

COMPACT CONVERTER

## BORDLINE® CC750 DC\_1.5kV

For metros with 1.5 kVdc grid voltage



BORDLINE® CC750 DC converts the power from the 1.5 kVdc line into propulsion power for the traction motors.

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Compact Converter  
BORDLINE® CC750 DC  
for metros

### Characteristics

- High power density
- Motor converter for four parallel motors
- Latest IGBT technology
- Air cooling system
- Solid aluminum underfloor construction
- State-of-the-art power module with maintenance tool
- Powerful control platform

### System overview

The BORDLINE® CC7500 DC static converter is realized with modern IGBT technology and converts the DC line voltage into drive power for the traction motors.

### BORDLINE® CC750 DC consists of:

- Line inductor
- Line and precharge contactor/resistor
- DC-link capacitors (integrated in power module)
- Propulsion converter
- Braking chopper
- Air-cooling system
- AC 800PEC control module

### Propulsion converter

BORDLINE® CC750 DC Compact Converter is a compact unit based on modern 3.3 kV IGBTs. It can control either one or up to four motors in parallel.

### 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.

### Power module

The highly integrated power modules are used in both, air-cooled traction and auxiliary converters and complemented with a versatile service tool to allow for quick and easy replacement. The power modules have been designed to cope with a very high peak power to support electrodynamic braking at very high motor speeds.



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01 Metro Guangzhou  
Line 9

02 Simplified main circuit  
BORDLINE® CC750 DC

### Mechanical design and cooling

The equipment is housed in a traction proven IP65 housing and the magnetic components in an IP21 housing. A strong, adjustable and therefore noise-optimized ventilator is effectively cooling power modules and magnetic components as it is passing filtered air through the IP21 section of the converter. BORDLINE® CC750 DC is designed to be mounted under-floor. The modular design allows easy maintenance access.

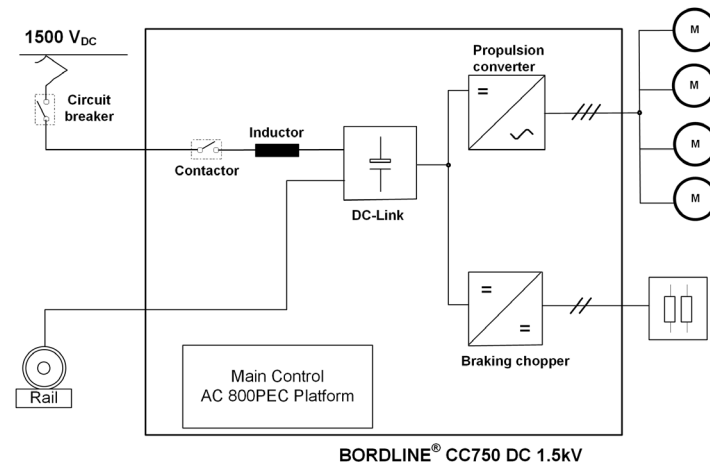
### Powerful control platform

ABB traction converters are built on the AC 800PEC control platform, one of the most powerful modular controllers 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 submicrosecond to the millisecond level. Compared to most other commercially available traction control systems, the modular application software in the AC 800PEC reduces train commissioning time significantly.

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

[abb.com/railway](http://abb.com/railway)  
[abb.com/tractionconverters](http://abb.com/tractionconverters)

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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 BORDLINE® CC750 DC\_1.5kV is mounted in the vehicle cars of the Guangzhou Metro Line 9, serving the city of Guangzhou, China. Each of the six-car metro trains is equipped with four underfloor mounted BORDLINE® CC750 DC\_1.5kV and two BORDLINE® M280 DC\_1.5kV.

Technical data	BORDLINE® CC750 DC_1.5kV
DC line voltage (EN 50163)	1500 Vdc
Propulsion output	3 x 0...1100 Vac, 2025 kW
Braking chopper	1800 kW
Vehicle control interface	MVB, I/Os
Mounting	underfloor
Dimensionen (L x W x H)	1800 x 1550 x 600 mm
Weight	723 kg

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