

Reconfigurable Energy Storage System





Overview

Reconfigurable battery systems are advanced energy storage solutions that can dynamically adjust their configuration voltage, capacity, and output in real time. Is there a fast battery balance method for a modular-reconfigurable Bess?

A fast battery balance method for a modular-reconfigurable BESS has been proposed and explained in this paper. First, a novel reconfigurable BESS topology offering reconfiguration flexibility and fault tolerance was introduced. Further, a battery balance method for the reconfigurable BESS and its fast balance algorithm were proposed and explained.

What is a reconfigurable battery-level power switch?

Benefiting from battery-level power switch implementation, reconfigurable BESSs allow for active control at battery level, offering the potential of scheduling the individual battery operation. As a result, the battery imbalance issue can be alleviated without an extra equalizer .

What is a reconfigurable topology?

Unlike conventional BESSs, the reconfigurable topology is capable to change into different configurations, e.g. series connection, parallel connection, and series-parallel connection. The last one employs both connection methods hierarchically to obtain different terminal voltages.

Does static stress and conduction loss matter in reconfigurable Bess?

It is noticed that switching operations in reconfigurable BESS only occur in system reconfiguration. In other words, rather than stress and loss during the switching operation, the static stages take domination. As a result, the analysis of static stress and conduction loss would make more sense. 4.1. Static switches stress analysis



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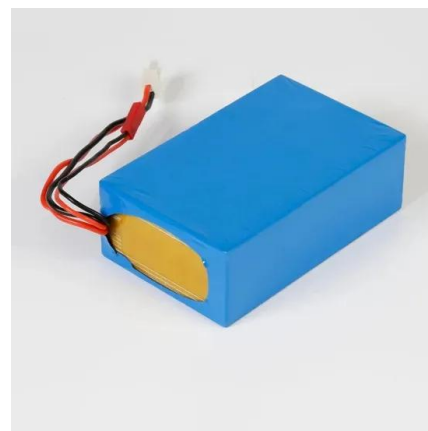
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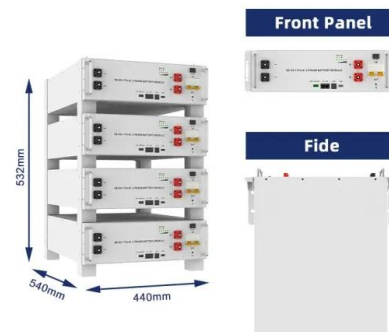
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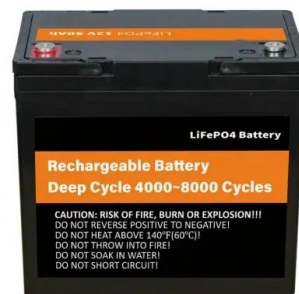
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