

AUXILIARY CONVERTER

BORDLINE® M25 AC_1000V

For passenger coaches with 1000 Vac train line voltage



The BORDLINE® M25 AC 1000 static converter is a compact, rugged unit used to generate onboard three-phase AC voltage for passenger coaches. This unit is part of ABB's BORDLINE® M product platform for onboard converters. The converter can be connected directly to the 1000 Vac/16.7 Hz train line.

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BORDLINE® M25 AC_1000
for passenger coaches

System overview

The BORDLINE® M25 AC static converter is realized with modern IGBT technology, and provides a three-phase sinusoidal AC voltage output to supply the cooling equipment.

BORDLINE® M25 AC auxiliary converter contains:

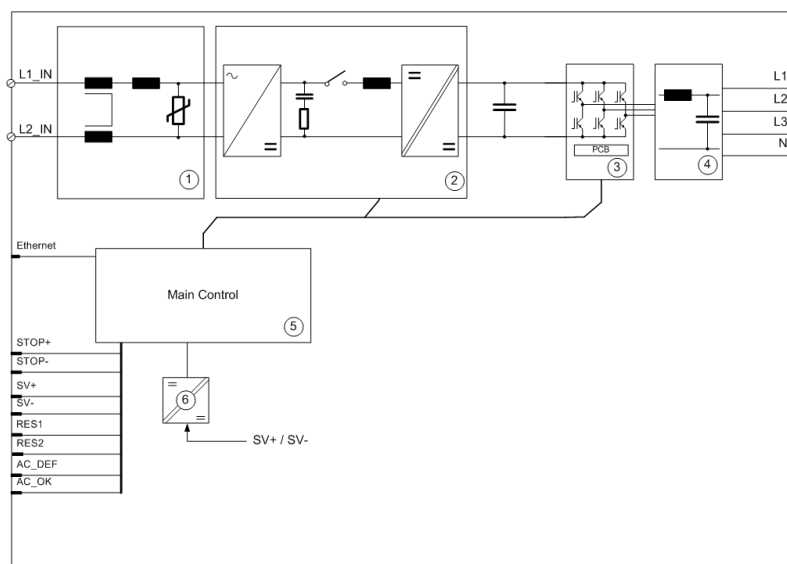
- Input and EMC filter (1)
- AC/DC converter with galvanic insulation (2)
- Three phase inverter (3) with sine-filter (4)
- AC 800PEC main control module (5)
- Electronics power supply (6)

AC/DC converter

The input voltage is connected through an input and EMC filter (1) to an AC/DC converter (2), which consists of a boost converter and a DC/DC converter. The boost converter controls the power factor, while regulating the voltage on the primary DC-link, as a first level for the DC/DC converter. The DC/DC converter generates a regulated voltage for the secondary DC-link, which is galvanically insulated from the input. The converter starts automatically when the input voltage achieves the operating range and when the STOP signal is not active.

Three-phase inverter

The three phase inverter, due to the installed sine-filter generates, a sinusoidal voltage at the converter output, which can be connected to standard three-phase motors. High overload capability and a soft-start function permit trouble-free starting of heavy loads (e.g. compressors).



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Block diagram
BORDLINE® M25 AC_1000

Powerful control platform

The main control is based on ABB's AC 800PEC control platform electronics and is structured so that each power section (AC or DC) can work independent of each other. Both outputs are short-circuit proof. The control electronics also monitor voltages, currents and internal temperatures.

Cooling system

The units are cooled by forced air. The externally mounted fans and the air ducts are integral parts of the onboard converter. A thermal monitoring device protects the converter from becoming overheated.

Mechanical design

The equipment is housed in a dust and waterproof cabinet (IP65) and is suitable for either roof or under-floor mounting. The auxiliary converter features a modular design. The heat sinks are partitioned so that the individual modules can be easily removed and replaced.

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® M25 AC_1000
Train line voltage	1000 Vac/16.7 Hz
Low voltage input	36 Vac
Three-Phase AC output	3 x 400 V/50 Hz, 30 kVA
BUS interface	CAN
Dimensions (L x W x H)	1500 x 756 x 450 mm
Weight	< 250 kg