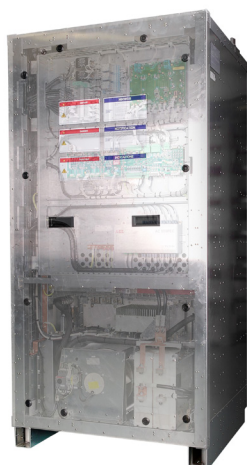


COMPACT CONVERTER

BORDLINE® CC750 DC_3kV

For regional trains (EMUs) with 3 kVdc line voltage



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

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BORDLINE® CC750 DC
for regional trains (EMUs)

Characteristics

- Well proven three-level converter topology
- Highly energy-efficient
- Motor and line friendly performance

System overview

BORDLINE® CC750 DC Compact Converter is connected to the 3 kVdc overhead line 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

Propulsion converter

BORDLINE® CC750 DC Compact Converter is a rugged unit based on modern 3.3 kV IGBTs. It can control either a single motor or two motors in parallel. This Compact Converter makes use of ABB's well-proven three-level topology, which has several advantages over conventional two-level solutions: It is better for the motor, better for the grid, and it saves energy!

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. It is directly coupled to the main DC-link.



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01 FLIRT3 for Łódzka Kolej Aglomeracyjna ŁKA
02 Block diagram of BORDLINE® CC 750 DC

Powerful control platform

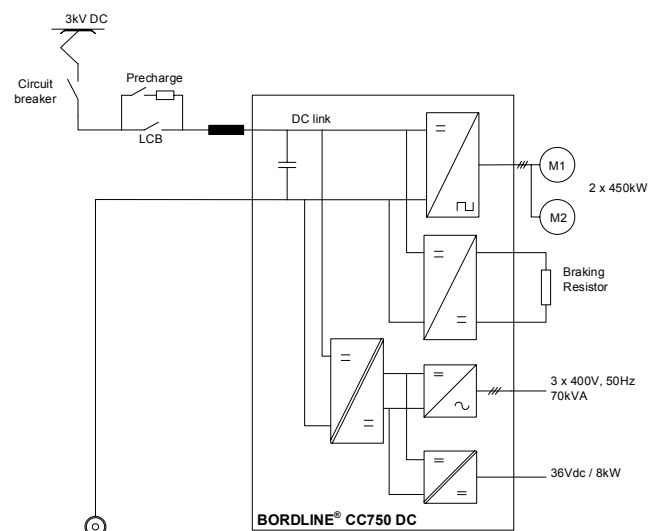
ABB traction converters are built on the AC 800PEC control platform, one of the most powerful modular controller for high-speed performance on the market. This control platform is also used in a wide range of industrial applications. The AC 800PEC software is implemented on three performance levels, thus providing an excellent range of control and communication functionality, in cycle times that extend from the sub-microsecond to the millisecond level. Compared to most other commercially available traction control systems, the modular application software in the AC 800PEC speeds up train commissioning significantly.

Cooling system

The equipment is efficiently cooled using service water, allowing 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 proven IP54 cabinet, designed for mounting in the machine room. The converter is designed for easy maintenance access.



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Diagnostics and service

The service-friendly modular design with highly standardized components ensures high reliability, excellent spare parts availability, and optimized life-cycle costs. The Compact Converter is delivered with BORDLINE® View, a diagnostic tool that visualizes signals, various parameters and the state of the traction system. It consists of an advanced self-diagnosis function, which provides advice and instructions for service and repair. BORDLINE® View is easy to use and runs on a standard PC.

Application example

The Compact Converter BORDLINE® CC750 DC is mounted in Stadler's electric multiple unit trains of the type FLIRT3 for the Łódź region in Poland.

Technical data	BORDLINE® DC_3kV_M_1000
DC line voltage (EN 50163)	3kVdc
Propulsion output	0...1950 Vac, 2 x 450 kW at wheel
Braking chopper	820 kW
Auxiliary converter	3 x 400 V / 50 Hz, 70 kVA
Battery charger	24 / 36 / 72 / 110 Vdc, 8 kW
Mounting position	machine room
Vehicle control interface	CANopen, I/Os
Dimensionen (L x W x H)	904 x 850 x 1850 mm
Weight	900 kg

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