



12V 100-2000CCA **Digital Battery Analyser** 0 2118

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1. SAFETY NOTE

1.1 SAFETY INFORMATION

For your own safety and the safety of others, and to prevent damage to the equipment and vehicles, read this manual thoroughly before operating your battery tester.

The safety messages presented below and throughout this user's manual are reminders to the operator to exercise extreme care when using this device.

Always refer to and follow safety messages and test procedures provided by vehicle manufacturer Read, understand and follow all safety messages and instructions in this manual.

1.2 IMPORTANT SAFETY INSTRUCTIONS

WARNING

 Do not smoke, strike a match, or cause a spark near the vehicle while testing and keep all sparks, heated items and open flames away from the battery and fuel / fuel vapours as they are highly flammable.

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The device should not be used again when abnormal phenomena occur during the test. If smoke, peculiar smell or abnormal noise occurs. stop using it immediately and contact the supplier. Use under abnormal conditions may cause accidents, fires, etc.

- Prevent engine oil, gasoline, antifreeze and electrolyte from contacting this product, which may cause surface deterioration of this product.
- If the skin of the cable is damaged, it may cause a short circuit, so stop using it immediately and send it for repair.
- After the test, please remove the alligator pliers from the battery terminal, otherwise it may cause the product to malfunction or damage the battery.
- · Do not use alcohol-based liquids to wipe the product, as it may crack.
- Do not allow engine oil to adhere to the metal. parts of the alligator pliers, which may cause poor contact.

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2. PRODUCT DESCRIPTION

2.1 PRODUCT INTRODUCTION

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

It has the ability to quickly detect the car common faults of cranking system and charging system.

2.2 FUNCTION DESCRIPTION

- · Test the battery CCA and the state of health.
- · Quickly input battery Ah value to test batteries in batches
- · Test cranking system and charging system of vehicles.
- · Record test result and review.
- · Built-in protection of short circuit and reverse connection.
- · Support English, German, Spanish, French, Polish and Italian etc.

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Main Menu

2. Battery In Vehicle 3. Out Of Vehicle

Quick Test

4. Voltmeter

2.3 TECHNICAL PARAMETERS

4.4 VOLTMETER ------

Cold Cranking Amps Measure Range

4.5 REVIEW DATA ------ 29

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

- Input Voltage Range: 8V ~ 30V
- Tester Working Temperature: -10°C to 60°C (14°F to 140°F)
- Storage Temperature: -20°C to 70°C(-4°F to 158°F)
- Dimensions: (L)122 x (W)78 x (H)22 mm

2.5 PRODUCT INFORMATION

- (1) LCD display (2) Enter button
- (3) Back button (4) Up button (5) Down button
- (6) Alligator clamps (red & black) Connect the red clamp to the positive pole and the black clamp to the negative pole



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3. BATTERY TESTER SETUP

3.1 TESTER SETUR System setup

From main menu, select the system setup.and press ENTER

button

3.1.1 LANGUAGE

- From system setup menu, use ENTER button to select Language.
- Use UP and DOWN button to select the desired language and press ENTER button to save your selection and return to previous menu.

System Setup 1. Language 3. Tool Information

Language FrangaisDeutsch 4. Espanol 5. Italiano 6. Polski

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3.1.2 CONTRAST

- From System Setup menu, use ENTER button to
- Use UP and DOWN button to select the contrast value and press ENTER button to save your selection setting and return to previous menu.





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3.1.3 TOOL INFORMATION

• From System Setup menu, use ENTER button to

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· Press exit to return the previous menu.

System Setup 1. Language 2. Contrast 3. Tool Information

Tool Information

4. BATTERY TESTER OPERATION

4.1 Quick Test

It can make sure the battery status, including voltage, CCA, electronic resistance, rated CCA charging value, healthy value and testing result in one second. Once input the AH value—battery rated capacity, which is marked in the label of the battery

 Press UP/DOWN button to select the Quick test, then press ENTER button

1. Quick Test Battery In Vehicle
Out Of Vehicle Voltmeter
Review Data
System Setup

Main Menu

 Input the rated battery capacity –xx AH, in general the battery capacity for 12V vehicle is above 30AH

Input Ah Value 30AH

Please input the A-HR value in the Label of the battery.

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• Then press ENTER button, the testing result will show one of these, as below

Battery test includes five results as following.

(1) GOOD BATTERY

 The battery is without any problem, please be relaxed to use.

Health: 96% 490CCA Charge: 98% 12.64V Internal R=6.1m Ω Rated: 500A GOOD BATTERY

(2) GOOD, RECHARGE

power, recharge before using.

Health: 78% Charge: 30% 12.20V · Good battery but low Internal R=7.2mΩ Rated: 500A GOOD, RECHARGE

(3) REPLACE

 The battery is near to or already reached the end of the using life, replace battery, otherwise, bigger danger will be followed. Charge: 80% 12.6 Internal R=18.1 m Ω 12.68V Rated: 500A REPLACE

(4) BAD CELL, REPLACE Battery interior

damaged, bad cell or short circuit, replace battery

Charge: 20% 10.6 Internal R=45.2mΩ 10.64V Rated: 500A BAD CELL, REPLACE

Health: 0%

(5) CHARGE-RETEST

· Unstable battery shall be recharged and retested to avoid error. If same test result appears after recharge and retest, the battery is regarded as damaged, replace the battery.

Health: 39% 310CCA Charge: 20% 12.0 Internal R=30.01mΩ Rated: 500A CHARGE-RETEST

4.2 BATTERY TEST IN VEHICLE

Choose the battery in vehicle and press ENTER button, then it will enter the below menu. Battery in vehicle means battery is connected with vehicle generator or vehicle electrical appliance.

4.2.1 BATTERYTEST

Choose the battery test and press ENTER button, then it will enter the below menu.

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Test in Vehicle 1. Battery Test 2. Cranking Test 3.Charging Test

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Select Battery Type

After the battery charge status selected, tester will prompt to select battery type, Regular Flooded, AGM Flat Plate or AGM Spiral, Gel and EFB battery. Press UP/DOWN button to select battery type, then press ENTER button to



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Battery System Standard and Rating

- · Battery tester will test each battery according to the selected system and rating.
- the actual system standard and rating marked on the battery.
- See in the below picture, the arrow indicated



CCA: Cold Cranking Amps, specified by SAE&BCI, most frequently used value for starting battery at 0°F (-18°C).

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Use UP/DOWN button to select according to

CA: Cranking Amps Standard, effective starting current value at 0°C. MCA: Marine Cranking Amps Standard, effective

BCI: Battery Council International Standard.

starting current value at 0°C.

JIS: Japan Industrial Standard, displayed on the battery as combination of the numbers and letters, e.g. 55D23,80D26.

DIN: German Auto Industry Committee Standard.

IEC: Internal Electro Technical Commission Standard

EN: European Automobile Industry Association Standard.

SAE: Society of Automotive Engineers Standard. GB: China National Standard.



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• Input correct test rating, press ENTER button.

Setting Rate 500A CCA

Tester starts to test, and dynamic interface "TESTING" prompted.

Note: It takes around 5 seconds to display the battery test result.

BATTERY TEST RESULT

Battery test includes five results as following.

(1) GOOD BATTERY

The battery is without any problem, please be relaxed to use.

Health: 96% 490CCA Charge: 98% 12.64V Internal R=6.1m Ω Rated: 500A GOOD BATTERY

(2) GOOD, RECHARGE

Good battery but low power, recharge before using.

Health: 78% 44 Charge: 30% 12 Internal R=7.2mΩ 440CCA 12.20V Rated: 500A GOOD, RECHARGE

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(3) REPLACE

 The battery is near to or already reached the end of the using life, replace battery, otherwise, bigger danger will be followed

Health: 46% 490CCA Charge: 80% 12.68V Internal R=18.1mΩ Rated: 500A REPLACE

(4) BAD CELL, REPLACE

Battery interior damaged, bad cell or short circuit, replace battery.

Health: 0% 0CC Charge: 20% 10.6 Internal R=45.2mΩ Bated: 500A BAD CELL. REPLACE

(5) CHARGE-RETEST

 Unstable battery shall be recharged and retested to avoid error If same test result appears after recharge and retest, the battery is regarded as damaged, replace the battery.

 $\begin{array}{lll} \mbox{Health: 39\%} & \mbox{310CCA} \\ \mbox{Charge: 20\%} & \mbox{12.08V} \\ \mbox{Internal R=30.01m} \mbox{\Omega} \end{array}$ Rated: 500A CHARGE-RETEST

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4.2.2 CRANKING TEST

Choose the Cranking test and press ENTER button, then it will enter the below menu.



Starting the engine as prompted, tester will automatically complete the cranking test and display the result.



Cranking Test RPM Detected

- Test result of the tester includes actual cranking voltage and actual cranking time.
- Normally a cranking voltage value lower than 9.6V is regarded as abnormal.

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Cranking Test 780ms Cranking Normal

This is for the convenience of the maintenance personnel to quickly know the whole state of the starting system according to the data

10.13V

After testing finished, do not shut down the engine, press ENTER button to enter Charging Test.

4.2.3 CHARGING TEST

Choose the Charging test and press ENTER button, then it will enter the below menu.



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Note: Do not shut down the engine during the test. Follow the steps according to the on screen instructions.

Ripple Test

Turn off headlights and air conditioner, keep 10 seconds.

Press ENTER continue

Unloaded Test

Turn off all devices. increase RPM to 2500-3000r/min and keep 10 seconds Press ENTER continue

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Loaded Test

Turn on headlights and air conditioner to the maximum, keep RPM idle for 10 seconds Press ENTER continue

· After the test has finished, the tester displays the loaded and unloaded charging voltages, ripple voltage and charging test result.



Note: "NO OUTPUT" means Charging system is no output. The vehicle will stop working when the battery is exhausted. Please check the alternator or contact the maintenance service center immediately.

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4.3 BATTERY OUT OF VEHICLE TEST

OUT-OF-VEHICLE means battery is not connected with any of the vehicle loaded battery connection is cut off. Choose the battery out of vehicle test.



Select Battery Type

 After the battery charge status selected, tester will prompt to select battery type, Regular Flooded, AGM Flat Plate or AGM Spiral, Gel and EFB battery. Press UP/DOWN button to select battery type, then press ENTER button to confirm



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Battery System Standard and Rating Battery tester will test each battery according

- to the selected system and rating.
- Use UP/DOWN button to select according to the actual system standard and rating marked on the battery.



500A CCA

Tester starts to test, and dynamic interface "TESTING" prompted.

Note: It takes around 5 seconds to display the battery test result.

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BATTERY TEST RESULT

Battery test includes five results as following

(1) GOOD BATTERY

 The battery is without any problem, please be relaxed to use.

Health: 96 % 490CCA Charge: 98% 12.64V Internal R=6.1m Ω Rated: 500A GOOD BATTERY

(2) GOOD, RECHARGE

 Good battery but low power, recharge before using.

Health: 78% Charge: 30% 12. Internal R=7.2mΩ Rated: 500A 12.20V GOOD, RECHARGE

(3) REPLACE

• The battery is near to or already reached the end of the using life, replace battery, otherwise, bigger danger will be followed

Health: 46% 490CCA Charge: 80% 12.68V Internal R=18.1mΩ Rated: 500A REPLACE

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· 23 ·

· Battery interior damaged, bad cell or short circuit, replace battery.

(4) BAD CELL, REPLACE

 $\begin{array}{ll} \text{Health: 0\%} & \text{OCCA} \\ \text{Charge: 20\%} & \text{10.64V} \\ \text{Internal R=45.2m} \Omega \end{array}$ Rated: 500A BAD CELL REPLACE

(5) CHARGE-RETEST

 Unstable battery shall be recharged and retested to avoid error. If same test result appears after recharge and retest, the battery is regarded as damaged, replace the battery.

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Charge: 20% 12.08V Internal R=30.01mΩ Rated: 500A CHARGE-RETEST

4.4 VOLTMETER

· Choose the Voltmeter and press ENTER button , then it will enter the below menu

Main Menu
1. Quick Test
2. Battery In Vehicle
3. Out Of Vehicle
4. Voltmeter
Review Data
6. System Setup

 Display real-time voltage value



· Choose the function of review data to review



· Check the history of battery testing result

Health: 96% 490CCA Charge: 98% 12.64V Internal R=6.1m Ω Rated: 500A GOOD, RECHARGE

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