BT600 Plus

Battery Analyzer

USER MANUAL

TOPDON®

CONTENTS

SAFETY IS ALWAYS THE FIRST PRIORITY!

⚠ READ THE INSTRUCTIONS BEFORE USING

For your safety and the safety of others, as well as to avoid any damage to the product and your vehicle, carefully read and make sure you fully understand this manual's safety instructions in its entirety. You must read the vehicle's service manual, the battery manufacturer's specific safeguards, and observe the stated precautions or instructions before and during any test or service procedure.

ONLY OPERATE TESTS IN A WELL-VENTILATED AREA since the vehicle produces carbon monoxide (a toxic, poisonous gas, and particulate matter) when the engine is running.

ALWAYS WEAR APPROVED SAFETY EYE PROTECTION to prevent damage from sharp objects and caustic liquids.

ALWAYS BE AWARE OF MOVING PARTS (such as coolant fans, pulleys, belts) since they spin or turn at high speeds when the engine is running.

DO NOT TOUCH HOT ENGINE PARTS to prevent severe burns. The motor parts can get extremely hot when the engine is running.

TURN THE IGNITION OFF BEFORE CONNECTING OR DISCONNECTING THE TOOL FROM THE BATTERY to prevent damage to the device or the vehicle's electronic components.

DON'T SMOKE NEAR THE VEHICLE when testing. Fuel and battery vapors are highly flammable.

DO NOT WEAR LOOSE CLOTHING OR JEWELRY WHEN WORKING ON AN ENGINE. Loose clothing can easily be caught in the engine's fan, pulleys, belts, etc., and jewelry is highly conductive, which may cause severe burn or electric shock if it contacts electricity.

DO NOT CUT THE PRODUCTS CORDS OR SUBMERGE THEM IN WATER. The product is an electrical device that can cause shock and severe burns.

WARNING: Battery acid is extremely corrosive. If acid gets into your eyes, RINSE THEM THOROUGHLY WITH COLD RUNNING WATER FOR AT LEAST 20 MINUTES AND SEEK MEDICAL ATTENTION IMMEDIATELY.
If battery acid contacts your skin or clothing, WASH IT IMMEDIATELY WITH A SOLUTION OF WATER AND BAKING SODA.

MULTILINGUAL USER MANUAL

To download the multilingual user manual, please go to www.topdon.com/products/BT600-Plus and enter the Download page. Alternatively, you can scan the QR code below.

SECTION 1 WHAT'S IN THE BOX?

BT600 Plus

Test Cable with Clamps x 2

USB Cable (USB-A to USB-C)

Four-in-one Charger

5 Rolls of Printer Paper

Carrying Bag

User Manual

Quick User Guide

SECTION 2
PRODUCT OVERVIEW

Hardware Overview

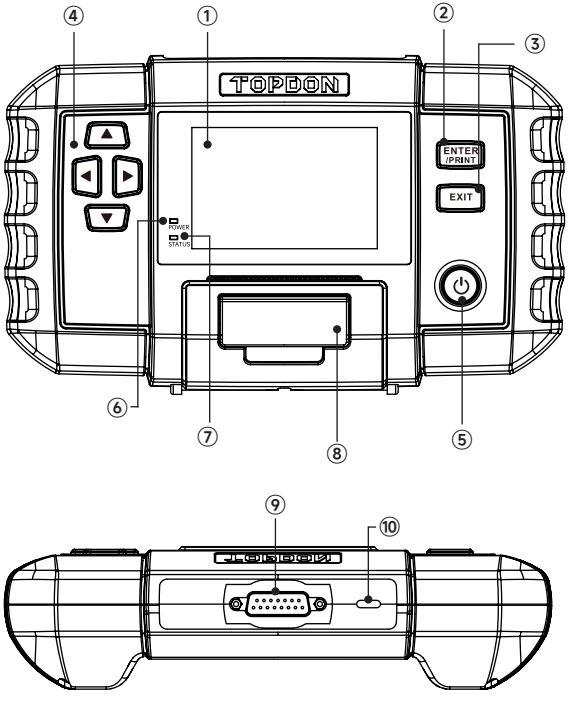
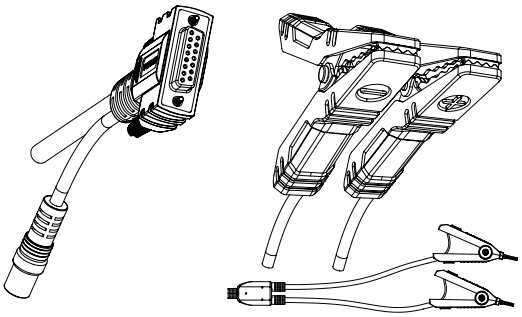


Figure 2.1.1

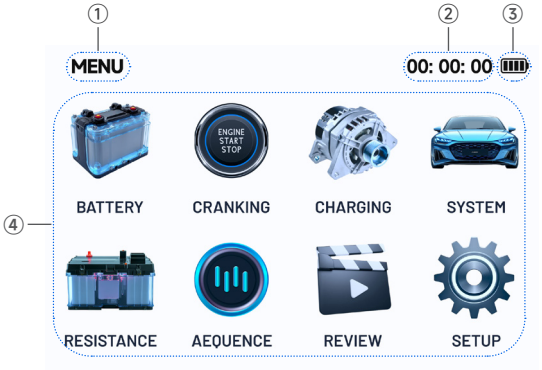
Item	Name	Description
①	**Display**	3.5 inches
②	**ENTER/PRINT**	Press the button to confirm an option or message, or to print the test results.
③	**EXIT**	Press the button to go back to the previous page.
④	**Arrow Keys**	Press the four buttons to move the cursor in the desired direction on the screen.
⑤	**Power Button**	Long press to turn on or off the analyzer. Short press to go back to the home screen.
⑥	**Red LED Indicator**	Illuminated when the device is powered on.
⑦	**Green LED Indicator**	Blinking during printing.
⑧	**Compartment for Printer Paper**	Intended to hold a roll of print paper.
⑨	**DB15 Male Connector**	Designed to connect to the tested battery using the test cable with clamps.
⑩	**USB-C Port**	Used for charging and update.



DB15 Female Connector Test Clamps (2 sets)

Figure 2.1.2

Interface Overview



Item	Description
①	**Interface name**
②	**Current time**
③	**Battery status** (It flashes white while charging, red with a low battery icon at low power, red with a full battery icon at high temperature, and blue with a full battery icon at low temperature.)
④	**Function and message area**

SECTION 3 GETTING STARTED

Note:
Make sure the device is adequately charged before use. It is recommended to charge via the USB-C port using the supplied adapter.

Where is the battery of a car located?

Let's take the following picture as a reference:

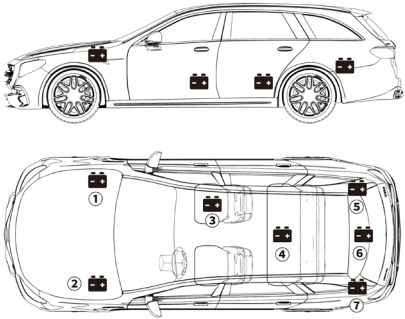


Figure 3.1.1

1) Most models hold the battery in the engine bay, under the hood, in one of the front corners. See battery location ① and ② in Figure 3.1.1.
2) To balance uneven weight distribution, some manufacturers hold the engine in the trunk. See battery location ⑤ , ⑥ , and ⑦ in Figure 3.1.1. In this case, the battery may have a plastic cover that should be removed prior to any testing.
3) For some models, the battery might be stored underneath the rear seat. See battery location ④ in Figure 3.1.1.
4) For other vehicles, the battery can be located underneath the front passenger seat. See battery location ③ in Figure 3.1.1.

WARNING:
DO NOT TEST THROUGH THE JUMPSTART POSTS. For models that hold the battery under the seat or in the trunk, the manufacturer usually includes jumpstart connector conductor posts under the hood (see Figure 3.1.2) to make jumpstarting easier. However, to ensure data accuracy and operation safety, DO NOT CONNECT THE BATTERY ANALYZER TO THE JUMPSTART POSTS.

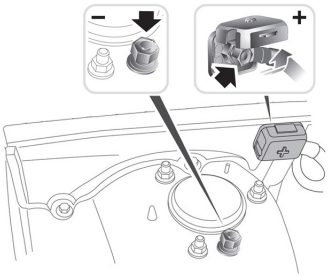


Figure 3.1.2

How to Identify What Type of Battery You Have?

Let's take the following picture as an example:

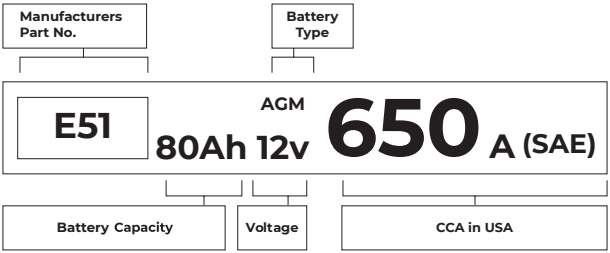


Figure 3.2.1

1) Battery Capacity: 80Ah

Battery Capacity is defined as the total amount of electricity generated in the battery in a certain time, and is measured in ampere hours (Ah).

2) Battery Type: AGM

Please refer to this list to check the most commonly seen lead-acid battery types for your reference.

Name	Description
Flooded Lead Acid Battery (Wet):	This is the oldest/most common car battery type, also known as "SLI battery." The Flooded Battery is usually made of 6 cells with a liquid electrolyte solution of sulfuric acid and water that needs to be topped off periodically. This battery typically supplies a voltage of 12.6V at full charge.
Enhanced Flooded Battery (EFB):	This battery type also uses a liquid electrolyte solution. However, but unlike the Wet Flooded Lead Acid battery, it is sealed and maintenance-free. The Enhanced Flooded, usually seen in cars with simple start-stop technology, can provide up to 85,000 engine cranks.
Gel Cell Battery (Gel) & VRLA Battery:	Gel batteries are similar to flooded batteries, but instead of antimony, calcium is used in the lead plates. Additionally, silica is added to the electrolyte solution, transforming the liquid into a gel.
Absorbent Glass Mat Battery (AGM):	AGM batteries are designed to deliver powerful bursts of starting amps and run for a long time. "Absorbed Glass Mats" are used to cushion the ultra-thin lead plates, allowing manufacturers to include more leads into one battery and provide more power. AGM batteries are divided into two categories according to the cell structure. They can be AGM FLAT PLATE and AGM SPIRAL. This type of battery is ideal for vehicles with automatic start-stop applications and braking energy recovery.

3) Voltage: 12V

When fully charged, automotive batteries should measure at 12.6 volts. However, this measurement should be from 13.7 to 14.7 when the engine is running. If the battery analyzer reads less than this standard, it means that the battery's resting voltage is weak. In this case, typically, the battery needs to be charged or replaced.

4) CCA: 650A (SAE)

The CCA rating refers to how many amps a 12-volt battery can deliver at 0°F in 30 seconds while maintaining at least a 7.2V voltage. This means that the higher the CCA rating is, the easier the engine can be cranked in cold temperatures.

Preparation before Connection

1. Inspect the battery analyzer for any visible damage. Do not use the device if it is damaged.
2. Check the test cable and clamps for any signs of wear or damage. Only use cables and clamps that are in good condition.
3. Securely connect the test cable to the device and tighten the bolts properly.

Note:
Choose the appropriate clamps based on the size of the battery. Both of the two sets of clamps supplied are suitable for testing batteries.

Connect the Clamps to the Battery Terminals (See Figure 3.3.1)

1) Before connecting the clamps to the terminals, please use sandpaper to polish off the corrosion on the battery terminals. With this, you can avoid inaccurate test values.
2) Attach the red clamp to the positive (+) terminal, and connect the black clamp to the negative (-).
   • ALWAYS KEEP THE RED & BLACK CLAMPS FROM TOUCHING.

• ALWAYS DISCONNECT THE NEGATIVE CABLE FROM THE BATTERY FIRST AND RECONNECT IT LAST.

3) Once the clamps are properly connected, the battery analyzer will power on automatically and be ready to conduct tests.

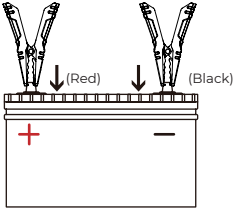


Figure 3.3.1

Note:
The BT600 Plus can be powered on by its built-in batteries or the connected vehicle battery.

SECTION 4 HOW TO USE

Battery Test

WARNING:
Before testing in the vehicle, ensure all accessory loads are off, the key is removed from the ignition, and the doors are closed. If the vehicle was running prior to the test, turn on the headlights to discharge the battery's surface charge. Allow the battery to rest for at least 1 minute to recover before proceeding with the test. The battery testing function applies to 6V, 12V and 24V lead-acid batteries.

1) Select **BATTERY** and press **[ENTER / PRINT]**.

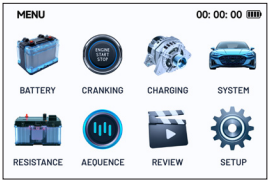


Figure 4.1.1

2) Select the voltage of the battery to be tested from three options: 6V, 12V and 24V and press **[ENTER/PRINT]**.

3) Select the corresponding battery type and press **[ENTER / PRINT]**. The specific battery type is usually listed on the battery label.

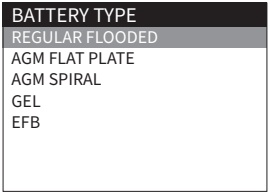


Figure 4.1.2

4) Select the corresponding battery standard and press **[ENTER / PRINT]**. The specific battery standard will also be listed on the battery label.

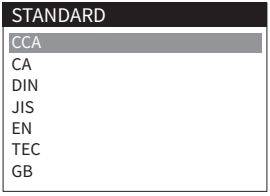


Figure 4.1.3

Please refer to the following table for specific battery standards and test ranges.

Measure -ment Standard	Description	Measurement Range
CCA	Cold Cranking Amps, specified by SAE & BCI, most frequently used value for starting battery at 0°F(-18°C)	100-2000
BCI	Battery Council International standard	100-2000

CA	Cranking Amps standard, effective starting current value at 0°C	100-2000
MCA	Marine Cranking Amps standard, effective starting current value at 0°C	100-2000
JIS	Japan Industrial Standard, displayed on the battery as combination of the numbers and letters, e.g., 55D23,80D26	26A17-245H52
DIN	German Auto Industry Committee Standard	100-1400
IEC	International Electrotechnical Commission Standard	100-1400
EN	European Automobile Industry Association Standard	100-2000
SAE	Society of Automotive Engineers Standard	100-2000
GB	China National Standard	30Ah-220Ah

5) Input the CCA by using the ▲/▼ keys and press **[ENTER / PRINT]** to start the test.

Note:
You can short press the ▲/▼ keys to increase or decrease the value by 5 each time, or you can press and hold the ▲/▼ keys to continuously increase or decrease the value.

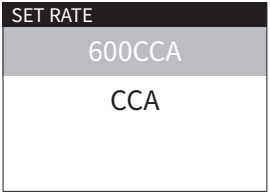


Figure 4.1.4

6) The test result will appear soon on the tool's display.

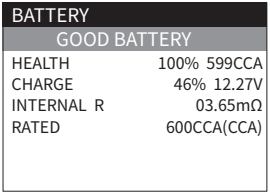


Figure 4.1.5

To understand the test results, please refer to the chart below.

Test Result	Explanation
GOOD BATTERY	Good battery condition
GOOD, RECHARGE	Good battery condition, please charge the battery
REPLACE BATTERY	Please replace the battery
CHARGE RETEST	Please charge the battery and then test again
BAD CELL, REPLACE	Bad battery cell, please replace now
NORMAL	Normal battery condition

NORMAL, RECHARGE	Normal battery condition, please charge the battery
NOTE, RECHARGE	Pay attention to the battery condition and charge the battery
NOTE	Pay attention to the battery condition

Battery Test Terminology:

Terminology	Description
HEALTH (SOH)	The state of health shows the difference between the battery being tested and a new battery, considering cell aging. The SOH is defined according to the maximum battery charge ratio and its capacity.
CHARGE (SOC)	The state of charge describes the difference between a fully charged battery and the same battery in use. It analyses the remaining quantity of electricity available in the cell. The SOC is established according to the battery's remaining charge ratio, divided by the maximum charge that the battery can deliver.
INTERNAL R (Internal Resistance)	The internal resistance is the opposition to the current flow presented by the cells and the battery itself, generating heat. Its electronic resistance and ionic resistance directly impact this indicator.
RATED	The CCA value you entered in the previous step, that is, the CCA value listed on the battery label. The difference of the rated CCA between the actual CCA determines the test result to a certain extent.

7) To print the test result, press [**ENTER/PRINT**].

Note:
If the system prompts that the printing function is unavailable, please follow the on-screen instructions to charge the BT600 Plus or load a roll of printing paper.

Cranking Test

WARNING:
Before the cranking test, the engine and all other accessory loads must be off in order to ensure accurate results. This test applies to both 12V & 24V lead-acid batteries.

1) Select **CRANKING** and press **[ENTER / PRINT]**.

2) The test will start by prompting you to crank the engine. Follow the instructions and start the engine.

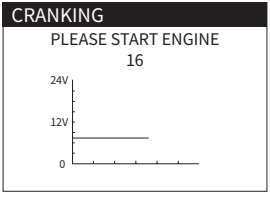


Figure 4.2.1

3) The test results will be displayed on the screen, showing the voltage waveform during vehicle cranking along with the cranking time and voltage reading.

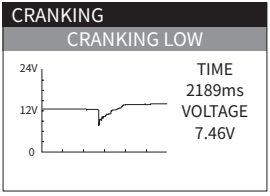


Figure 4.2.2

· **Cranking Time** refers to the time it takes for a vehicle to start the engine.
· **Cranking Voltage** refers to the battery voltage while the engine is starting.

4) To print the test result, press **[ENTER/PRINT]**.

Charging Test

WARNING:
Always start the engine before performing the charging test. This test applies to both 12V & 24V lead-acid batteries.

1) Select CHARGING from the home screen and press **[ENTER / PRINT]**.

2) Confirm the engine has been started and press **[ENTER / PRINT]**.

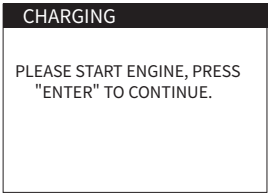


Figure 4.3.1

3) Ripple test will be conducted before the charging test starts. The test result will be displayed in graph and will jump to the next step after 5 seconds.

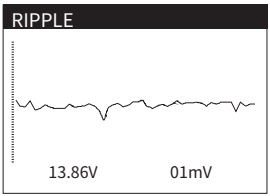


Figure 4.3.2

4) Turn off the loads, such as headlights and blower motor. Do as requested and press **[ENTER / PRINT]**.

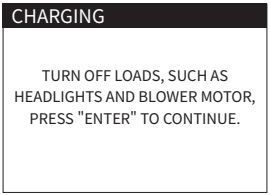


Figure 4.3.3

5) Increase the speed to 2500 RPM. Do as requested and press **[ENTER / PRINT]**.

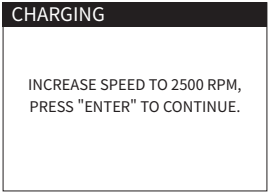


Figure 4.3.4

6) Release the throttle. Do as the requested and press **[ENTER / PRINT]**.

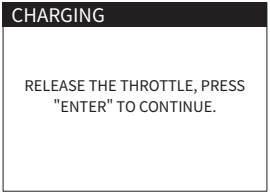


Figure 4.3.6

7) Turn on the loads, such as headlights and blower motor. Do as requested and press **[ENTER / PRINT]**.

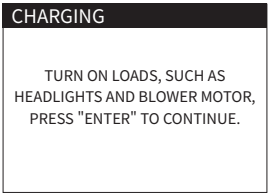


Figure 4.3.6

8) Increase the speed to 2500 RPM. Do as requested and press **[ENTER / PRINT]**.

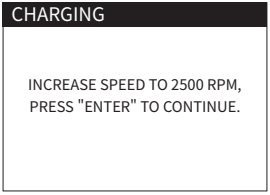


Figure 4.3.7

9) Release the throttle and turn off the loads and engine. Do as requested and press **[ENTER / PRINT]**.

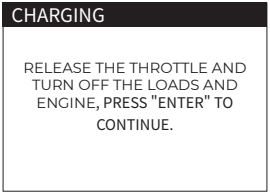


Figure 4.3.8

10) The test result will appear on the display.

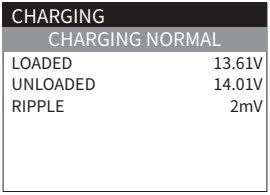


Figure 4.3.9

Loaded/Unloaded Voltage and Ripple:

- **Loaded Voltage** means the voltage measured when the on-board electrical appliances are turned on.
- **Unloaded Voltage** refers to the voltage measured when the on-board electrical appliances are turned off.
- **Ripple**: A vehicle's battery operates on one-way direct current (DC) electricity, while alternators output alternating current (AC) electricity. In this process, the power needs to go through the diode rectifier to turn into a direct current - that's when the ripple occurs.

11) To print the test result, press **[ENTER/PRINT]**.

System Test

1) Select **SYSTEM** and press **[ENTER / PRINT]**.

2) The system test will start in this process: **Battery Test** > **Cranking Test** > **Charging Test**. Press **[ENTER / PRINT]**.

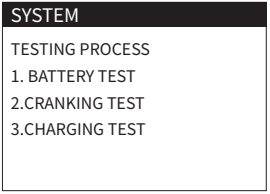


Figure 4.4.1

3) Follow the on-screen instructions to complete battery test, cranking test and charging test step by step.
For detailed operation, please refer to the parts of Battery Test, Cranking Test and Charging Test in Section 4 respectively. The difference is that the test result will ONLY appear at the end of the whole system test.

4) The system will display the system results after all three tests are complete.

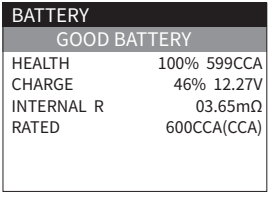


Figure 4.4.2

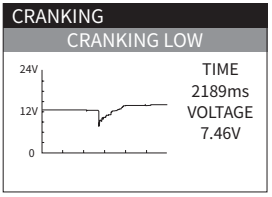


Figure 4.4.3

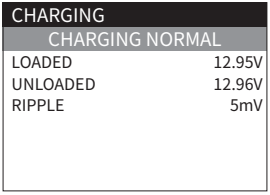


Figure 4.4.4

5) To print the test result, press **[ENTER/PRINT]**.

Internal Resistance Test

Resistance Interface Introduction

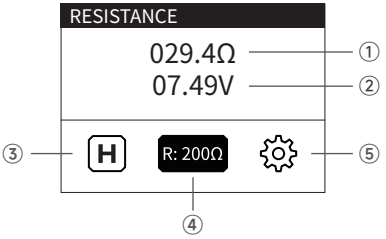


Figure 4.5.1

Item	Name	Description
①	Internal Resistance Value	Displays the currently reading value of the tested internal resistance.
②	Voltage Value	Displays the currently reading value of the tested voltage.
③	HOLD	Enables the system to retain the reading.
④	RANGE	Allows the user to manually change the measurement range when the range mode is MANUAL.
⑤	SETUP	Provides access to the settings for result printing and internal resistance reading configuration.

To Perform Battery Resistance and Voltage Measurements

1) Select **RESISTANCE** from the home screen and press **[ENTER / PRINT]**.

2) The system displays the internal resistance and voltage readings of the tested battery.
If "-.-" appears, it means that the connection is not secure. In this case, check the connection between the test cable and the battery analyzer as well as the connection between the clamps and the battery terminals. Restart the measurements after ensuring the connections are proper.
If "OL" appears, it indicates that the measured value exceeds the currently set measurement range. To resolve this issue, you can try one of the following methods:
   - Enable the Automatic Range Mode: Navigate to **SETUP** > **RESISTANCE** > **AUTO/MANUAL** > **AUTOMATIC**.
   - Manually Select the Resistance Range: Go to **SETUP** > **RESISTANCE** > **AUTO/MANUAL** > **MANUAL**. Then, return to the RESISTANCE interface, select the RANGE feature, and press **[ENTER/PRINT]** to cycle through different ranges in the order of 30mΩ > 300mΩ > 3Ω > 200Ω > 3mΩ. Once the correct range is selected, the valid readings will be displayed.

> ***NOTE:***
> The measurement range feature applies only to battery resistance readings, with the default range set to 30mΩ. The battery voltage measurement uses automatic ranging mode, and the range cannot be changed.

3) To hold the read value, select the HOLD option on the Resistance interface. The system will display the held reading value and show a conclusion with a PASS/WARN/FAILED prompt.

NOTE:
• The automatically held reading will remain even after disconnecting the clamps from the tested battery. To release the retained reading, press **[ENTER/PRINT]**.
• The conclusion is determined based on preset thresholds, which can be customized via the SETUP interface. For details, refer to the part "Customize Measurement Thresholds".

Warning:
To prevent possible electrical shock, fire, or personal injury, do not use the HOLD function to measure unknown potentials. When HOLD is selected, the display does not change when a different potential is measured.

4) To print the test result, select the SETUP softkey on the Resistance interface, choose **PRINT**, and press **[ENTER/PINT]**.

To Configure Settings

Select the feature of SETUP from the RESISTANCE interface, and choose **RESISTANCE**, which enables you to customize measurements threshold value, turn on or off the beep sound and change the range mode.

Customize Measurement Thresholds

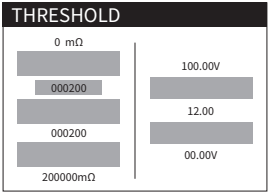


Figure 4.5.2

The system sets the fixed lower and upper measurement thresholds, along with a customizable tolerance range, for battery resistance and voltage readings.

- The device supports battery resistance reading from 0mΩ to 200Ω, and allows you to define the lower and upper limit of the tolerance range.
- The device supports battery voltage reading from 0.00V to ±100.00V, and allows you to define the tolerance value.

1) Select **THRESHOLD** from the Resistance interface.

2) Press **[ENTER/PRINT]** to define the lower limit of the resistance tolerance range. Use the ▲/▼ keys to adjust the value of the selected digit, and the ◄/► keys to move between digits. Once the lower limit is set, press **[ENTER/PRINT]** to define the upper limit of the resistance tolerance range and the voltage reading tolerance value in sequence.

   When a tolerance range set is applied, the system compares each resistance reading with the resistance reference in the current threshold set. The resistance test interface then displays the comparison conclusion: PASS (green), WARN (yellow) and FAILED (red).

   - If the reading is between 0mΩ and the defined lower tolerance limit, the comparison conclusion is PASS.
   - If the reading falls within the tolerance range, the comparison conclusion is WARN, suggesting that the tested battery requires further attention and increase in test frequency.
   - If the reading is between the defined upper tolerance limit and 200Ω, the comparison conclusion is FAILED, suggesting that the tested battery is potentially compromised and should be further investigated.

     At the same time, the device compares each stable voltage reading with the lower voltage from the applied threshold set.
   - If the reading is between the defined value and 100.00V, the comparison result is PASS.
   - If the reading is between 0.00V and the defined value, the comparison result is WARN.

NOTE:
· If the resistance reading and the voltage measurement have different conclusions, the system shows the worse result on the display. For example, the resistance indicates PASS but the voltage indicates WARN, the product still shows WARN on the display.
· To measure only the battery's internal resistance, you can set the tolerance value of the voltage test to 0 for more precise resistance measurement conclusions.

Turn ON/OFF Beep Sound

1) Select **BEEP** from the Resistance interface.

2) You can choose from three options:

- **NEVER**: The device remains silent after presenting the comparison conclusion.
- **PASS---ON**: The device beeps when presenting the PASS conclusion.
- **WARN/FAILED---ON**: The device beeps when presenting the WARN or FAILED conclusion.

Change the Range Mode

1) Select **AUTO/MANUAL** from the Resistance interface.

2) You can choose between **AUTOMATIC** and **MANUAL**.

- **AUTOMATIC**: The system automatically switches to the appropriate measurement range for the read resistance values.
- **MANUAL**: Users need to manually changes to the correct measurement range for the read resistance values. For details on manual operation, refer to Step 2 in the **To Perform Battery Resistance and Voltage Measurements** section.

Sequence Test

Sequence Test is designed to measure the voltage and internal resistance of batteries in batches. This function allows you to perform batch testing of up to 500 batteries per group, with support for up to 10 groups.

> ***NOTE:***
> Automatic measurement range switching is not applied during the sequence test.

1) Select **SEQUENCE** from the home screen.

2) Select **A--000** to start the batch test of the first group.

3) If "OL" appears, it indicates the reading exceeds the current measurement range, press the ▲/▼ keys to change the measurement range till the valid reading is displayed.

4) Press **[ENTER/PRINT]**, the reading value will be stored, and the corresponding color of the comparison conclusion will be shown in the column.

5) Press the ▸ key to move the cursor to the next column. Connect the next battery via the test cables and the system will automatically read the internal resistance and voltage.

> ***NOTE:***
> The system allows you to update measured values. To modify historical results, attach the clamps to the battery terminals, use the ◂ /▸ keys to navigate to the desired column and press **[ENTER/PRINT]** to save the new readings.

6) To finish the test of the current group, press **[ENTER/PRINT]** to save the current test data and go back to the previous interface or press **[EXIT]** to leave the screen directly.

7) Select another group to continue the sequence test or press **[EXIT]** to go back to the home screen.

SECTION 5 REVIEW DATA

The system automatically saves the latest ten test results from previously performed tests. The REVIEW function allows you to view or delete these saved results.

1) Select **REVIEW** from home screen and press **[ENTER / PRINT]**.

2) Use the ▲/▼ keys to scroll through the list and select an option to review or delete the results of the battery test, cranking test, charging test, system test, and resistance test.

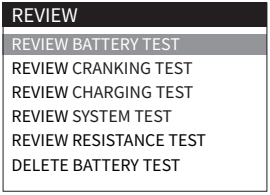


Figure 5.1.1

3) To view saved test results, press **[ENTER/PRINT]** after selection from the REVIEW interface. Then, choose a piece of result data from the time list to view the details. If you want to print the result, press **[ENTER/PRINT]** again.

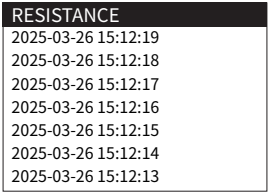


Figure 5.1.2

4) To delete the saved test results, press **[ENTER/PRINT]** after selection from the REVIEW interface. Then, the system will prompt you that the deletion succeeds.

NOTE:
Please exercise caution to delete saved test results. Once you confirm deletion by pressing **[ENTER/PRINT]**, all saved results for the selected test type will be permanently erased, and this action cannot be undone.

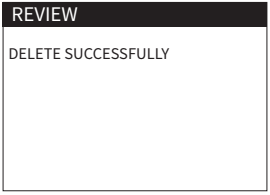


Figure 5.1.3

SECTION 6 SYSTEM SETUP

The SYSTEM menu allows you to configure settings for resistance test, time, language, and shutdown, as well as to view device information.

To Configure Resistance Test Settings:

1) Select **SETUP** from the home screen and press **[ENTER / PRINT]**.

2) Select **RESISTANCE** from the SETUP interface and press **[ENTER / PRINT]**. Then you can define settings of Threshold, BEEP, Range Mode. For details, refer to the part of "**To Configure Settings**" in the section of "**Internal Resistance Test**".

To Adjust the Displayed Time:

NOTE:
To ensure the correct time is displayed, adjust the time settings when using the device for the first time.

1) Select **SETUP** from the home screen and press **[ENTER / PRINT]**.

2) Select **Time** from the SETUP interface and press **[ENTER / PRINT]**.

3) Use the ▲/▼ keys to adjust the value of the selected digit, and the ◄ /► keys to move between digits, allowing you to modify the year, month, date, hour, minute, and second from left to right.

4) Press **[ENTER/PRINT]** to save and apply the settings. Press **[EXIT]** to exit the interface without saving.

To Change the System Language:

1) Select **SETUP** from the home screen and press **[ENTER / PRINT]**.

2) Select **Language** from the SETUP interface and press **[ENTER / PRINT]**.

3) Use the arrow keys to navigate to and select your preferred language.

4) Press **[ENTER/PRINT]** to save and apply the settings. Press **[EXIT]** to exit the interface without saving.

To Set up the Automatic Shutdown Interval:

1) Select **SETUP** from the home screen and press **[ENTER / PRINT]**.

2) Select **SHUTDOWN** from the SETUP interface and press **[ENTER / PRINT**].

3) Use the ▲/▼ keys to scroll through the options and select your preferred interval.

- **NEVER:** The device stays ON until its built-in batteries are depleted and it is no longer connected to any tested battery.
- **1 MINUTE:** The device will automatically shut down one minute after you disconnect it from the tested battery and perform no operation on this tool.
- **5 MINUTES:** The device will automatically shut down five minutes after you disconnect it from the tested battery and perform no operation on this tool.
- **10 MINUTES:** The device will automatically shut down ten minutes after you disconnect it from the tested battery and perform no operation on this tool.
- **15 MINUTES:** The device will automatically shut down fifteen minutes after you disconnect it from the tested battery and perform no operation on this tool.

4) Press **[ENTER/PRINT]** to save and apply the settings. Press **[EXIT]** to exit the interface without saving.

To View More Information about the Device

1) Select **SETUP** from the home screen and press [**ENTER / PRINT**].

2) Select **ABOUT** from the SETUP interface and press **[ENTER / PRINT]**.

3) You can view the information of hardware version, software version, serial number and register code.

SECTION 7 UPDATE

A computer with Windows XP/7/8/10 system is required to update the device.

1) Go to www.topdon.com/products/BT600-Plus, click "**Download**", and download the update tool to your computer.

2) Install the update tool and log in.

NOTE:
If you don't have an account, register an account with your email address first.

3) Connect the analyzer to the computer via the USB cable.

4) Register the analyzer, the information of the analyzer will be shown on the **My Device** interface. Confirm the serial number is correct. (This step is not necessary if you've already registered the device.)

5) Select "**Upgrade**", the newest firmware version will show up. Click "**Upgrade**", the software will start to upgrade the analyzer. Wait until the prompt indicates success.

NOTE:
The device will automatically initialize the first time it is used after the upgrade.

SECTION 8
REPLACE PRINTER PAPER

This battery analyzer comes with three rolls of printer paper, of which one is installed in the analyzer and the other four are in the box. Please follow the following figures below to replace the paper roll.

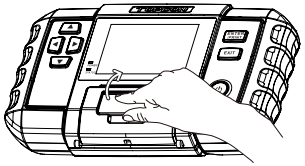


Figure 8.1.1

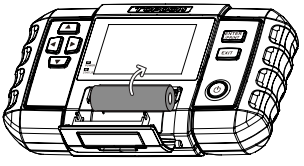


Figure 8.1.2

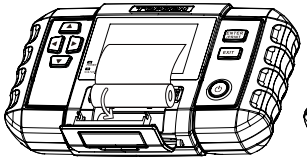


Figure 8.1.3

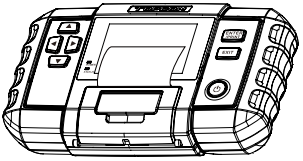


Figure 8.1.4

NOTE:
The direction of the printer paper must be followed in order, otherwise it will not be able to print the content.

SECTION 9
TECHNICAL SPECIFICATIONS

Working Temperature	0°C~50°C (32°F~122°F)
Storage TemperatureVoltage	-20°C~70°C (-4°F~158°F)
Test Range (DC)	0V to ±100V
Voltage Test Accuracy	±0.5%
Internal Resistance Test Range	0mΩ to 200Ω
Internal Resistance Test Accuracy	±1%
Dimensions	218 x 134 x 57mm (8.58 x 5.27 x 2.24"")
Cable Length	1800mm (70.9"") 1000mm (39.37'')
Rechargeable Battery Capacity	2600 mAh per cell × 2

SECTION 10 FAQ

Q: Can the BT600 Plus test the battery installed in the vehicle?
A: Yes, it supports in-vehicle and out-of-vehicle testing.

Q: Are the test results accurate?
A: Yes. Our BT600 Plus features advanced conductance detection, able to give you accurate test results in seconds.

Q: What batteries can the BT600 Plus work on?
A: It works on 6V, 12V and 24V regular flooded, AGM Flat plate, AGM Spiral, GEL and Deep Cycle batteries, with CCA between 100 to 2000.

Q: Is the BT600 Plus designed with any built-in protections?
A: Yes. It offers extra-safe Reverse Polarity protection. It offers easy operations even if you're new to battery testing.

Q: How do I confirm if my vehicle battery is bad or good?
A: The battery analyzer will display SOH (State of Health), SOC (State of Charge), CCA (Cold Cranking Ampere), Voltage, Internal Resistance, and Rating, with an intuitive test result of "GOOD", "NORMAL" or "BAD" for your reference. If the internal resistance is too large, it indicates a broken battery.

Q: Can this battery analyzer estimate the remaining capacity of my battery?
A: Yes. The battery analyzer will display SOC (State of Charge) to express as a percentage of your battery's rated capacity, a measure of its condition to assess the potential energy.
Note that a decent SOC (State of Charge) doesn't mean the battery is in good condition. Be sure to refer to your battery's actual CCA Value and Internal Resistance for further analysis.

Q: Can this device test internal resistance independently? What types of batteries does it support?
A: Yes. It supports lead-acid batteries, lithium batteries and dry batteries.

Q: Why does the device produce a clicking sound during the test process?
A: The clicking sound is caused by the device switching circuits during testing. This is a normal occurrence and does not indicate any malfunction.

SECTION 11 WARRANTY

TOPDON's One-Year Limited Warranty

The TOPDON Company warrants to its original purchaser that TOPDON products will be free from defects in material and workmanship for 12 months from the date of purchase (Warranty Period). For the defects reported during the Warranty Period, TOPDON will, according to its technical support analysis and confirmation, either repair or replace the defective part or product.

If there is any conflict between the TOPDON warranty policy and local laws, the local laws shall prevail.

This limited warranty is void under the following conditions:
• Misused, disassembled, altered or repaired by unauthorized stores or technicians.
• Careless handling and/or improper operation.

Notice: All information in this manual is based on the latest information available at the time of publication, and no warranty can be made for its accuracy or completeness.
TOPDON reserves the right to make changes at any time without notice.

COMPLIANCE INFORMATION

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

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