ENERGY STORAGE SYSTEM

BORDLINE® Battery Module
For high performance applications

BORDLINE® BPW (battery power water-cooled) is a high-power Lithium-ion battery module designed for reliable operation in harsh environments. It is suitable for use as a traction or as an auxiliary battery and designed for use in road and railway vehicles.

Applications
- Railway rolling stock
- Electrically propelled road vehicles
  - eBus
  - eTrucks
- Off-road vehicles
  - Mining trucks
  - Utility vehicles

Key characteristics
- High level of inherent safety
- Very high cycle life
- High power density
- High energy efficiency
- Excellent fast charging capability
- Precise and stable cell connection with low contact resistance (laser welding)
- Efficient liquid cooling

Modularity and scalability
The modular battery design allows easy scalability in terms of installed energy and allows mechanical integration either on the roof, in the machine room or underfloor of the vehicle.
Module characteristics

System arrangement
Up to sixteen battery modules can be connected in series to form a battery string and multiple strings can be connected in parallel. The series connection of modules are realized with insulated quick coupling power connectors and with a wired serial bus between the modules and the master control unit.

Technical data
- Cell technology: Lithium-ion (LTO)
- Cell format: Prismatic (metal can)
- Nominal voltage: 55.2 V
- Configuration: 2p24s
- Typical energy: 2.54 kWh
- Charging current, 25°C: 184 A (4C), 368 A (8C) for 30s
- Discharging current, 25°C: 184 A (4C), 368 A (8C) for 30s
- Cell monitoring and balancing: integrated
- Master BMS: external
- Typical cycle life (80% DoD), 25°C: > 20’000 cycles
- Specific energy: 127 Wh/l
- Energy density: 77 Wh/kg
- Power interface: BCC-S10
- Test voltage: 2.8 kVac / 10s
- Thermal management: liquid cooled
- Operating temperature range: -30°C to +45°C
- Transport regulation: UN 38.3
- Drop test: IEC 62619
- Onboard Lithium-ion traction batteries: IEC 62928
- Shock and vibration: IEC 61373
- Electrically propelled road vehicles: ISO 12405
- Wheeled vehicles applications: ECE R100

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