

USER'S MANUAL

INNOVA[®]

BA200

Battery Tester



POWERED BY

REPAIR[®]
SOLUTIONS **P_{RO}**

HELLO...

On behalf of everyone at INNOVA, we want to welcome you and thank you for purchasing the **INNOVA® BA200 Battery Tester Module - Wireless Intelligent Tester!** Every automotive diagnostic scan tool we make includes tons of pro-level features designed to help maximize, and simplify, your diagnostic routine. In this manual, we will guide you on how to access your battery tool's intuitive functions including:

- ✓ *Bluetooth Connectivity*
- ✓ *Battery Health Check*
- ✓ *Starter System Test*
- ✓ *Charging System Analysis*
- ✓ *Electrical System Test*
- ✓ *Voltmeter (12 V)*
- ✓ *Battery Standard: CCA, CA, JIS, EN, DIN, SAE, and IEC*
- ✓ *Repair Tip*
- ✓ *Battery Type: Regular, AGM, and GEL batteries*
- ✓ *Test Range: 12V Lead-acid Battery, 100 - 2000 CCA*
- ✓ *Save/Print/Share Reports*
- ✓ *And much more...*

Plus, gain the benefit of having unlimited access to real world solutions on your mobile device:



RepairSolutionsPRO® increases the power of your INNOVA Diagnostic Tools by delivering the most complete automotive repair database with verified fixes from ASE Certified Master Technicians. Get the right fix and the right parts instantly right on your scan tool or mobile device..

Enjoy using your INNOVA Battery Module!

Yours sincerely,

The Innova Technical Team

P.S.: Connect with us to see what we're up to...





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LEGAL INFORMATION

FCC COMPLIANCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement

- The transmitters within this device must not be co-located or operating in conjunction with any other antenna or transmitter.
- This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. Please follow the operation instructions as documented in this manual to fulfill IC RF exposure compliance requirements.

TRADEMARKS

Title, ownership rights, and intellectual property rights in the Products and Services shall remain in Innova and/or its licensors and other suppliers. Licensee and End Users acknowledge such ownership, confidential information, and intellectual property rights and will not take any action to jeopardize, limit or interfere in any manner with Innova's or its licensors' or other suppliers' ownership of or rights with respect to the Products and Services. The Products and Services may be protected by Patent, Trademark, Copyright and/or other intellectual property laws and by international treaties. All trademarks used in connection with the Products and Services are owned by Innova, its affiliates or its licensors and other suppliers, and no license to use any such trademarks is provided hereunder. Licensee and End Users agree that Innova may use in any manner and without limitation all comments, suggestions, complaints and other feedback Licensee and End Users provide relating to the Products and Services. For more information and current listing of trademarks, please visit <https://www.innova.com/pages/trademarks>.

PATENTS

Innova Electronics Corp. protects its intellectual property with numerous U.S. patents, which were used to research, design and manufacture this product. Please visit <https://www.innova.com/pages/patents> for additional information.

FIRMWARE VERSION

Please note that the images and functions in this manual may differ based on the current **Firmware Version** you have. To check your battery tester module's current version and to check for updates, please see the **Tool Firmware Updates** section. [[See page 23](#)]

CALIFORNIA PRODUCT WARNINGS

WARNING

This product can expose you to chemicals including DiNP, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SAFETY PRECAUTIONS

SAFETY FIRST!

It is important that every user of this product read all instructions and warnings included in this manual to ensure their safety, the safety of others, and to prevent damage to this product and the vehicle being diagnosed and repaired. This manual describes common test procedures used by experienced service technicians. It is assumed that the user has a good understanding of vehicle systems before using this product.

Many test procedures require precautions to avoid accidents that can result in personal injury, and/or damage to your vehicle or test equipment. At a minimum, the following safety standards should be followed whenever using this product, or whenever working on a vehicle.

- ❑ When an engine is running, it produces carbon monoxide, a toxic and poisonous gas. To prevent serious injury or death from carbon monoxide poisoning, **operate the vehicle ONLY in a well-ventilated area.**
- ❑ To protect your eyes from propelled objects as well as hot or caustic liquids, **always wear approved safety eye protection.**
- ❑ When an engine is running, many parts (such as the coolant fan, pulleys, fan belt, etc.) turn at high speed. To avoid serious injury, **always be aware of moving parts.** Keep a safe distance from these parts as well as other potentially moving objects.
- ❑ Engine parts become very hot when the engine is running. To prevent severe burns, **avoid contact with hot engine parts.**
- ❑ Before starting an engine for testing or troubleshooting, make sure the parking brake is engaged. **Put the transmission in park** (for automatic transmission) **or neutral** (for manual transmission). **Block the drive wheels** with suitable tire blocks.
- ❑ Connecting or disconnecting test equipment when the ignition is ON can damage test equipment and the vehicle's electronic components. **Turn the ignition OFF before connecting the battery tester module to or disconnecting the battery tester module from the battery terminals under the hood.**
- ❑ To **prevent damage to the on-board computer** when taking vehicle electrical measurements, always use a digital multimeter with at least 10 Megohms of impedance.
- ❑ Fuel and battery vapors are highly flammable. To prevent an explosion, keep all sparks, heated items, and open flames away from the battery and fuel vapors. **DO NOT SMOKE NEAR THE VEHICLE DURING TESTING.**
- ❑ **Don't wear loose clothing or jewelry when working on an engine.** Loose clothing can become caught in the fan, pulleys, belts, etc. Jewelry is highly conductive and can cause a severe burn if it makes contact between a power source and ground.

SAFETY ALERT ICONS

As you read this manual, color-coded icons are used throughout to identify safety alerts and warnings. These are provided to help prevent serious injury to you, injury to bystanders, and damage to property or equipment. The meanings of these icons are as follows:



Yellow Icon – Indicates a **"NOTE"** statement that offers special information or tips on what is being instructed.



Orange Icon – Indicates a potential hazardous situation. Provides a **"WARNING"** statement on how to proceed to avoid serious injury to the user or bystanders, and/or damage to equipment.

GLOSSARY

ADDITIONAL TERMINOLOGY & ACRONYMS

- **DMM** = Digital Multimeter
- **DC** = Direct Current
- **AC** = Alternating Current
- **TSBs** = Technical Service Bulletins
- **YMME** = Year, Make, Model, Engine
- **VIN** = Vehicle Identification Number

INTRODUCTION

CONTROLS AND INDICATORS

See Figure 1 for the locations of items 1 through 5, below.

1. **Removable Battery Cable** - Flexible 2-meter cable.
2. **Battery Status LED Indicators** - Indicates the communication status of the battery tester module.
 - Flashing red LED - Indicates that the battery tester module is powered on.
 - Solid green LED - Indicates a successful connection to the RSPRO® app.
3. **Smart Battery Clamps Reverse Polarity Protection & Temperature Sensor** - Ensures safe operation by powering up the unit only when connected correctly to the battery terminals.
4. **Pogo Pins** - Compatible with the Innova 7111.
5. **Type C port** - Supports updating the battery tester module.

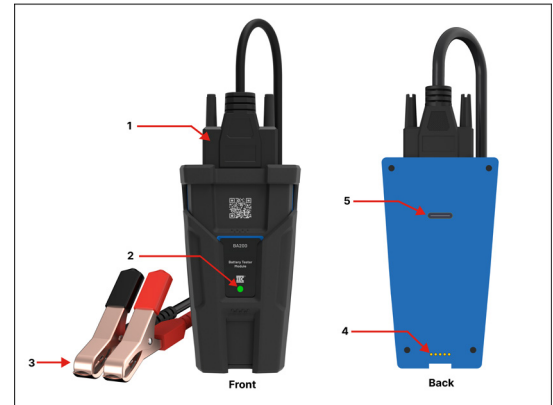


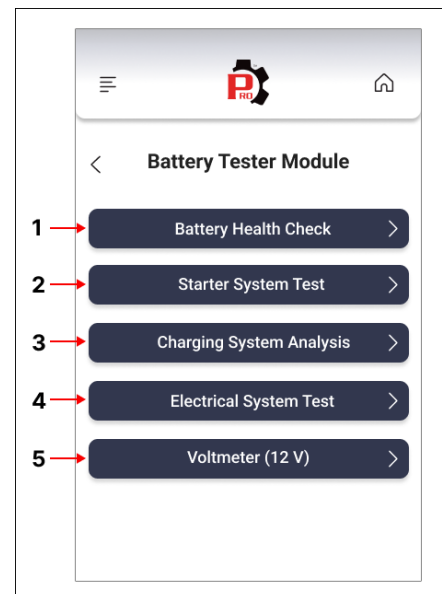
Figure 1. Control and Indicators

BATTERY TESTER MODULE MENU

The Battery Tester Module menu screen provides access to all primary functions.

See Figure 2 for the locations of items 1 through 5, below.

1. **Battery Health Check** - Evaluates the condition of a vehicle's battery by examining its parameters, offering a conclusion on its status. This process includes Out-of-vehicle and In-vehicle tests. [\[See page 12\]](#)
2. **Starter System Test** - Determines the status of the vehicle's starter system, including the starter and battery, by evaluating the cranking voltage. [\[See page 15\]](#)
3. **Charging System Analysis** - Performs a deep test of the output voltage and AC ripple voltage generated by the alternator/generator of the vehicle across multiple usage scenarios, such as with electrical load/no load – high/idle revving. [\[See page 17\]](#)
4. **Electrical System Test** - Evaluates the health of the Starting and Charging systems in a vehicle based on the results of three tests: Battery Health Check, Starter System Test, and Charging System Analysis. [\[See page 18\]](#)
5. **Voltmeter (12 V)** - Works as DC voltage measurement of a digital multimeter (DMM). It continuously measures the voltage of the vehicles's battery. [\[See page 21\]](#)



TECHNICAL SPECIFICATIONS

The following table provides the battery tester module's current technical specifications:*

Input Voltage	6 - 24V (DC)
Battery Cable	DB15 Detachable
Communication	Wireless: Bluetooth (RSPRO® App/7111) Wire: Pogo Pins (7111)
Operating Temperature	23°F to 122°F (-5°C to 50°C)
Memory	4MB Memory
Dimension (L x W x H)	120 x 65 x 28 (mm)

*Manufacturer reserves the right to change technical specifications at any time.

THE RepairSolutionsPRO® APP

Innova's **RepairSolutionsPRO® (RSPRO®)** app is a web-based service created to assist Professional technicians to simplify and augment their vehicle diagnostic process.

In essence, it helps you decode the diagnostic data collected by your INNOVA® OBD II tablet to arrive at a most likely fix. At its core, the app uses a database of millions of real-world verified fixes –collected over the last 25 years by ASE Master Technicians across the U.S.– that is cross-referenced to your specific vehicle's problem to instantly arrive at a verified fix. Think of it as a second opinion from your most trusted peers to help you diagnose and repair more vehicles.



THE RSPRO® APP OFFERS...

- **Verified Fixes** – Find the most likely fixes reported and verified by ASE Technicians for the retrieved DTCs. Plus, quickly purchase the exact parts you need right from the app.
- **Predicted Repairs** – With millions of verified repair solutions, get a statistical probability of what repairs the vehicle may need within the next 12 months.
- **TSBs & Recalls** – Learn if there are any special NHTSA safety recalls or Technical Service Bulletins (TSBs) issued by the vehicle's manufacturer.
- **Upcoming Maintenance** – View the vehicle manufacturer's recommended maintenance intervals. Plus, conveniently order the correct maintenance parts right from the app.
- And much more...

HARDWARE REQUIREMENTS

- Innova Diagnostic Tools with Bluetooth/Wi-Fi connectivity.
- Android or iOS Mobile Device.

DOWNLOAD THE RSPRO® APP

- Available for Apple iOS & Android Devices (Scan QR Code)



REGISTER AND LOGIN

1. Download and install the **RSPRO®** app (see above).
2. Launch the app and log in to your account.
 - If you have not yet established an account, you must register for a FREE account before proceeding.
3. Select your Technician Profile:
 - Choose your ASE Certification(s).
 - Specify Areas of Expertise
 - Indicate Job Positions.
 - Optionally, set your Labor Rate.
 - Select the Automobile Makes you specialize in.
4. Once all information is complete, tap **Continue**.
5. Enter the code sent to your email for verification.
6. Once the account is successfully verified, tap **Confirm** to finish the process.

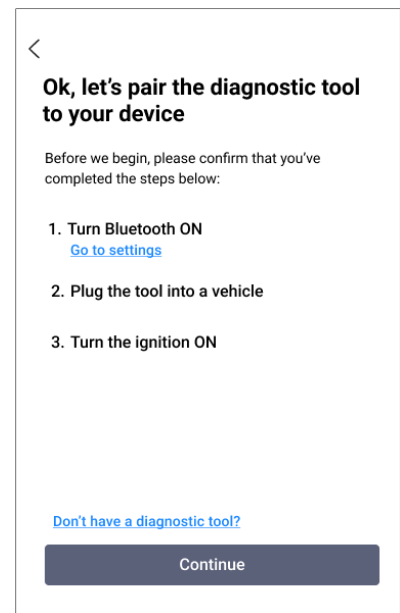
USING THE BATTERY TESTER MODULE

The battery tester module can be used with both the RSPRO® app and the INNOVA® 7111 Smart Diagnostic System (SDS) tablet.

CONNECTING THE BATTERY TESTER MODULE WITH RSPRO® APP

FOR THE FIRST-TIME USER

1. Open the RSPRO® app.
 - Follow the **Register and Login** steps (see above) to create an account.
2. Ensure the vehicle under test meets the following conditions:
 - Ensure the ignition, all accessories, and loads are turned off.
 - Verify that the battery terminals are clean, use a wire brush for cleaning if necessary.
3. Attach the red battery clamp to the (+) positive battery terminal, and attach the black battery clamp to the (-) negative battery terminal. Ensure the clamps are securely attached to the correct terminals.
 - Once the battery tester module is properly connected, the red LED light on the device will begin flashing.
4. From the instruction screen, tap **Continue** to begin the connection process with the battery tester module.
5. On the “Searching for a tool...” screen, select your identified battery tester module.
 - The Pairing screen will display during this process.
6. After successfully pairing the battery tester module, a “notification” screen displays.
7. Tap **Continue** to finish the connectivity process.
 - The screen displays the Battery Tester Module menu.



FOR REGISTERED USERS

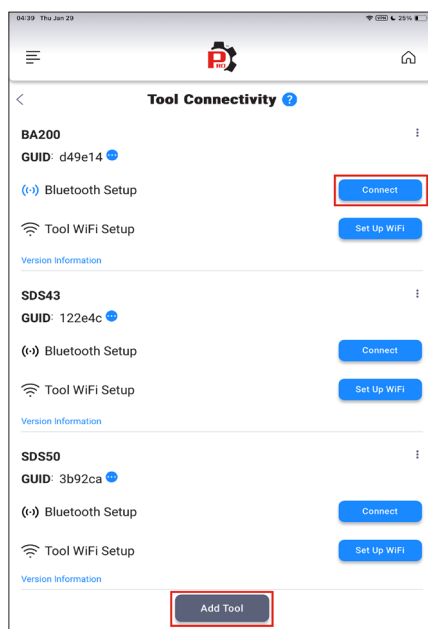
1. Ensure the vehicle under test meets the following conditions:
 - Ensure the ignition, all accessories, and loads are turned off.
 - Verify that the battery terminals are clean, use a wire brush for cleaning if necessary.
2. Attach the red battery clamp to the (+) positive battery terminal, and attach the black battery clamp to the (-) negative battery terminal. Ensure the clamps are securely attached to the correct terminals.
 - Once the battery tester module is properly connected, the red LED light on the device will begin flashing.

3. Open the RSPRO® app.



NOTE: The RSPRO® app will automatically connect to the previously paired battery tester module if the device is detected nearby.

4. From the Home screen, tap the ≡ **Side Menu** icon.
 - Choose **Tool Pairing** to navigate the Tool Connectivity page, which displays all the diagnostic tools registered with your RSPRO® account.
5. Tap the **Connect** button and follow the on-screen prompts to connect your battery tester module.



- The Pairing screen will display during this process.
 - Once your battery tester module is successfully connected to the battery and linked to the app, a "notification" screen displays.
 - Tap **Continue** to finish the connectivity process.
6. Tap the **Add Tool** button to connect a new tool or if no tool was previously connected.
 - Follow the on-screen instructions to connect the new battery tester module.



NOTE: In cases where the RSPRO® app doesn't have a Wi-Fi connection, it switches to offline mode. In this mode, the app connects via Bluetooth to the previously paired battery tester module if it is nearby. Users can still perform tests and access up to five previously viewed online reports without an internet connection.



NOTE: These offline reports are stored locally for up to 30 days. After that, they are automatically deleted from the app.

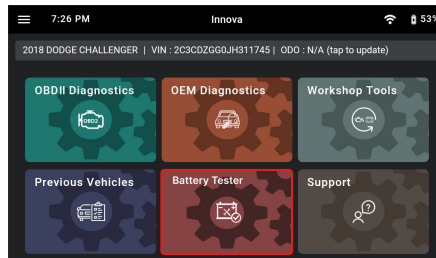
CONNECTING THE BATTERY TESTER MODULE WITH 7111

1. Ensure the vehicle under test meets the following conditions:
 - Ensure the ignition, all accessories, and loads are turned off.
 - Verify that the battery terminals are clean, use a wire brush for cleaning if necessary.
2. Attach the red battery clamp to the (+) positive battery terminal, and attach the black battery clamp to the (-) negative battery terminal. Ensure the clamps are securely attached to the correct terminals.
 - Once the battery tester module is properly connected, the red LED light on the device will begin flashing.



NOTE: Make sure the connection between the test clamps and the battery terminals is good to ensure that the Battery Tester function on the INNOVA® 7111 Smart Diagnostic System (SDS) tablet is enabled.

3. Open the INNOVA® 7111 Smart Diagnostic System (SDS) tablet.
4. From the Home screen, tap **Battery Tester**.



- Tap **Continue** on the instruction screen if this is your first time using it.
5. The “Searching for a tool...” screen displays. Then, a list of nearby battery tester modules displays. Select your identified battery tester module.
 6. Tap **Connect** to begin the connection process with the battery tester module.
 - The Pairing screen will display during this process.
 7. Once the battery tester module has been paired successfully, the Battery Tester Module menu displays.

BATTERY HEALTH CHECK

The **Battery Health Check** helps to determine the condition of your vehicle's battery by measuring different parameters. The report provides detailed results to help pinpoint problems and find the most suitable solutions. This function can be performed with the battery installed in your vehicle (**In Vehicle Test**) or uninstalled from your vehicle (**Out of Vehicle Test**).

BATTERY STANDARD

No.	Standard	Description	Range
1	CCA	CCA (Cold Cranking Amps) measures the starting performance of the battery at 0°F (-18°C)	100 - 2000
2	CA	CA (Cranking Amps) measures the starting performance of the battery at 32°F (0°C)	100 - 2000
3	JIS	Japan Industrial Standard	26A17 - 245H52
4	EN	Europa Norm	100 - 2000
5	DIN	German Industrial Standard	100 - 1000
6	SAE	Society of Automotive Engineers Standard	100 - 2000
7	IEC	International Electrotechnical Commission Standard	100 - 1000

BATTERY TYPE

No.	Type	Description
1	Flooded	Flooded Lead Acid Battery
2	AGM	Absorbent Glass Mat Battery
3	GEL	Gel Lead Acid Battery

IN VEHICLE TEST

This test is performed with the battery installed in your vehicle and connected to the electrical systems.

- From the Battery Tester Module menu, select **Battery Health Check**.
 - The Test Location screen displays.
- Select **In Vehicle Test**, then tap **Continue**.
- An "instructional" screen displays directing you to prepare the vehicle for the test.
 - Select **YMME** or **VIN**.
 - Select the **Type**, **Standard**, and **Rating** of the vehicle's battery.
 - Connect the test clamps to the battery terminals and ensure that **Battery Clamp Status** shown on screen is **Ready**.



NOTE: YMME or VIN can be entered manually or selected from a list of memorized vehicles. For the VIN, you can also scan by choosing Scan VIN Using Camera.



NOTE: Make sure the connection between the test clamps and the battery terminals is good so that test results are correct.

4. Tap **Start Testing**.

- The screen displays the conditions necessary before starting the test.



NOTE: If the battery voltage is less than 11.8V, the message 'Charge the battery and retest' displays, indicating that the battery needs to be charged before trying again.

5. Prepare the vehicle for the test.

- Set the parking brake.
- Place the transmission in **Park** or **Neutral**.
- Turn the ignition to the **Key ON, Engine OFF** position.
- Place all accessories in the **OFF** position and close all doors.
- For maintenance-type batteries: Check the electrolyte level.
- Inspect the battery for damage or corrosion.



WARNING: Do not perform this test on Smart Alternator, Hybrid or Electric vehicles.

6. Once the vehicle meets all the above conditions, tap **Continue** to proceed.



NOTE: If your battery is wet cell (maintenance-type), you must check its electrolyte level, which is the level of the mixture inside batteries. This mixture transmits electricity between the terminals of a battery.

7. The battery tester module checks for the presence of surface voltage.

- If there is surface voltage, an "instructional" screen displays. Follow the instructions to clear surface voltage.
- If there is no surface voltage, proceed to **step 8**.

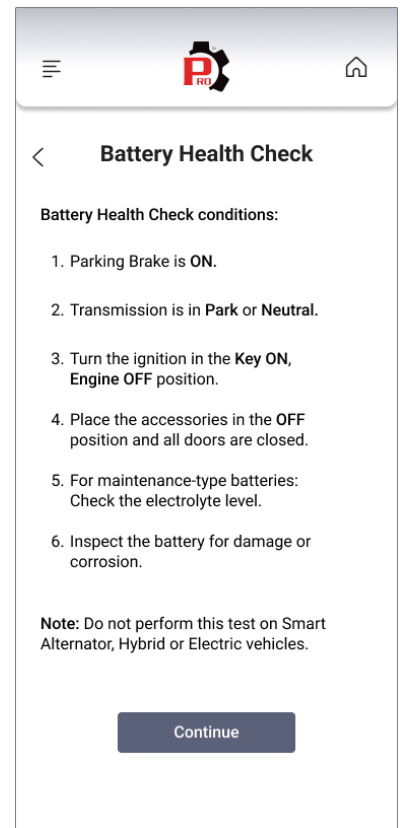
8. The screen displays the requirement to start the engine within 30 seconds while performing the test.

9. Start the vehicle's engine when prompted.

- An "instructional" screen displays requiring you to turn the engine and all vehicle accessories OFF.

10. Tap **Continue** to complete the test. The Test Results screen displays. [\[See page 14\]](#)

11. When you have finished viewing the report, tap the panel to collapse it. Additionally, you can quickly access other tests when you tap other panels.



OUT OF VEHICLE TEST

This test is performed with the battery removed from your vehicle and disconnected from the electrical systems.

1. From the Battery Tester Module menu, select **Battery Health Check**.

- The Test Location screen displays.

2. Select **Out Of Vehicle Test**, then tap **Continue**.



NOTE: If the battery voltage is less than 11.8V, the message 'Charge the battery and retest' displays, indicating that the battery needs to be charged before trying again.

3. An "instructional" screen displays directing you to enter the Battery Information.

- Select the **Type**, **Standard**, and **Rating** of the vehicle's battery.
- Connect the test clamps to the battery terminals and ensure that **Battery Clamp Status** shown on the screen is **Ready**.



NOTE: If your battery is wet cell (maintenance-type), you must check its electrolyte level, which is the level of the mixture inside batteries. This mixture transmits electricity between the terminals of a battery.



NOTE: Make sure the connection between the test clamps and the battery terminals is good so that test results are correct.

4. Tap **Start Testing**.

- The screen displays a progress circle during the test.

5. When the test is completed, the Test Results screen displays. [\[See page 14\]](#)

6. When you have finished viewing the report, tap the panel to collapse it. Additionally, you can quickly access other tests when you tap other panels.

Test Result Explanation

There are four types of result when you perform the **Battery Health Check**: Good Battery, Good - Recharge, Charge - Retest, Replace Battery. The type of result is shown at the beginning of each report, which also includes relevant parameters to help you further understand the condition your battery. The Repair Tip at the end of the test results is provided to advise what you should do with your battery.

- **Good Battery:** Indicates the battery is in good condition. Note that battery tests should be carried out every 90 days.
- **Good - Recharge:** Indicates the battery is in good condition but not fully charged, and you should recharge it.
- **Charge - Retest:** Indicates the battery should be recharged because performing tests in the current battery condition may provide inaccurate results. If you still receive this result after the battery has been fully charged, consider replacing it.

- **Replace Battery:** Indicates the battery should be replaced. However, before replacing, check the connection between the battery terminals and the tester clamps, as it may have affected the test results. Then, perform an **Out of Vehicle Test** on the battery to be sure of the result.

Battery Health Check	Battery Health Check	Battery Health Check	Battery Health Check
Test Results	Test Results	Test Results	Test Results
Battery Health	Battery Health	Battery Health	Battery Health
GOOD BATTERY The battery has passed the test.	GOOD - RECHARGE The battery has passed the test.	CHARGE - RETEST Charge the battery and retest.	REPLACE BATTERY Replace the battery as soon as possible.
State of Health (SOH)	State of Health (SOH)	State of Health (SOH)	State of Health (SOH)
State of Charge (SOC) 94%	State of Charge (SOC) 70%	State of Charge (SOC) 70%	State of Charge (SOC) 70%
Measured 730 CCA	Measured 730 CCA	Measured 550 CCA	Measured 520 CCA
Internal Resistance 4.21 mΩ	Internal Resistance 4.21 mΩ	Internal Resistance 5.5 mΩ	Internal Resistance 5.62 mΩ
Rating 850 CCA	Rating 850 CCA	Rating 850 CCA	Rating 850 CCA
Battery Type Flooded	Battery Type Flooded	Battery Type Flooded	Battery Type Flooded
Battery Voltage 12.55 V	Battery Voltage 12.36 V	Battery Voltage 12.36 V	Battery Voltage 12.36 V
Battery Temperature 41°C	Battery Temperature 41°C	Battery Temperature 41°C	Battery Temperature 41°C
Repair Tip	Repair Tip	Repair Tip	Repair Tip
The battery is in good condition. Please test it again in 90 days.	The battery is in normal condition but isn't fully charged. Please recharge the battery.	To ensure accurate results, fully charge the battery before performing this test. If the "CHARGE - RETEST" status remains after the battery is fully charged, replace the battery as soon as possible.	Replace the battery and retest. In some cases, a poor connection between the battery terminal and the tester clamp may affect test results. After disconnecting the battery cables, conduct an out-of-vehicle test before proceeding with the battery replacement.

STARTER SYSTEM TEST

The **Starter System Test** function is designed to accurately evaluate your vehicle's starter system performance by determining its status through an assessment of the starter's cranking voltage.

1. From the Battery Tester Module menu, select **Starter System Test**.

- The screen displays the conditions necessary before starting the test.



NOTE: If the battery voltage is less than 11.8V, the message 'Charge the battery and retest' displays, indicating that the battery needs to be charged before trying again.

2. Prepare the vehicle for the test:

- Set the parking brake.
- Place the transmission in **Park** or **Neutral**.
- Turn the ignition to the **Key ON, Engine OFF** position.
- Place all accessories in the **OFF** position and close all doors.



NOTE: Connect the test clamps to the battery terminals.

3. Once the vehicle meets all the above conditions, tap **Continue** to proceed.

Starter System Test

Starter System Test conditions:

1. Parking Brake is **ON**.
2. Transmission is in **Park** or **Neutral**.
3. Turn the ignition in the **Key ON, Engine OFF** position.
4. Place the accessories in the **OFF** position and all doors are closed.

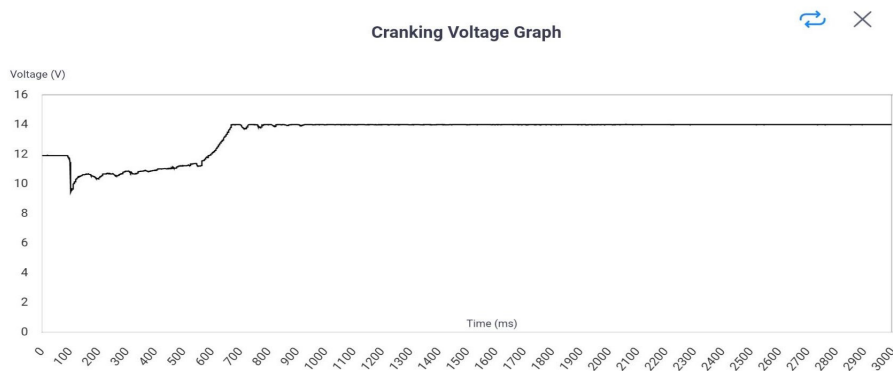
Note: Please connect the test clamps to the battery terminals.

Continue

- The screen displays the requirement to start the engine within 30 seconds while performing the test.
4. Start the vehicle's engine when prompted.
 - An "instructional" screen displays requiring you to turn the engine and all vehicle accessories OFF.
 5. Tap **Continue** to complete the test.
 6. The Starter System Test - Test Results screen displays. The screen shows the starter system status, including drop voltage, cranking voltage, and starting time.
 - **Cranking Normal:** Indicates the starter operation is normal.
 - **Charge Battery:** Indicates the starter voltage is low and the battery is not fully charged.
 - **Low Voltage:** Indicates the starter voltage is too low.
 - **No Start:** Indicates the RSPRO® app does not detect the engine starting in **step 4**.

Starter System Test	Starter System Test	Starter System Test	Starter System Test
Test Results	Test Results	Test Results	Test Results
CRANKING NORMAL Starter operation is normal. Drop Voltage 9.08V Cranking Voltage 10.73V Starting Time 342ms	CHARGE BATTERY The starter voltage is low and the battery is not fully charged. Drop Voltage 6.63V Cranking Voltage 9.52V Starting Time 330ms	LOW VOLTAGE Starter voltage is too low. Drop Voltage 6.0V Cranking Voltage 8.91V Starting Time 330ms	NO START Not detect start engine. Drop Voltage -- V Cranking Voltage -- V Starting Time -- ms
View Graph	View Graph	View Graph	

7. Tap **View Graph** to view a static graph that tracks the voltage changes of the battery during starter cranking.
 - Tap **X** to return to the Test Results screen.



8. When you have finished viewing the report, tap the panel to collapse it. Additionally, you can quickly access other tests when you tap other panels.

CHARGING SYSTEM ANALYSIS

The Charging System Analysis feature is used to perform comprehensive testing of the output voltage and AC ripple voltage produced by the alternator/generator of the vehicle under various usage scenarios. These scenarios include operating with electrical loads or no loads, as well as at high or idle revving conditions.

1. From the Battery Tester Module menu, select **Charging System Analysis**.

- The screen displays the conditions before starting the test.



NOTE: If the battery voltage is less than 11.8V, the message “Charge the battery and retest” displays, indicating that the battery needs to be charged before trying again.

2. Prepare the vehicle for the test:

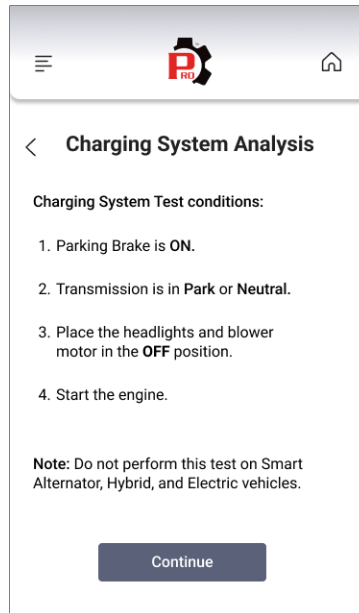


WARNING: Do not perform this test on Smart Alternator, Hybrid or Electric vehicles.



NOTE: Connect the test clamps to the battery terminals.

- Parking brake is **ON**.
- Transmission is in **Park** or **Neutral**.
- Place the headlights and blower motor in the **OFF** position.
- Start the engine.



3. Once the vehicle meets all the above conditions, tap **Continue** to proceed.
 - One or more “instructional” messages display.

4. Follow the on-screen instructions to perform the test. Tap **Continue** to proceed to the next step.
5. When the Charging System Analysis is complete, the Test Results screen displays. The screen shows the charging system voltage and indicates whether the charging system is within acceptable limits.
 - **Good:** Indicates charging voltage is within specification.
 - **Output too high:** Indicates charging voltage exceeds the acceptable limit.
 - **Output too low:** Indicates the alternator is not providing sufficient current to charge the battery and power the vehicle's electrical systems.
 - **Excessive ripple:** Indicates an excessive amount of AC ripple voltage has been detected.
 - **No output:** Indicates no alternator output is detected.

Charging System Analysis	Charging System Analysis	Charging System Analysis	Charging System Analysis	Charging System Analysis
Test Results	Test Results	Test Results	Test Results	Test Results
Charging System Result	Charging System Result	Charging System Result	Charging System Result	Charging System Result
GOOD The charging system is good.	OUTPUT TOO LOW Alternator not providing sufficient current to charge the battery and power the vehicle's system's electrical systems.	OUTPUT TOO HIGH The charging voltage is above the acceptable limit.	EXCESSIVE RIPPLE An excessive amount of AC ripple voltage has been detected.	NO OUTPUT No alternator output detected.
Loaded 14.5 V	Loaded 13.2 V	Loaded 15.5 V	Loaded 14.5 V	Loaded 12.4 V
No Load 14.5 V	No Load 13.2 V	No Load 15.5 V	No Load 14.5 V	No Load 12.4 V
AC Ripple Voltage 4 mV	AC Ripple Voltage 4 mV	AC Ripple Voltage 4 mV	AC Ripple Voltage 150 mV	AC Ripple Voltage 4 mV
Repair Tip	Repair Tip	Repair Tip	Repair Tip	Repair Tip
Charging voltage is within specification.	Inspect the condition of the alternator drive belts and confirm that the alternator rotates while the engine is running. Replace any belts that are worn or slipping, then retest. Check all connections in the charging system, paying special attention to the cable connection to the battery. Clean the cable if necessary, and replace it if it's damaged. Retest after completing these steps.	Make sure the ground connections are secure and there are no loose connections. If everything is properly connected, replace the voltage regulator, or if the alternator has an integrated regulator, replace the entire alternator.	The alternator diodes are defective or damaged, or possible a defective stator.	Examine all charging system connections, with special focus on the cable connection at the battery terminal. Clean the cable as needed. If the cable is damaged, replace it and then retest the system.

6. When you have finished viewing the report, tap the panel to collapse it. Additionally, you can quickly access other tests when you tap other panels.

ELECTRICAL SYSTEM TEST

This function is designed to test the electrical systems of your vehicle by combining three tests: **Battery Health Check**, **Starter System Test**, **Charging System Analysis**. It is useful and time-saving when you want to know the overall condition of the electrical systems.

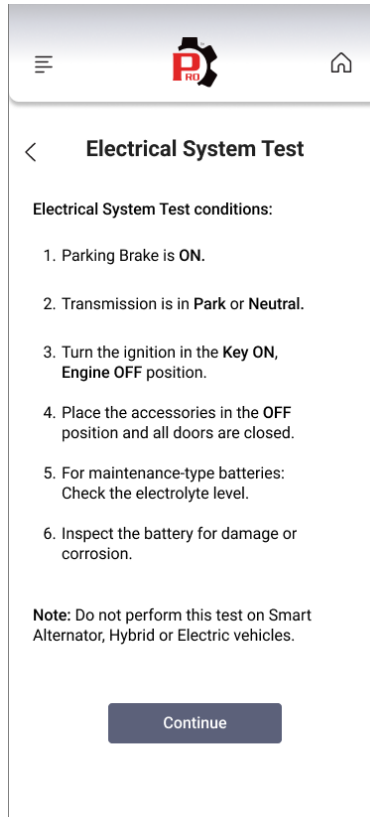
1. From the Battery Tester Module menu, select **Electrical System Test**.
2. An "instructional" screen displays directing you to enter the Battery Information:
 - Select **YMME** or **VIN**.
 - Select the **Type**, **Standard**, and **Rating** of the vehicle's battery.
 - Connect the test clamps to the battery terminals and ensure that **Battery Clamp Status** shown on the screen is **Ready**.



NOTE: YMME or VIN can be entered manually or selected from a list of memorized vehicles. For the VIN, you can also scan by choosing Scan VIN Using Camera.



NOTE: Make sure the connection between the test clamps and the battery terminals is good so that test results are correct.



3. Tap **Start Testing**.

4. Prepare the vehicle for the test:

- Set the parking brake.
- Place the transmission in **Park** or **Neutral**.
- Turn the ignition to the **Key ON, Engine OFF** position.
- Place all accessories in the **OFF** position and close all doors.
- For maintenance-type batteries: Check the electrolyte level.
- Inspect the battery for damage or corrosion.



WARNING: Do not perform this test on Smart Alternator, Hybrid or Electric vehicles.



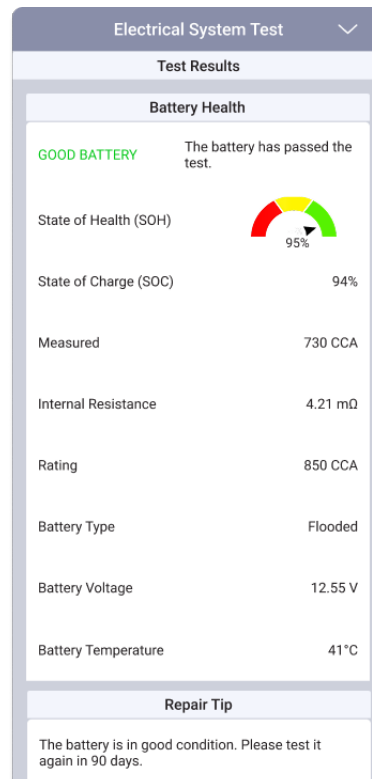
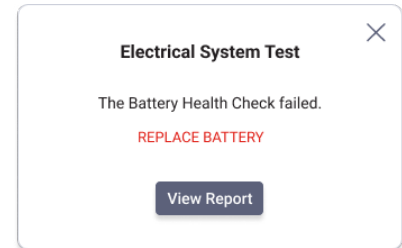
NOTE: If the battery voltage is less than 11.8V, the message “Charge the battery and retest” displays, indicating that the battery needs to be charged before trying again.



NOTE: If your battery is wet cell (maintenance-type), you must check its electrolyte level, which is the level of the mixture inside batteries. This mixture transmits electricity between the terminals of a battery.

5. Once the vehicle meets all the above conditions, tap **Continue** to proceed.

6. The battery tester module checks for the presence of surface voltage.
 - If there is surface voltage, an “instructional” screen displays. Follow the instructions to clear surface voltage.
 - If there is no surface voltage, proceed to **step 7**.
7. The battery tester module automatically proceeds with the Battery Health Check.
 - If the Battery Health Check fails, a “Pop up” screen displays, prompting you to either Replace Battery or Charge - Retest. The Electrical System Test will stop immediately. Tap **View Report** to view the Test Results screen.
 - If the Battery Health Check result is Good Battery or Good – Recharge, proceed to **step 8**.
8. The screen displays the requirement to start the engine within 30 seconds while performing the test.
9. Start the vehicle’s engine when prompted to begin the Starter System Test.
 - One or more “instructional” messages display. Follow the on-screen instructions to perform the test.
10. Once the Starter System Test is completed, tap **Continue** to proceed to the Charging System Analysis.
 - One or more “instructional” messages display. Follow the on-screen instructions to perform the test, then tap **Continue** to scroll to the next step.
11. When all procedures have been completed, an **Electrical System Test** report is generated.



VOLTMETER (12 V)

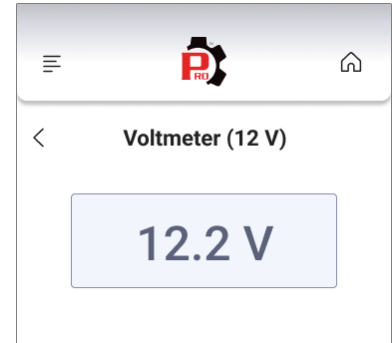
The **Voltmeter (12 V)** feature functions similar to the DC voltage measurement of a digital multimeter (DMM). It continuously measures the voltage of the vehicle's battery.

1. From the Battery Tester Module menu, tap **Voltmeter (12 V)**.
2. The test clamps must be connected to the battery terminals to begin the test.



NOTE: If there are problems with the connection of the test clamps to the battery, an “advisory” message displays, indicating that the connection needs to be rechecked before trying again.

- The measured DC voltage value displays.



ADDITIONAL UTILITIES

VIEW HISTORY REPORTS

The **View Reports** function serves as the memory mode of the app, providing a place to store, print, and review test report files, record workshop information, and maintain a history of tested vehicles.

1. Tap the **My Reports** icon at the top-right of the screen or from the **Side Menu**.

- The screen displays the full history of tested vehicles.

2. To **view** a report, tap the report you wish to view.

- The report displays, showing all information from previous tests.

3. To **send** a report via email, tick the checkbox next to the report and then tap the **Email** icon.

- Enter the email address to which you wish to send the report, then tap the **Send Report** button.

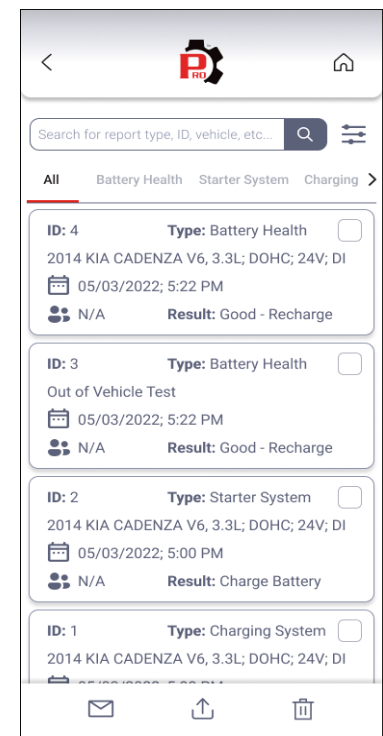
4. To **share** a report via a third-party app, tick the checkbox next to the report and then tap the **Share** icon.

- Select the desired app to share the report.

5. To **remove** a report, tick the checkbox next to the report and then tap the **Remove** icon.

6. To edit customer information in a report:

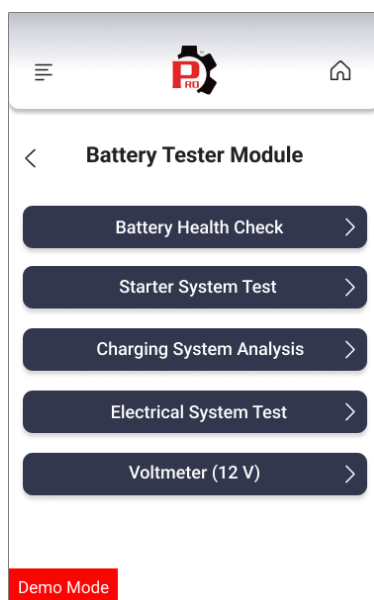
- Tap the desired report to open the detailed view.
- Tap the **Edit** button to modify customer information such as First Name, Last Name, Phone, and Email.
- After entering the information, tap the **Save Changes** button to save.



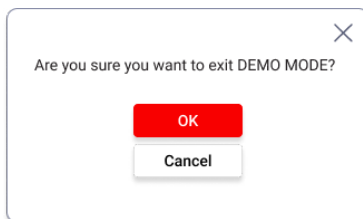
DEMO MODE

The **Demo Mode** function provides step-by-step guidance for all tests without the need to connect to a vehicle, giving you an intuitive and clear experience, especially when using the Battery Test Module for the first time.

1. Tap the  **Tutorials** icon from the  **Side Menu**.
 - The Tutorials List screen displays.
2. Tap **Battery Tester Module**.
 - The screen displays the Battery Tester Module menu available for a simulated vehicle, as if performing the test on a real vehicle.
3. Tap the desired test on the “Demo Mode” screen, and then observe how the tests perform on real vehicles.



4. To exit Demo Mode, tap the **Demo Mode** button displayed in the lower left corner of the screen at any time.
 - A “confirmation” message displays.



5. Tap **OK** to finish the process and return to the Home screen, or tap **Cancel** to continue using Demo Mode.

TOOL FIRMWARE UPDATES

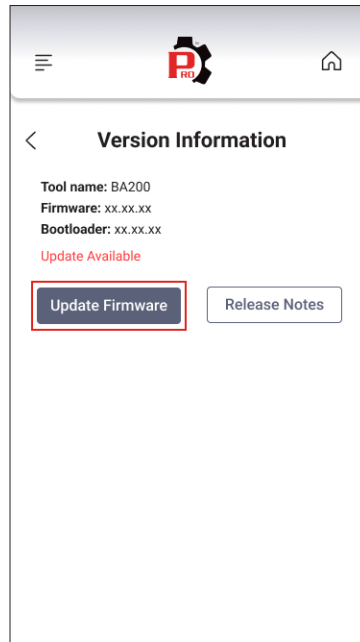
The RSPRO® app automatically checks for available updates as soon as the battery tester module is connected to the app. If the user skips this update step, the update can be checked and performed later by following the steps below.

1. Select **Version Information** on the Tool Connectivity screen.



NOTE: Ensure that the battery tester module is connected to the RSPRO® app.

- A “Checking version” message displays.
2. If an update is available, the RSPRO® app displays the current version and the new version available for update. Proceed to **Step 3**.
 - If no update is available, the message “No Update available” displays.



3. Tap the **Update Firmware** button, then enter the required information such as **RSPRO® Account Password**, **Wi-Fi Network**, and **Wi-Fi Password**. Select **Connect**.
 - The Update Instruction screen displays.
4. Select **Continue** to start the update process for the battery tester module.
5. The message “Update Completed” displays. The battery tester module applies the changes. Select **OK** to return to the Battery Tester Module menu.
 - If an error occurs during the update, a “warning” message displays. Follow the instructions in the message to attempt the update process again.

WARRANTY & CUSTOMER SERVICE

LIMITED WARRANTY

The Manufacturer warrants to the original purchaser that this unit is free of defects in materials and workmanship under normal use and maintenance for a period of one (1) year from the date of original purchase.

If the unit fails within the one (1) year period, it will be repaired or replaced, at the Manufacturer's option, at no charge, when returned prepaid to the Service Center with Proof of Purchase. The sales receipt may be used for this purpose. Installation labor is not covered under this warranty. All replacement parts, whether new or remanufactured, assume as their warranty period only the remaining time of this warranty.

This warranty does not apply to damage caused by improper use, accident, abuse, improper voltage, service, fire, flood, lightning, or other acts of God, or if the product was altered or repaired by anyone other than the Manufacturer's Service Center.

The Manufacturer, under no circumstances shall be liable for any consequential damages for breach of any written warranty of this unit. This warranty gives you specific legal rights, and you may also have rights, which vary from state to state. This manual is copyrighted with all rights reserved. No portion of this document may be copied or reproduced by any means without the express written permission of the Manufacturer. **THIS WARRANTY IS NOT TRANSFERABLE.** For service, send via U.P.S. (if possible) prepaid to Manufacturer. Allow 3-4 weeks for service/repair.

CUSTOMER SERVICE

Our ASE Certified technical staff is here to help if you have any questions or require service. For information on UPDATES and OPTIONAL ACCESSORIES, please contact your local store, distributor or Innova's Service Center.

USA & Canada: (800) 544-4124

Monday through Friday: 6:00 AM to 6:00 PM Pacific Time

All others: (714) 241-6802

Monday through Friday: 6:00 AM to 6:00 PM Pacific Time

Web: <https://pro.repairsolutions.com/>





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