

Traditional Test Method (1/2 CCA Load Test)

A deep discharge test simulating the demands imposed on a battery. Test the ability to deliver a starter motor's cranking current requirements while maintaining a terminal post voltage above a minimum standard.

Apply a load equal to $\frac{1}{2}$ the CCA rating for 15 Seconds and measure the voltage drop. Compare the voltage to a voltage chart.

The battery state-of-charge must be 75% (12.4v) to perform a $\frac{1}{2}$ CCA test. If the battery is below 75% state-of-charge, it must be charge before testing.

New Measurement Techniques: Ohmic Measurement

1. Resistance Measurements (DC method)
2. Impedance Measurements (AC method)
3. Conductance Measurements (AC method)

1. Resistance Measurement

Resistance measurements can be performed by applying a load across the cell/unit and measuring the step change in voltage and current. The Ohmic value is calculated by dividing the change in voltage by the change in current.

2. Impedance Measurements

Impedance Measurements can be performed by passing a current of known frequency and amplitude through the battery and measuring the resultant ac voltage drop across each cell/unit. The ac voltage measurement is taken between the positive and negative terminals of individual cells or the smallest group of cells possible. Compute the resultant impedance by Ohm's law.

3. Conductance measurements

Conductance measurements can be performed by applying a voltage of known frequency and amplitude across a cell/unit and observing the ac current that flows in response to it. The conductance is the ratio of the current component that is in-phase with the ac voltage, to the amplitude of the ac voltage producing it.

The Benefit of Conductance Measurement Test Method

Conductance correlates directly to battery capacity

Passive test method is safe & repeatable

Never discharges the battery

Can Test discharged batteries

Provides a unique indication of battery

Provides a unique indication of state of charge