BORDLINE® CC1500 DE converts diesel generator power into propulsion power for the traction motors and auxiliary power for onboard consumers (AC, DC and battery).

**Benefits**
- Designed for cargo and passenger application
- High energy efficiency
- Light and compact design
- Single axle control for redundancy and adhesion performance
- Adaptive switching frequency for harmonic loss reduction

**System overview**
BORDLINE® CC1500 DE converts the various generator voltage into drive power for the traction motors, three-phase auxiliary power supply for the locomotive self consumption and for passenger version head end power (HEP) for passenger coaches.

BORDLINE® CC1500 DE consists of:
- 1 rectifier
- 1 braking chopper
- 1 auxiliary converter for locomotive consumption
- 1 HEP (only for passenger version)
- 2 propulsion converter
- DC-link filter
- Control platform

**Propulsion converter**
BORDLINE® CC1500 DE is a robust and solid unit incorporating modern IGBT technology and each traction motor is controlled individually. With optimized switching patterns and high switching frequency, BORDLINE® CC1500 DE generates a quasi-sinusoidal current waveform, which reduces the harmonic losses, the audible noise and the mechanical stress on the traction motor.

**Auxiliary converter**
The auxiliary converter module can supply the locomotive self-consumption (blowers, compressor, pumps...) and generates a current limited three-phase 60Hz output voltage directly from the DC-link voltage.

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Power and productivity for a better world™
Powerful control platform

ABB’s control platform AC 800PEC is used in all traction converters, as well as, in a wide range of industrial applications. This unit covers control and protection functions, diagnostics and interfacing to the vehicle control unit. The fast and powerful control is based on Power PCs for the industry. The modular programming ensures quick adaption of the control software, simplicity and reliability.

Cooling system

The equipment is efficiently liquid cooled, allowing a very compact construction. The temperature of the coolant is lowered using an external heat exchanger. An internal blower provides forced air circulation inside the cubicle, and passes the losses via an internal air/liquid heat exchanger to the main cooling circuit. An additional external ventilation of the power section can thus be dispensed with.

Mechanical design

BORDLINE® CC1500 DE is housed in a traction proven IP54 cabinet, designed for mounting in the machine room. Due to its modular design, it allows an easy maintenance access.

Application example

BORDLINE® CC1500 DE is for example mounted in Vossloh’s new lightweight diesel-electric locomotive EUROLIGHT for the European market. The locomotives come in freight and passenger version.

 Diesel-electric locomotive EUROLIGHT, Vossloh

Diagnostic and service

The service friendly modular design with standard components ensures high reliability and low life cycle costs for maintaining the system. For maintenance, an Ethernet interface is available and further data can be obtained using a standard PC and the BORDLINE®-View tool, a diagnostic tool that includes an advanced self-diagnosis function, which gives advice and instructions for service and repair.

Technical data

<table>
<thead>
<tr>
<th>Technical data</th>
<th>BORDLINE® CC1500 DE_M_1800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generator voltage</td>
<td>3 x 440 - 1200 V / 22 - 90 Hz</td>
</tr>
<tr>
<td>Propulsion output</td>
<td>3 x 0...1200 V&lt;sub&gt;AC&lt;/sub&gt;, 600 kW at wheel</td>
</tr>
<tr>
<td>Braking chopper</td>
<td>1050 kW</td>
</tr>
<tr>
<td>Auxiliary converter</td>
<td>3 x 480 V, 90 kVA</td>
</tr>
<tr>
<td>Vehicle control interface</td>
<td>Can Open</td>
</tr>
<tr>
<td>Mounting position</td>
<td>machine room</td>
</tr>
<tr>
<td>Dimensions (W x L x H)</td>
<td>1350 x 850 x 1910 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>1140 kg</td>
</tr>
</tbody>
</table>

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