

BATTERY CHARGER

BORDLINE® M10 AC_400V

For all rolling stock applications



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applications

Characteristics

- Compact and rugged design
- Mounting options: machine room, under-floor, on the roof
- Fault logger

System overview

The BORDLINE® M10 AC battery charger is based on modern IGBT technology.

BORDLINE® M10 AC contains:

- Input and EMC filter
- Pre-charging unit
- DC/DC converter
- Internal power supply
- PEC80 main control module
- Flat battery start device

The BORDLINE® M10 AC battery charger is a compact, rugged unit to generate onboard supply voltage for rail vehicles. This unit is part of ABB's BORDLINE® M product platform for onboard converters.

Power part

The input voltage is connected through the EMC filter and the pre-charging unit to the rectifier. The rectified voltage feeds the power part which generates a regulated DC output voltage. The power part operates at a high switching frequency, thereby ensuring the galvanic separation of the output voltages from the input.

Flat battery start device

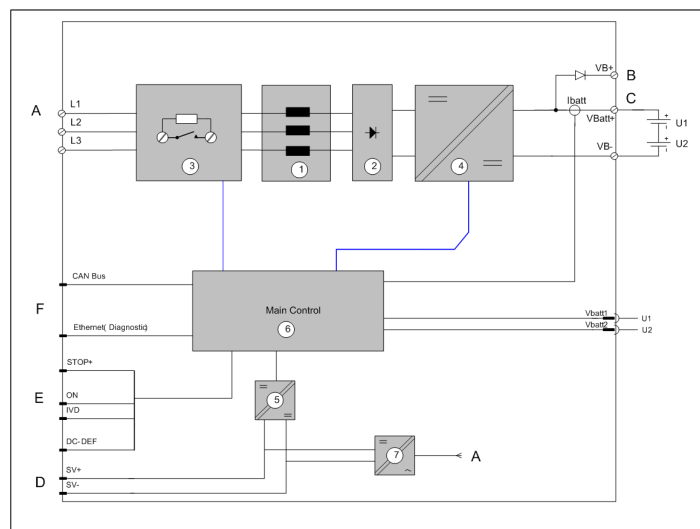
In the case of a heavily discharged vehicle battery, the electronics can be fed from a flat battery start device directly from the input voltage. Switchover occurs automatically.



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01 Electric double-deck train KISS from Stadler
Photo: SBB

02 Block diagram of BORDLINE® M10 AC_400V



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Control and monitoring

The control electronics monitor voltage and currents as well as internal temperatures of the converter. The driver electronics supply the trigger signals for the power semiconductors and are also responsible for the protection of the power semiconductors.

Cooling system

The unit is cooled by forced air. The externally mounted fan and the air duct are integral parts of the battery charger.

Mechanical design

The equipment is housed in a dust and waterproof casing (IP65) and can be mounted either in the machine room, on the roof or under-floor.

Application example

BORDLINE® M10 AC is for instance mounted in the electrical double-deck trains KISS used by Swiss Federal Railways (SBB) on S-Bahn services in Zurich. Each six-car train by Stadler Rail is equipped with six battery chargers.

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, an Ethernet interface is available. Further data can be obtained using a standard PC and the BORDLINE®-View, a diagnostic tool that includes an advanced self-diagnosis function, which provides advice and instructions for service and repair. All major bus systems are available (MVB, CAN, etc.).

Technical data	BORDLINE® M10 AC_400V
AC voltage input	3 x 400... 480 Vac/50... 60 Hz
DC voltage output	24...110 Vdc
Maximum DC output power	8... 14 kW
Battery current limitation	adjustable
Protection degree (casing/ventilator)	IP65/IP54
Dimensions incl. ventilator (L x W x H)	1000 x 400 x 540 mm
Environmental conditions	-25 °C... 45 °C, optional -40 °C
Charging characteristics	UIoU
Weight	85 kg

ABB Switzerland Ltd
Traction
Austrasse
5300 Turgi, Switzerland
sales.traction@ch.abb.com

abb.com/railway
abb.com/tractionconverters

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