamps:
Connect the red clamp to the positive terminal (+) of the battery.
Connect the black clamp to the negative terminal (-) of the battery.
It is very important to clamp directly to the original battery terminals. Test results may be inaccurate if clamped elsewhere.
8 Type-C Interface






### 1.5 Technical Parameters

Car, Truck Battery Cold Cranking Amps Measure Range

| Battery Standard | Description | Measure Range |
|---|---|---|
| CCA | Cold Cranking Amps | Car/Truck 100 ~ 2000 |
| IEC | Internal Electro Technical Commission Standard | Car/Truck 100 ~ 1400 |
| EN | European Automobile Industry Association Standard | Car/Truck 100 ~ 2000 |
| SAE | Society of Automotive Engineers Standard | Car/Truck 100 ~ 2000 |
| DIN | German Auto Industry Committee Standard | Car/Truck 100 ~ 1400 |
| CA | Cranking Amps Standard | Car/Truck 100 ~ 2000 |
| MCA | Marine Cranking Amps Standard | Car/Truck 100 ~ 2000 |
| BCI | Battery Council International Standard | Car/Truck 100 ~ 2000 |
| GB | China National Standard | Car/Truck 30 ~ 220Ah |
| JIS | Japan Industrial Standard | Car/Truck 26A17-245H52 |



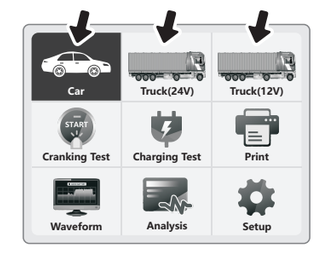
## 2. BATTERY TEST

- Test the cold cranking amps (CCA) of the battery, and compare it with the rated CCA value to judge whether the battery is good or bad.

### 2.1 Select Battery Application

- Press the " ▲ " or " ▼ " key to select the battery application Car, Truck(24V) or Truck(12V) .

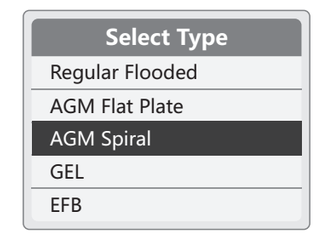
Note: No need to select the battery voltage, the battery tester can automatically judge whether the battery is 12V or 24V, just need to choose the application of the battery: car, truck(24V) or truck(12V).




### 2.2 Select Battery Type

- Press the " ▲ " or " ▼ " key to select battery type.

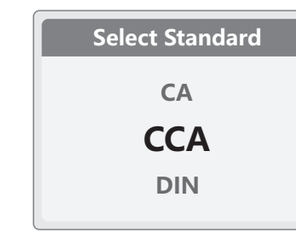
Note: AGM, GEL, and EFB batteries will all have obvious markings on the battery.






### 2.3 Select Battery Standard

- Press the " ▲ " or " ▼ " key to select the correct battery standard (specified on the battery label), then press " **OK** " key to continue.

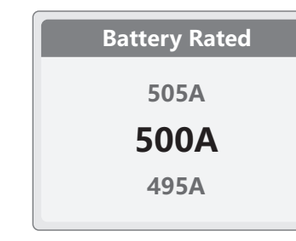



- As shown on the right, the label pointed by the arrow indicates the standard and rated CCA value of the battery.
- The battery tester supports the following battery standards: CCA, DIN, JIS, EN, IEC, GB, SAE, MCA, BCI, CA.




### 2.4 Enter Rated CCA Value of the Battery

- Press the " ▲ " or " ▼ " key to select the battery rated CCA value.
- Press the "**OK** " key to start the battery test.






### 2.5 Battery Test Result

Battery test result includes 5 types as following.

**(1) GOOD BATTERY**

- The battery is without any problem.
- SoH means state of health.
- SoC means state of charge.

**(2) GOOD - RECHARGE**

- Good battery but low power, recharge before using.

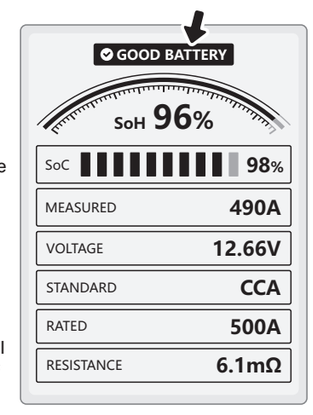
**(3) REPLACE**

- The battery is near to or already reached the end of the using life, replace battery.

Note: Due to vehicle conditions, temperature, etc., the battery may still be able to start the engine, but it may not work at any time, and it is recommended to replace it.

**(4) CHARGE - RETEST**

- Low power leads to inaccurate results, please test again after charging.




**(5) BAD CELL**

- There has been bad cell problem inside the battery and needs to be replaced.

Note: The inside of the 12V lead-acid battery is composed of 6 cells of 2V units in series, and the bad cell is that at least one cell has been short-circuited and damaged.

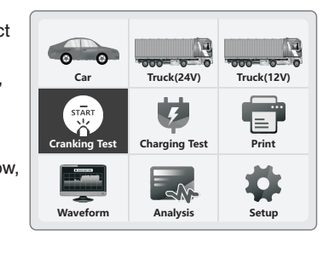


## 3. CRANKING TEST

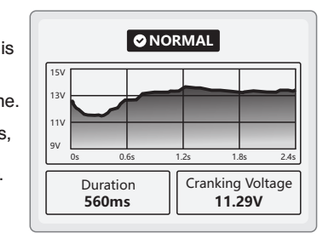
- Press the " ▲ " or " ▼ " key to select the Cranking Test.

Note: Before selecting cranking test, the engine should be off.

- The cranking test is used to test the start-up system of the vehicle. If it shows that the cranking voltage is low, it may be a battery problem or other vehicle problems.

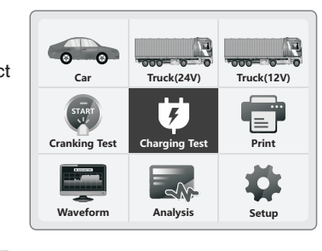



- Choose whether the battery voltage is 12V or 24V.
- Follow the prompts to start the engine.
- The tester will display the test results, which are the start-up duration, start-up status, and start-up voltage.




## 4. CHARGING TEST

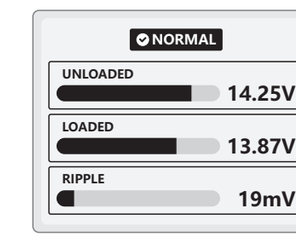
- Press the " ▲ " or " ▼ " key to select the Charging Test.
- The charging test is used to test the vehicle's alternator and charging system.






- Then choose whether the battery voltage is 12V or 24V.
- Follow the on-screen guidance to do the unloaded test, loaded test and ripple test.
- Do not turn off the engine during the test.
- The tester will display test results, which are charging status, unloaded voltage, loaded voltage, ripple voltage.
- If the voltage is outside the normal range, the tester reports an error.

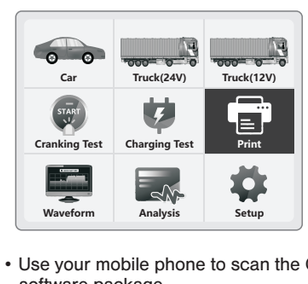
Note: "NO OUTPUT" means that the charging system has no output. When the battery power is exhausted, the vehicle will stop working. Check the alternator immediately or contact a service center.

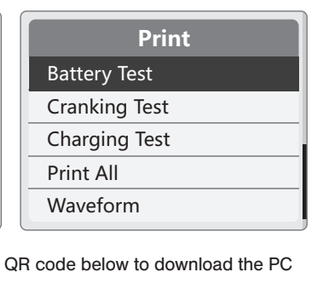





## 5. PRINT

- Press the " ▲ " or " ▼ " key to select the Print.
- Connected to a computer via USB, it can print three kinds of test data: battery test, cranking test and charging test.
- Select the type of test the user wants to print, including a battery test, cranking test, or charging test. In addition, waveform graphs can be reviewed by select Waveform.



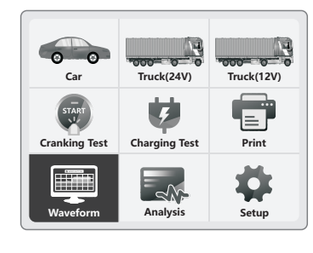

- Use your mobile phone to scan the QR code below to download the PC software package.

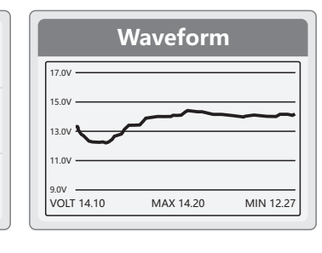
https://link.dh5z.com/printCom.html



## 6. WAVEFORM

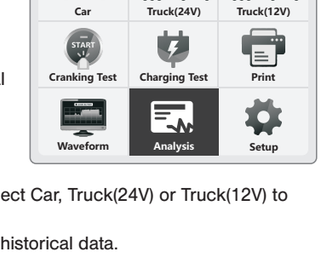
- Press the " ▲ " or " ▼ " key to select the Waveform.
- The tester will display real-time voltage curve.
- The voltage curve can be saved for up to 120 seconds.




## 7. ANALYSIS

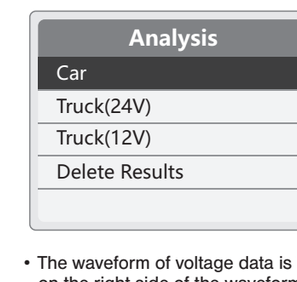
- Press the " ▲ " or " ▼ " key to select the Analysis.
- Analysis is the viewing of historical test data as a waveform graph. Up to 350 records can be saved for each type of data.

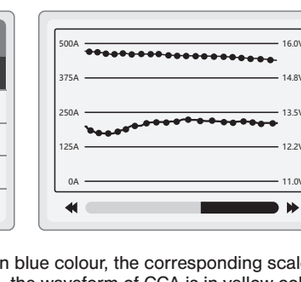



- Press the " ▲ " or " ▼ " key to select Car, Truck(24V) or Truck(12V) to review historical data.

Select Delete Results to delete all historical data.






- The waveform of voltage data is in blue colour, the corresponding scale is on the right side of the waveform, the waveform of CCA is in yellow colour, the corresponding scale is on the left side.
- The points on the CCA waveform have two colours, red means bad battery or need to be replaced, green means good battery.
- Press the up and down keys to pan the waveform.

## 8. SETUP

- Press the " ▲ " or " ▼ " key to select the Setup.

Fn

- Can set the shortcut key " ***Fn*** " to battery test or voltage waveform function.

Language

- Press the " ▲ " or " ▼ " key to select Language.

Beep

- The status of the buzzer can be set to ON or OFF.

Brightness

- Press the " ▲ " or " ▼ " key to select and set Brightness.

About

- Press the " ▲ " or " ▼ " key to select About.