BORDLINE® CC750 DC 3kV_M_700

Propulsion and Auxiliary Converter for Regional Trains (EMU) with 3 kV\textsubscript{DC} grid voltage

All power electronics found on an EMU integrated in one unit
BORDLINE® CC750 DC 3kV_M_700
Propulsion and auxiliary converter

BORDLINE® CC750 DC 3kV converts the power from the 3 kV DC line into propulsion power for the traction motors and auxiliary power for onboard consumers (AC, DC, and battery).

SYSTEM OVERVIEW
BORDLINE® CC750 DC Compact Converter is connected to the 3 kV DC catenary via an external line inductor and the main circuit breaker.

BORDLINE® CC750 DC consists of:
- 1 propulsion converter
- 1 braking chopper
- Integrated auxiliary power converter
- Integrated battery charger
- AC 800PEC control module

BRAKING CHOPPER
In case the DC catenary is not receptive for recuperative energy, a braking chopper with corresponding resistors is installed. The braking chopper is able to consume the total braking energy in order to ensure safe operation in all cases.

AUXILIARY CONVERTER, BATTERY CHARGER
The auxiliary converter provides a three-phase sinusoidal AC voltage output and a DC voltage output for charging the battery. To comply with the safety standards, it is galvanically separated from the main DC-link.

DRIVE CONTROL UNIT
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. MATLAB®/Simulink® programming ensures quick, reliable coding and easy adaptation of the control software. This leads to low engineering effort when realizing tailor-made solutions for a customer.

COOLING SYSTEM
The equipment is efficiently cooled using service water, making possible a very compact construction. The temperature of the coolant is lowered using an external heat exchanger.

MECHANICAL DESIGN
BORDLINE® CC750 DC is housed in a traction proved IP54 cabinet, designed for mounting in the machine room. Due to its modular design, it allows an easy maintenance access.

SERVICE AND DIAGNOSTIC
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.

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TECHNICAL DATA
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC line voltage (EN 50163)</td>
<td>3 kV DC</td>
</tr>
<tr>
<td>Propulsion output</td>
<td>0…2100 V AC, 690 kW</td>
</tr>
<tr>
<td>Braking chopper</td>
<td>600 kW</td>
</tr>
<tr>
<td>Auxiliary converter</td>
<td>3 x 400 V / 50 Hz, 70 kVA</td>
</tr>
<tr>
<td>Battery charger</td>
<td>24 / 36 / 72 /110 V DC, 8 kW</td>
</tr>
<tr>
<td>Vehicle control interface</td>
<td>Can Open, I/Os</td>
</tr>
<tr>
<td>Dimensions (L x W x H)</td>
<td>900 x 850 x 2000 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>850 kg</td>
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</tbody>
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