

How to measure the internal resistance of the base station battery





Overview

As illustrated in the figure, the AC four-terminal method, which connects an AC voltmeter to the battery's positive and negative electrodes, lets you measure the battery's internal resistance accurately while minimizing the effects of measurement cable resistance and contact resistance. What is battery internal resistance?

Battery internal resistance is a critical performance parameter that determines the runtime, power delivery, current capabilities, efficiency and health of a battery. Measuring the internal resistance allows you to analyze battery characteristics and performance for design optimization, production testing or periodic maintenance.

How to measure internal resistance of a battery?

One can mention the IEC 61960 standard or PNGV (Partnership for a New Generation of Vehicles) procedure for example. Measurement methods for the internal resistance of batteries can be divided up into two categories: DC (Direct Current) techniques and AC (Alternating Current) techniques.

Why is internal resistance measurement important for lead-acid batteries?

With lead-acid batteries, monitoring internal resistance helps predict maintenance needs and detect sulfation or plate degradation. Across all battery types, internal resistance measurement ensures safe operation, extends lifespan, and supports optimal performance in both consumer and industrial applications.

How do you measure a battery voltage without a load?

Measuring a battery voltage without any load with a voltmeter starts the process of calculating its internal resistance. Then, connect a load with known resistance across the battery and track the voltage once more. Having gotten these readings, you should do some paperwork. There are several ways to measure a battery's internal resistance.



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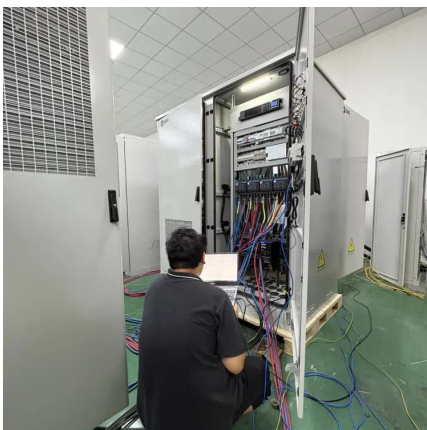
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