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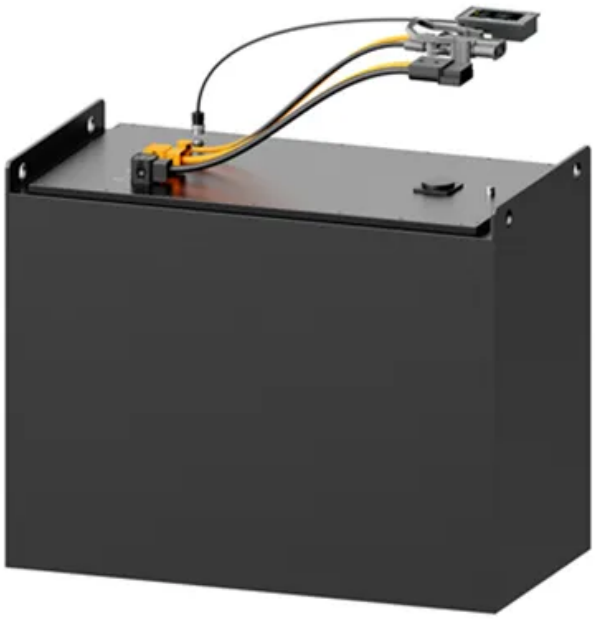
Research on battery cabinet charging and discharging control technology



Overview

Which control method is used for charging and discharging lead-acid batteries?

The most common control method for charging and discharging lead-acid batteries in renewable energy systems with battery energy storage is that of CC–CV. However, this control method requires a long time to charge the battery.

How efficient is the charge control method?

The charge control method's efficiency depends on several factors, including the amount of current used for charging, the level of oscillations in the charging current, the charging voltage levels, the charging time, and temperature fluctuations during the charging process [27].

How to reduce battery charging time?

Different control methods have been developed with the goal of protecting the battery and extending its life expectancy, being the most used the constant current-constant voltage. However, several studies show that charging time can be reduced by using Fuzzy Logic Control or Model Predictive Control.

What are the disadvantages of a battery control method?

While a particular battery control method may have its advantages, it also has significant drawbacks. It requires a long time to charge the battery, leading to temperature rises that can cause irreversible damage. Additionally, during the charging and discharging process, this method leaves some aspects uncontrolled.

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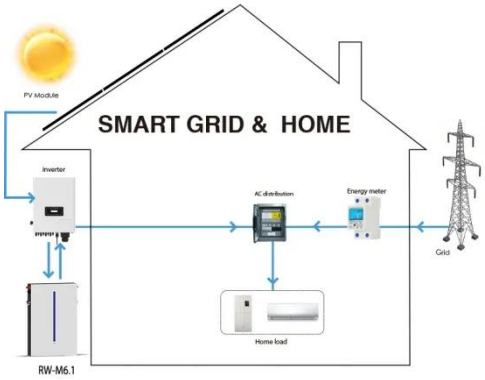

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