BATTERY CHARGER

BORDLINE® M8 AC_65V

For high-speed trains

The BORDLINE® M8 AC battery charger is a compact, rugged unit to generate supply voltage for rail vehicles.

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BORDLINE® M8 AC_65V for rolling stock applications

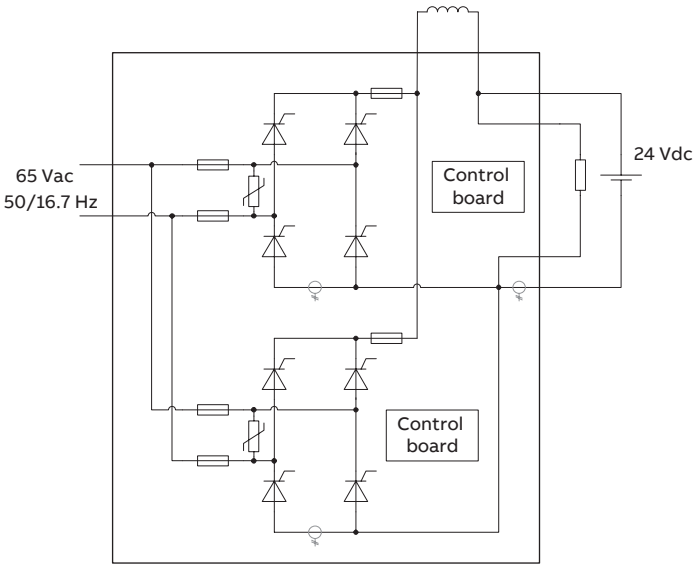
System overview
The BORDLINE® M8 AC converter is based on thyristor technology.

The system is composed by:
- Full controlled rectifier thyristor bridge
- EMI filter
- Control/Communication unit

Functionality
The BORDLINE® M8 AC battery charger feeds from the heating transformer inside the cab car (65 Vac 1ph 50 Hz, 65 Vac 1ph 16,7 Hz) to generate a 24 Vdc voltage to charge the batteries and supply the DC loads of the vehicle. The battery charger is based on a single-phase full controlled rectifier thyristor bridge without galvanic insulation.
The battery charger is made by two modules to guarantee warm redundancy. Each battery charger module provides dead battery start functionality.
A battery temperature compensation is implemented. Two separate outputs supply DC loads and charge the batteries.

Characteristics
- DSP technology
- Compact and robust design
- Warm redundancy
- Two input voltages (65 Vac 1ph 50 Hz, 65 Vac 1ph 16,7 Hz)
- Dead battery start-up
- Air forced cooling
- CANopen interfaces for TCMS; USB interfaces for diagnostic
- 19” Rack mounting
- High reliability thanks to consolidated building blocks

Technical data	BORDLINE® M8 AC_65V
Input voltages	64 Vac 1ph 50 Hz
	65 Vac 1ph 16,7 Hz
Output voltage	24 Vdc (19 Vdc to 32 Vdc)
DC output power	8 kW
Protection degree	IP20
Dimensions (L x W x H)	450 x 483 x 486 mm
Ambient temperatures	40°C +55°C (start-up 70°C)
Weight	49,5 kg
DSP Technology	



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Block diagram of
BORDLINE® M8 AC_65V

Control and monitoring
Each battery charger module is full digital controlled (DSP technology). The monitoring of the converter is supported by CANopen interface. A free voltage contact output signal (from relay) provide information (battery charger operating) to the train diagnostic system.

Cooling system
The unit is cooled by air forced externally.
The battery charger is located inside an electrical cabinet with ventilation of filtered air.

Mechanical design
The converter is suitable to be mounted on board inside a 19 inch rack. All electrical interfaces are located in the back for easy and fast connection.

Diagnostics and service
The service-friendly modular design with highly standardized components ensures high reliability, excellent spare parts availability, and optimized life cycle costs. For maintenance, a diagnostic interface (USB) is available in order to monitor converter status and alarms history.

Application example
BORDLINE® M8 AC is installed in the cab car of highspeed trains revamped by ABB and running in Sweden and Norway.

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ABB Spa
Traction
Via Albareto 35
16153, Genova Italy
traction.converters@it.abb.com

abb.com/railway
abb.com/auxiliaryconverters

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