

BMS for fast charging and battery protection





Overview

Why do you need a battery management system (BMS)?

Fast charging relies heavily on a BMS to maintain the procedure's efficiency and safety. During charging, the BMS keeps a close eye on battery characteristics like the voltage, current, and temperature. To protect the battery, the BMS can change the charging rate or halt the operation entirely if any of these metrics go above their safe limits.

Why does the BMS stop charging?

The BMS will stop charging to prevent overcharging. If the voltage drops below 2.5V, the battery could be damaged and have reduced capacity. The BMS will stop discharging to protect the battery from over-discharging. 2. State of Charge (SOC) Calculation (Lithium-Ion Battery Example).

Why is BMS important for EVs?

Recent advancements in BMS The fast progression of battery technology, especially for EVs, has required substantial progress in BMS. These technological developments are essential for maximizing battery efficiency, guaranteeing safety, and enhancing battery lifespan .

How does a BMS charge a battery?

An efficient charging strategy that a BMS can use is constant current-constant voltage (CC-CV), in which the charging current is maintained until the battery reaches a particular voltage, at which point the voltage is maintained constant and the current is gradually decreased.



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