

CASE STUDY: LITHIUM-ION BATTERY RACK FOR STATIONARY APPLICATIONS

POWER4FUTURE™ produces Li-ion Battery Modules, Packs and Systems, including Battery Management Systems (BMS). In this case study, POWER4FUTURE™ internally developed this BMS with the support of Bluewind and utilizing STMicroelectronics Microcontrollers. The BMS plays a vital role in the POWER4FUTURE™ lithium-ion battery systems, by monitoring every cell's parameters useful for the whole system safety. Its advanced software and specialized electronic control boards enhance the overall safety and performance of the system.

WHAT IS IT & HOW IT WORKS?

- It is typically found in applications such as electric vehicles, hybrid electric vehicles, grid energy storage systems, and portable electronic devices.
- It ensures safe operating conditions and determines the battery's conditions (SoX).
- This BMS plays a crucial role in optimizing the performance, safety, and longevity of rechargeable batteries in various applications.
- Safety functions are designed by Bluewind according to IEC60730 and IEC61508 standards.



Example of Lithium-ion Battery Module produced POWER4FUTURE™

BLUEWIND VALUE

In this project, Bluewind has taken on the following key roles:

- Coordinating and designing functional safety through analysis and implementation.
- Defining software safety requirements and architecture.
- Actively developing and validating the safety software components.



SAFETY

Compliance to safety standards.



LONGEVITY

Enhanced battery longevity.



OPTIMIZATION

Optimized battery performance.

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