

# **12 VOLT DIGITAL BATTERY ANALYZER**

Stock Number W2998

## **OWNER'S MANUAL**



**FOR YOUR SAFETY,**  
please read these instructions carefully and retain them for future use.

**PT**  
Performance Tool

## DESCRIPTION

Portable, fast, and very simple to use battery starting and charging system analyzer. Digital display indicates the condition of your battery and charging system. Tests 12VDC systems, guiding you through the testing process. Clear and easy to understand results to indicate systems condition. Battery CCAs: 200-1200 Battery Types: LA, AGM, and VRLA Voltage: 7-15VDC Testing Standards: SAE, DIN, EN, IEC, and CA

## DISPLAY ADJUSTMENT

1. Correctly connect the clamps to the vehicle battery.
2. Tester will default to the battery test display.
3. Press right arrow button three times, LCD BRIGHTNESS will display.
4. Press enter button, LCD Brightness in percentage will display.
5. Press the right or left arrow button to adjust the LCD brightness percent.
6. Press enter to save the setting.

## SAFETY RULES

1. Maintain a safe working environment. Keep the work area well lit. Make sure there is adequate surrounding workspace. Always keep the work area free of obstructions, grease, oil, trash, and other debris.
2. Maintain labels and nameplates on this product. These carry important information. If unreadable or missing, contact Performance Tool for a replacement.
3. Be alert for hot engine parts to avoid accidental burns.
4. Avoid accidental fire and/or explosion. Do not smoke near engine fuel and battery components.
5. **⚠WARNING!** The warnings, precautions, and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. The operator must understand that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.
6. Working near lead acid batteries can be dangerous, they produce explosive gases. To reduce risk, follow the manufacture instruction on handling the battery.
7. Avoid the risk of contact, battery fluid is a highly corrosive sulfuric acid and WILL burn.
8. You must be sure the area is well ventilated while the battery is being tested.

## PRIOR TO BATTERY TEST

### Determine Battery Type:

REGULAR LIQUID – Lead Acid

AGM BATTERY – Absorbing Glass Mat

VRLA BATTERY – Vent Regulating Lead Acid

Determine Battery Rating: SAE DIN IEC EN or CA (MCA)

SAE: United States Standard

EN: European Standard

DIN: German Standard

IEC: International electrical science and technology association

CA (MCA): Normal starting current or maritime starting current

### Testing Range: Rating Standard.

SAE: 40 1200CCA

EN: 40 1150CCA

DIN: 25 675CCA

IEC: 30 775CCA

# OPERATING INSTRUCTIONS

## Vehicle Mounted Battery

1. Before testing the battery the ignition needs to be turned off. Be sure everything is off, all accessories and loads. Close all the vehicle doors and the trunk lid.

2. Determine which post of the battery is ground (-) typically a black cable connected to the chassis. This is your negative connection. Now determine which post of the battery is positive (+) typically a red cable connected to the starter. This is your positive connection.

3. Connect the **POSITIVE** (red) clamp from battery tester to **POSITIVE** (+) post of battery first.

4. Connect the **NEGATIVE** (black) clamp away from the battery. Typically a heavy gauge metal part of the frame, vehicle chassis, or engine block is a good choice. Do not connect clamp to carburetor, fuel lines, or sheet metal body parts.

**NOTE:** When disconnecting, remove clamp from vehicle chassis first, then remove the **POSITIVE** (+) clip from the battery post.

5. Once connected to the vehicle, the screen will display **BATTERY TEST**. The battery voltage will also be displayed with   .    **V**. Press the **ENTER** button to go to the next step.

6. The screen will display **BATTERY TYPE**. Press the **ARROW** button to select the battery type: **REGULAR LIQUID**, **AGM BATTERY** or **VRLA/GEL BATTERY**. Press the **ENTER** button to confirm choice.

7. The screen will show **RATING STANDARD**. Press the **ARROW** button to select the battery standard: **SAE DIN IEC EN** or **CA (MCA)** **SAE:** United States Standard **EN:** European Standard **DIN:** German Standard **IEC:** International electrical science and technology association **CA (MCA):** Normal starting current or maritime starting current Press the **ENTER** button to confirm the choice and go to next step.

8. The screen will show **RATING CAPACITY**. Press the **ARROW** button to select the battery capacity of **CCA**. With each press of the button, the value will increase or decrease Press the **ENTER** button to confirm the input value and begin the test.

9. The screen will show the message, **TESTING**. The test result will display after 2 seconds.

10. If the display reads **BATTERY CHARGED** Press the **ARROW** button to select **YES** or **NO**. Press the **ENTER** button to confirm your choice and proceed to the next step. **NOTE:** The Tester will judge the battery status & decide whether to show this Step or not, it doesn't appear every time.

11. When the test is completed, the display shows the actual available **CCA**. Press the **ARROW** button to see the **SOH**, state of health as a percentage.

12. If your test results in and **TEST ERROR**, press **ENTER**, return to step 4 to continue testing or remove the test clamps from the battery terminal to end test.

## Bench Testing Battery

1. Follow all the above steps. Disregard the power off from step 1 above, there will be no load draw.

## TEST RESULTS

The test results are as following:

- A. **GOOD PASS** The battery is good and capable of holding a charge.
- B. **GOOD RECHARGE** The battery is good but needs to be recharged.
- C. **RECHARGE RETEST** Battery is discharged, the battery condition cannot be determined until it is fully charged. Recharge and retest the battery.
- D. **BAD REPLACE** The battery will not hold a charge. It should be replaced immediately.
- E. **TEST ERROR** The tested battery is bigger than **1200CCA**. Or the clamps are not connected properly. Please fully charge the battery and retest after excluding both previous reasons. If reading is the same, the battery should be replaced immediately.

## STARTING SYSTEM TEST

1. Connect the tester to a vehicle battery; tester will be in default **BATTERY TEST** mode.
2. Press the **ARROW** button once to enter **SYSTEM TEST**. The voltage, \_\_. \_\_ V. will appear on the screen.
3. Press the **ENTER** button to go to next step. The screen will show **TURN OFF LOADS START ENGINE**.
4. Turn off all vehicle accessory loads such as lights, air conditioning, and radio. Everything must be off for an accurate test. Start the engine, wait for the tester to detect the cranking voltage.
5. With the engine running and test complete, one of the three results will be displayed along with the actual voltage reading measured.

- A. CRANKING VOLTS NORMAL** The system cranking voltage is in a good range.
- B. CRANKING VOLTS LOW** The cranking voltage is below normal limits; troubleshoot the starter with manufacturers recommended procedure.
- C. CRANKING VOLTS NOT DETECTED** The cranking voltage is not detected, retest. Press the **ENTER** button to go to first step.

## SCREEN DISPLAY

### Battery Test

- GOOD PASS** - Battery is good and capable of holding a charge.
- GOOD RECHARGE** - Battery is good but needs to be recharged.
- CHARGE RETEST** - Battery condition cannot be determined until fully charged.
- BAD REPLACE** - Battery will not hold a charge, it should be replaced.
- TEST ERROR** - Battery is bigger than 1200CCA, or clamps are not connected properly.

### Cold Cranking Voltage Test

- CRANKING VOLTS NORMAL** - System cranking voltage is in a good range.
- CRANKING VOLTS LOW** - Cranking voltage is below normal limit.
- CRANKING VOLTS NOT DETECTED** - Cranking voltage is not detected, retest.

### Charging System Test

- ALT. IDLE VOLTS NORMAL** - System is showing normal output from the alternator.
- ALT. IDLE VOLTS LOW** - Alternator is not providing sufficient current to the battery.
- ALT. IDLE VOLTS HIGH** - Alternator voltage output exceeds normal limits of the regulator.

### Accessory Loads Test

- ALT. LOAD VOLTS NORMAL** - System is showing normal output from the alternator.
- ALT. LOAD VOLTS LOW** - Alternator not providing sufficient current for the systems electrical load.
- ALT. LOAD VOLTS HIGH** - Alternator voltage to the battery exceeds normal limits of the regulator.

## MAINTENANCE

1. When you've finished your test, store the Digital Battery Analyzer in an area where it will not be exposed to inclement weather, corrosion, or any harmful elements.
2. Keep the Battery Tester clean and free of any corrosive fluid.
3. Clean clamps thoroughly to prevent corrosion from battery fluid.
4. Wipe case with a damp rag, never submerge the tool in water or cleaner.