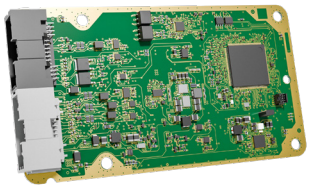
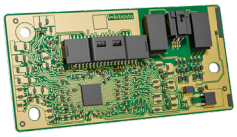
Webasto
Feel the Drive

Batteriemanagementsystem Gen 2.0

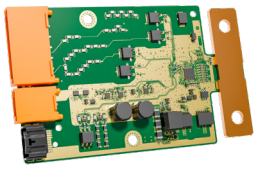
An intelligent platform approach



Battery Management Controller (BMC)



Cell Monitoring Board (CMB)



Current Voltage Measurement (CVM)

The Webasto Battery Management System (BMS) is engineered to meet the stringent demands of the commercial and high-performance vehicle markets. Originally developed for Webasto Battery Systems, this BMS has evolved into a versatile standalone product suitable for various customer applications, focussing on multipack systems.

Developed, certified, and rigorously tested in Germany, the Webasto BMS is designed to deliver high reliability and performance. Additionally, it offers flexibility for adaptation to specific customer requirements, making it suitable for diverse and demanding applications. The depth of added value makes Webasto a reliable system partner that stands by the customer's side from development through production to integration and commissioning.

All advantages at a glance:

- Cutting-edge multipack handling with distributed intelligence on pack level without dedicated master
- Modular plattform approach
- Flexible CAN communication based on J1939
- Developed and tested according to established automotive safety and quality standards
- Simple and fast integration and adaption

Standards & norms

- **Functional safety:** ISO 26262, ASIL C (ASIL D on demand)
- **Cyber security:** ISO 21434, HSM
- **Vehicle communication:** CAN-Bus based on J1939
- **EMC:** ECE-R10, ISO 10605, ISO 13766, GWT A D05-02-2022:12, ISO 114521, ISO 7637, CISPR 25
- **Flashing:** over UDS
- **Environmental tests:** ISO 16750, ISO 19014-3
- **Sustainability:** Battery Regulation 2023/1542

Technical specifications

- Enables high power outputs scalable in voltage and current demands
- Within multipack system, each battery pack can take over speaker role
- Diagnosis, contactor controlling and communication (BMC)
- High voltage, current and isolation measurement (CVM)
- Cell voltage and temperature measurement and cell voltage balancing execution (CMB

Truck | Premium car | Light vehicles | Bus | Special vehicle | Off-Highway | Agricultural | Airport | Material handling

Interfaces and general specifications**

	BMS Gen 2.0
Housing	On demand
Operating temperature	–40 °C to +85 °C
Voltage and current measurement	1000 V (1500 V on request) 2600 A
Connector	Standard automotive low voltage connectors
Power supply	12 V / 24 V (48 V on request)
CPU	32-bit automotive safety multicore MCU running at 300 MHz with 6 MB internal program memory
Autosar	4.2.2
Calibration tool	Calibration data management XCP, UDS or data sett
Hardware interfaces	CI30, CI30c, CI15, HV interlock, PWM, adressing pins, 4x digital / 4x analog inputs, up to 5 HV-contactors with onboard economizer
Communication	4x CAN FD (1x wake-up and partial networking) 2x ADI IsoSPI, 1x LIN
Enhanced function	Wake up: CL 15, network management according AUTOSAR, various sensor & load supplies up to 1 A
Cell monitoring board	≤16x or ≤24x cells supported per CMB, passive balancing, 4x external & 3x internal temperature sensors

**Further specifications upon request.

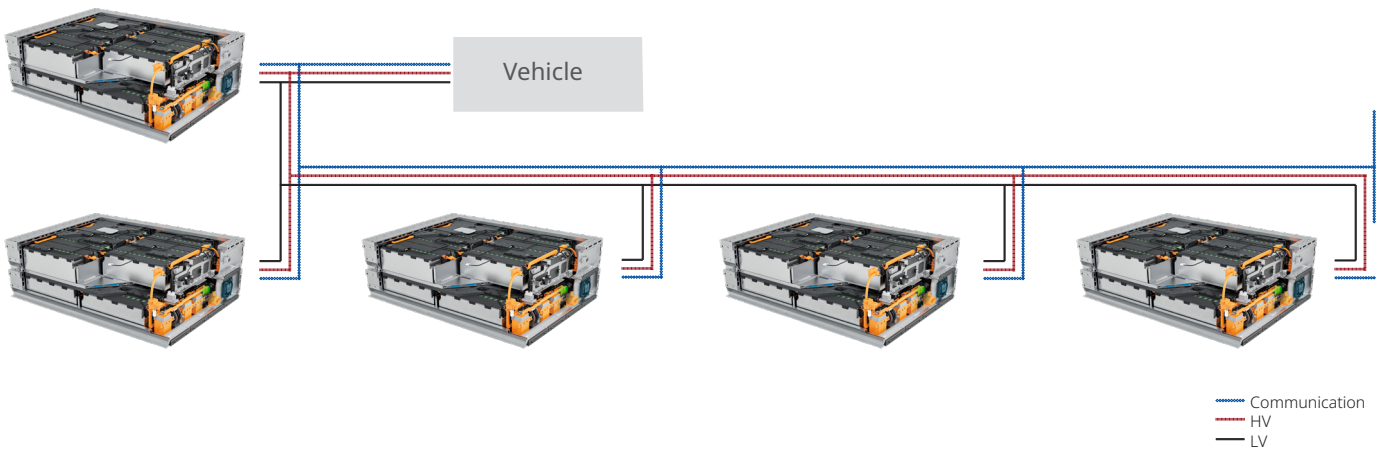
Functional specifications**

	BMS Gen 2.0
Contactor control monitoring	HV+/ – and precharge contactor with single-coil connector, stuck detection, aging monitoring
Current measurement	Shunt resistor based measurement with +– 2600 A range and <1% accuracy
Pyroswitch operation	Triggered via CVM/ BMC
Thermal runaway detection	Via CO2 sensor, H2 sensor or GB standard
Monitoring	Temperature, isolation, high voltage, cell voltage, crash signall
Precharge	Multipack precharge
Battery status & limits	Advanced SoX algorithms
Thermal management	Thermal management algorithm and interfacet
HVIL	Voltage on current base
OBD2	On demand
Software update	Via CAN, FOTA capable

Scalable multipack architecture:

- Single pack & multipack operation
- Each pack can take over speaker role
- Advanced limp home concept

System architecture example: scalable up to 20 packs



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