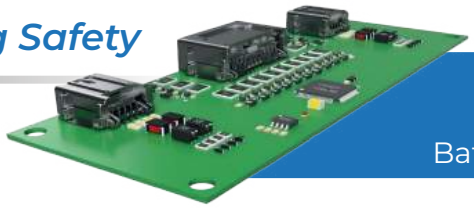
Ottomotive Electronic Cards: Empowering Safe, Smart & Scalable EV Systems

Powering Control, Ensuring Safety



BMS
Battery Management System

Design Philosophy:

• System Integration – Designed to operate seamlessly across all layers, from battery management to data acquisition.

• High Reliability – Ensures stable, safe, and long-lasting performance in critical automotive applications.

• Modular & Scalable Architecture – Flexible structure adaptable to different vehicle types and system needs.

• Data & Control Oriented – Comprehensive monitoring and precise control enabled by advanced units like DAU and BCU.

• Energy Management & Protection – Efficiently manages battery systems while ensuring pre-charge and charge safety.

• Automotive-Grade Quality – Built with robust, industry-standard components for durability and trust.

Key Features:

• BCU (Battery Control Unit): Core coordination of battery systems.

• BMS-MU / BMS-SU: Master and slave units for safety, communication, and monitoring.

• BMU (Battery Monitoring Unit): Precise measurement of cell parameters.

• DAU (Data Acquisition Unit): Real-time, high-accuracy data collection.

• HVCU (High Voltage Control Unit): Safe management of high-voltage operations.

• PCU (Pre-Charge Control Unit): Controlled and secure power-up sequence.

• VCCU (Vehicle Charge Control Unit): Efficient management of charging processes.

• Modular Integration: Easy to integrate with different system architectures.

• Automotive Standards Compliance: Designed for reliability in demanding environments.

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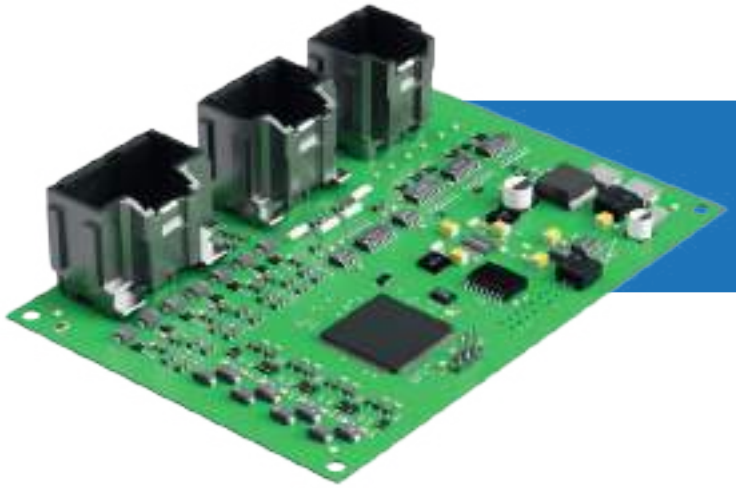

BCU

Battery Control Unit

Specification	
Operating Voltage	12–24 V
Communication	2 x CAN SAE J1939 250K/500K -1 x RS 485
Digital Outputs	6 x HS Output
Digital Inputs	8 x HS/LS Input
Analog Inputs Voltage / Resistor / NTC	8 x Analog Input
Operation Temperature	-40°C / +80°C

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HVCU

High Voltage Control Unit

Specification

Operating Voltage	12–24 V
Standards	DIN 70121 – ISO 15118
Communication Port	CAN SAE J1939 250K/500K
Communication with Charger	Powerline Communication
Digital Outputs	8 x HS Output
Digital Inputs	2 x HS Input / 2 x LS Input
Analog Inputs	2 x Voltage Input / 1 x Resistor Input / 1 x NTC Input
Plug Lock Output	2 x HB Output
Operation Temperature	-40°C / +80°C
Function	The High Voltage Control Unit (HVCU) is responsible for managing the high-voltage contactors in electric vehicles, as required by the high-voltage power distribution unit. It consolidates the control of the precharge circuit, insulation monitoring, and general I/O logic into a unified architecture.

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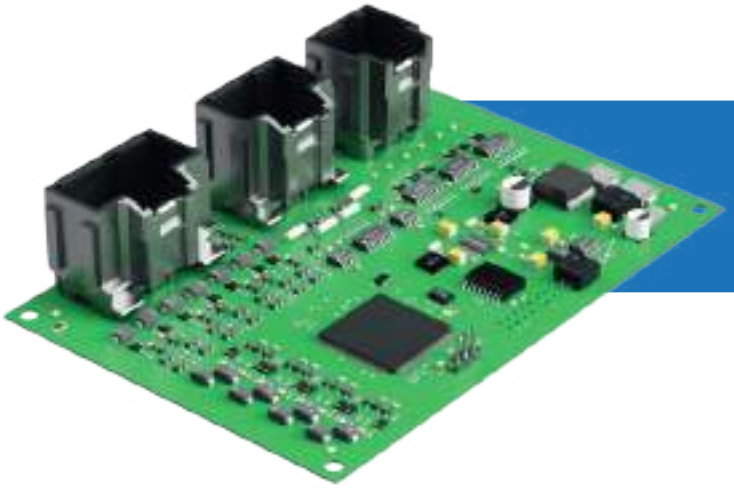

BCU

Battery Control Unit

Specification

Operating Voltage	12–24 V
Communication with HVCU	CAN SAE J1939 250K/500K
Communication with BMU	RS 485
Digital Outputs	6 x HS Output
Digital Inputs	3 x HS Input / 2 x LS Input / 3 x Address Input
Analog Inputs	4 x Voltage Input / 3 x Resistor Input / 1 x NTC Input
Operating Temperature	-40°C / +80°C
Function	The High Voltage Control Unit (HVCU) is responsible for managing the high-voltage contactors in electric vehicles, as required by the high-voltage power distribution unit. It consolidates the control of the precharge circuit, insulation monitoring, and general I/O logic into a unified architecture.

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BMS-MU

Battery Management System
Master Unit

Specification

Operating Voltage	12–24 V
Communication with HVCU	CAN SAE J1939 250K/500K
Communication with BMS-SU	Daisy Chain
Digital Outputs	6 x HS Output
Digital Inputs	3 x HS Input / 2 x LS Input / 3 x Address Input
BMS I/O	16 x Balance Output / 16 x Voltage Input / 4 x NTC Input
Operating Temperature	-40°C / +80°C
Function	The BMS Master Unit (BMS-MU) coordinates communication with all monitoring and slave units within a battery pack. It includes integrated monitoring capabilities and can manage up to 16 series-connected cells without additional subunits. Designed for master-level operation, it may also be configured to act as a subordinate unit in system-level integration.

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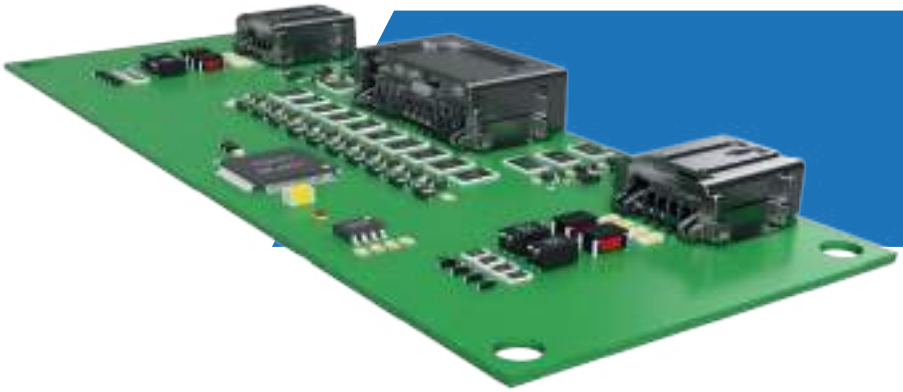

BMS-SU

Battery Management System
Slave Unit

Specification

Operating Voltage	Supply by cell voltage
Communication with BMS-MU	Daisy Chain
Communication with BMS-SU	Daisy Chain
BMS I/O	16 x Balance Output / 16 x Voltage Input / 4 x NTC Input
Operating Temperature	-40°C / +80°C
Function	The BMS Slave Unit (BMS-SU) extends the system's capability for high cell counts by connecting to the BMS-MU. It supports monitoring and balancing for up to 256 series-connected cells when used in a multi-unit configuration. Each unit performs voltage and temperature measurements and includes balancing circuits for cell equalization.

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VCCU

Vehicle Charge Control Unit

Specification

Operating Voltage	12V / 24V (9 … 36V)
Standards	DIN 70121 – ISO 15118
Communication Port	CAN SAE J1939 250K/500K
Communication with Charger	Powerline Communication
Digital Outputs	2 x HS Output (Spare) / 1 x HS Output
Digital Inputs	1 x HS/LS Input (Spare) / 1 x LS Input (Spare) / 4 x HS/LS Input
Analog Inputs	2 x Voltage Input / 2 x NTC Input
Plug Lock Output	2 x HB Output
Operation Temperature	-40°C / +80°C
Function	The Vehicle Charge Control Unit (VCCU) manages the control and communication between the electric vehicle and external charging stations. It interprets Control Pilot (CP) and Proximity Pilot (PP) signals, enabling safe and standardized charging operations. The unit is designed in compliance with DIN 70121 and ISO 15118 standards to ensure interoperability with modern charging infrastructure.

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