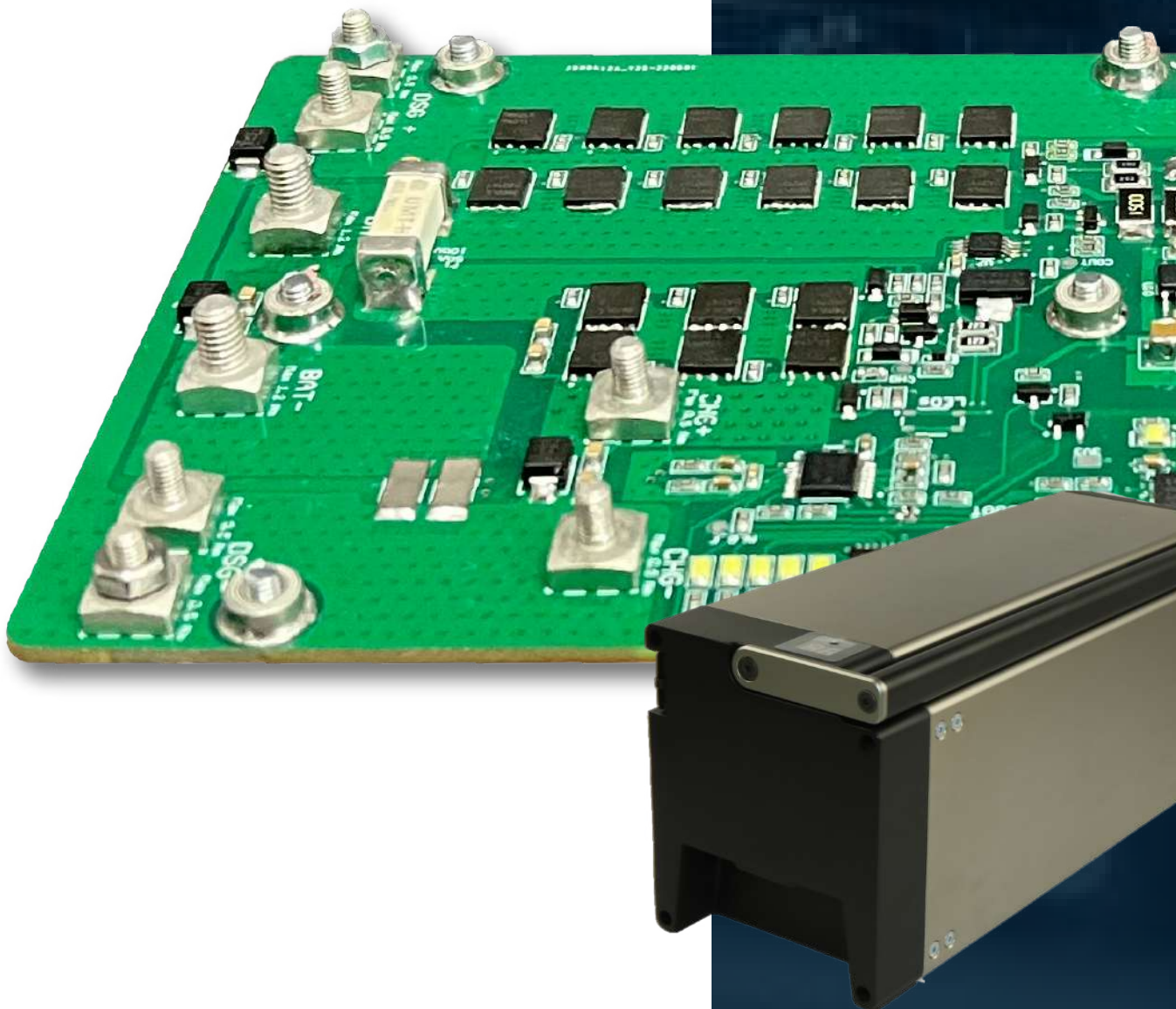


Customizable BMS Solutions for Your Specific Needs

Where Innovation
Meets Customization



ABOUT US

PEM Motion is open to customization and actively collaborate with customers to achieve their business objectives.



For more than 10 years, PEM Motion have actively participated in the **development of battery systems for mobility applications**; therefore, we have gathered valuable experience which is reflected with the introduction of our highly modular and scalable BMS platform.



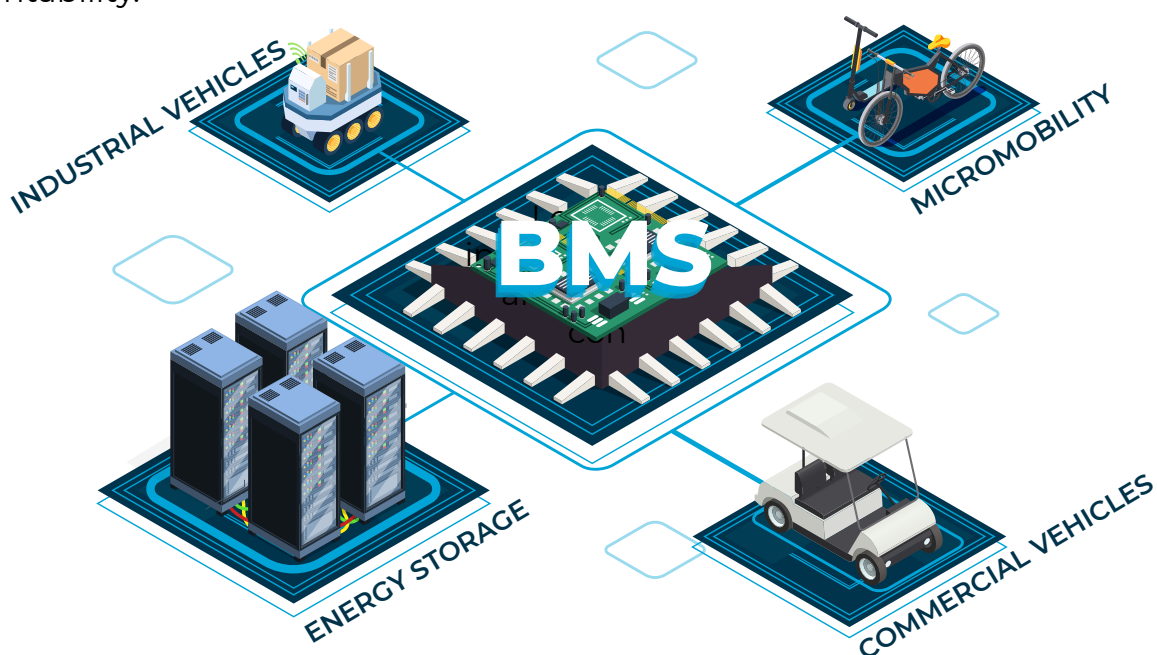
We understand that **there is no such thing as a universal BMS**, and every project we have participated in has required a different BMS, varying in aspects such as architecture, power, interface, form factor, cell chemistry compatibility, or communication protocols.



Our approach is to offer a highly configurable solution while considering very **competitive costs and meeting time-to-market constraints**.

TARGET INDUSTRIES

BMS Solutions designed to meet the needs of a variety of industries, our customizable solutions can help you achieve maximum performance and profitability.



SCALABLE AND MODULAR ARCHITECTURE

With our BMS Battery Management Systems, you're in control of your power needs!

Every application is unique, which is why we offer customizable solutions tailored to your specific requirements. Whether you need a 24V or 96V system, our BMS can be configured to suit your power demands.

You can choose from different features to create your ideal configuration, ensuring that you get the most efficient and effective battery management for your application.

FEATURES OVERVIEW

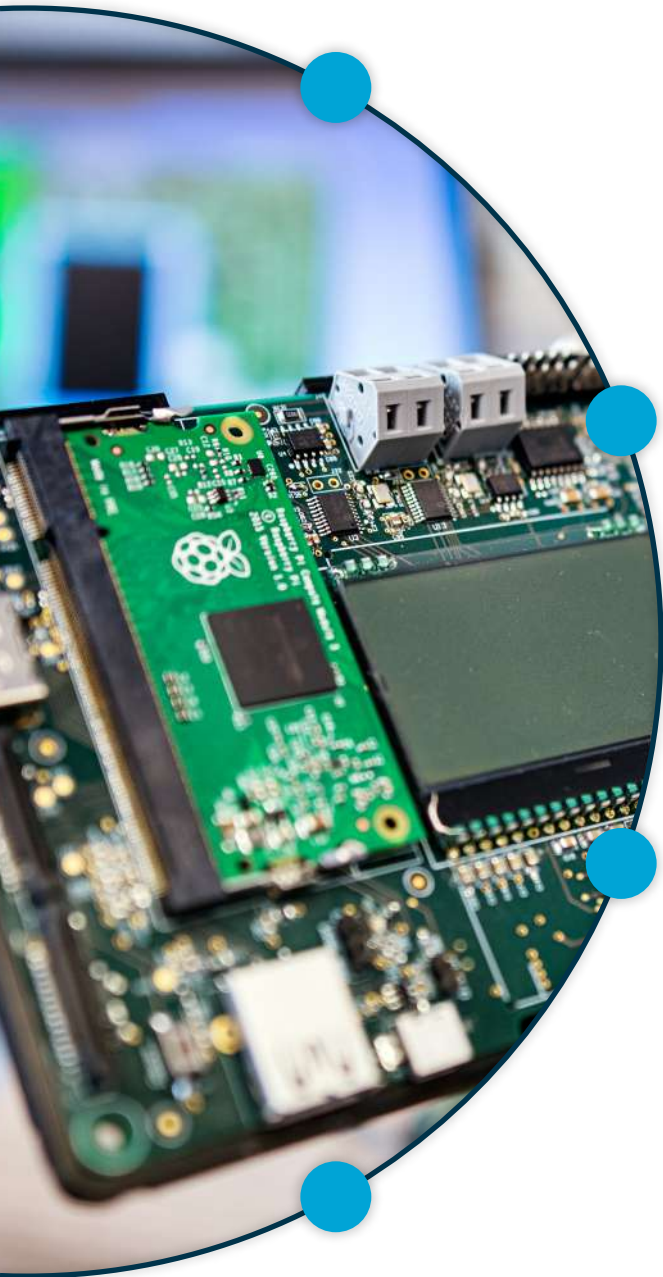
Voltage Level	24 V	36 V	48 V	72 V	96 V
Architecture	Centralized	Distributed			
Power Path	Common path	Segregated path	Pre-charge path		
Switching Device	Electro-mechanical (Relay/ contactor)	Solid state (MOSFETs)			
Balancing Mode	Voltage	SOC/SOH based			
Interface	CAN (MAX 2)	UART	I2C	Numeric display	Programmable GPIOs
Protections	Voltage (over/under)	Current (over)	Temperature (over/under)	Short circuit	Open wire

GENERAL SPECIFICATIONS

- + Compatible with traditional Li-Ion cell chemistries such as NMC, NCA, LCO, and Lithium Iron Phosphate (LFP) cells
- + Incorporates a safety MCU for added protection
- + Features a high accuracy analog front-end and protector with configurable protection levels
- + Tailored current capacity by number of MOSFETs to optimize performance and power management

PROTECTION FUNCTIONS

Our BMS come with advanced protection features to safeguard your battery and ensure long-lasting performance.



VOLTAGE

- + Overvoltage and undervoltage
- + Two protection zones (soft protection with warning message; hard protection with battery shutdown)
- + Configurable recovery configuration (autonomous based on time or hysteresis voltage; or host controlled)
- + Independent levels for charging and discharging scenarios

CURRENT

- + Three overcurrent limits with unique delay configuration for each
- + Configurable recovery configuration (autonomous based on time; or host controlled)
- + Independent levels for charging and discharging scenarios
- + Independent short circuit protection

TEMPERATURE

- + Two protection zones (soft protection with warning message; hard protection with battery shutdown)
- + Independent levels for charging and discharging scenarios
- + Six inputs for temperature sensors

ADDITIONAL PROTECTION FUNCTIONS

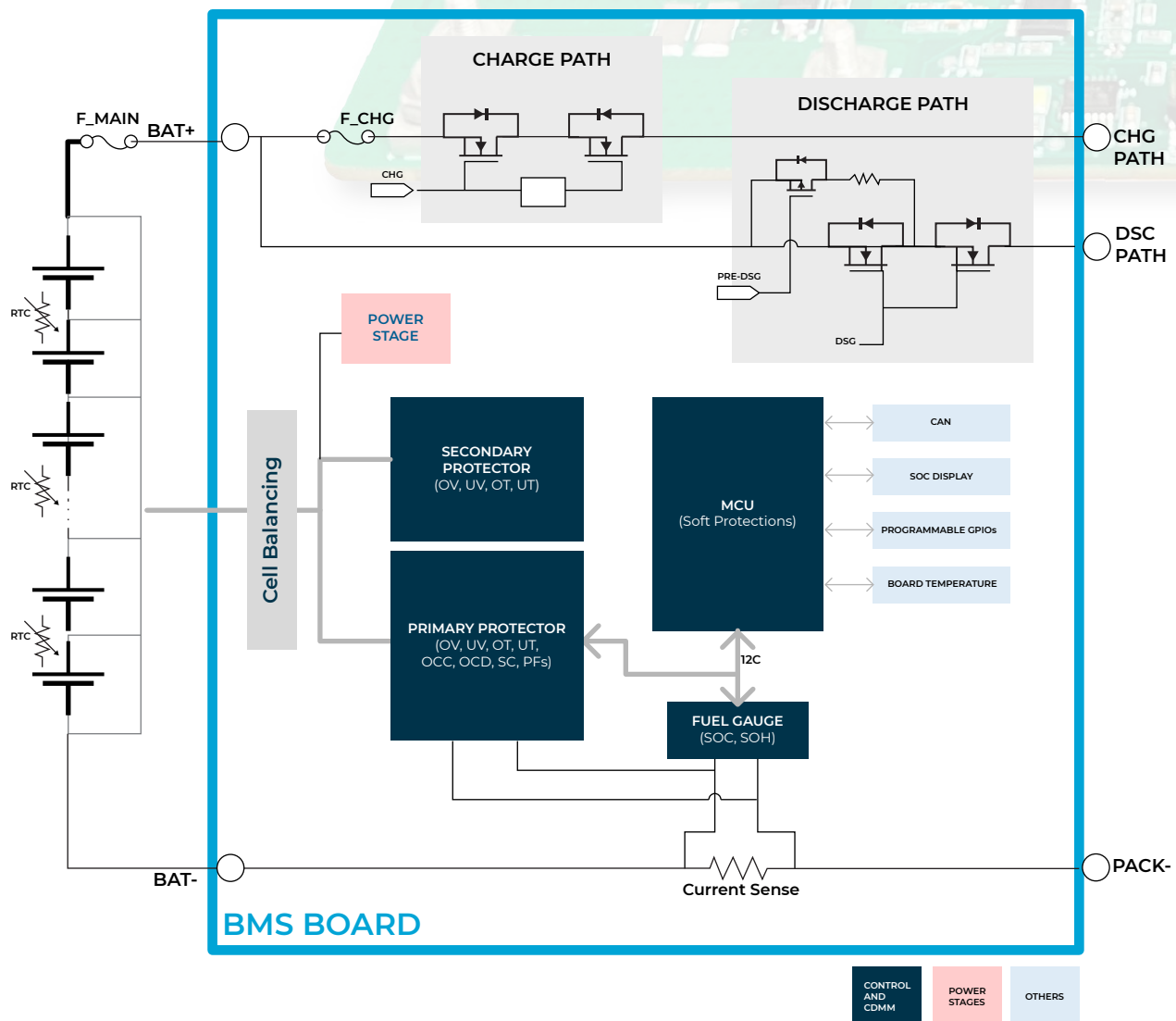
- + Open cell wire detection
- + Fuse blown detection

OUR OFF-THE-SHELF STANDARD CONFIGURATION

Looking for a reliable and easy-to-use BMS solution? Our off-the-shelf BMS with a standard configuration is a perfect example of what you need.

This BMS is designed with a **48V system** in mind, featuring centralized and segregated path management, pre-charge paths, solid-state switching devices, and communication via voltage and CAN. The numeric display provides real-time information on battery status, while all necessary protections are included to ensure safe operation. With this standard configuration, you can get a BMS that's ready to use right out of the box, without any customization required.

48V BMS BLOCK DIAGRAM



PURCHASING OPTIONS & OTHER SERVICES

At PEM Motion, we're all about providing you with options.

In addition to our off-the-shelf BMS solution, we also offer the option to purchase our **BMS together with the battery**, ensuring a seamless integration and optimal performance.

Alternatively, if you're looking for more **specialized services**, our team of experts is available to help you design a custom BMS solution that perfectly fits your unique needs.



CERTIFICATIONS

Our BMS systems are built to the highest standards of quality and safety, and have undergone rigorous testing and certification processes.

CE Certification (ongoing)

- +Machine directive
- +EMC directive
- +ROHS directive

UL certifications (ongoing)

- +UL 991
- +UL 1994
- +UL 2271 (system level)

Whether you're looking for an off-the-shelf solution or a custom-tailored option, PEM Motion has you covered!

GET IN CONTACT

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