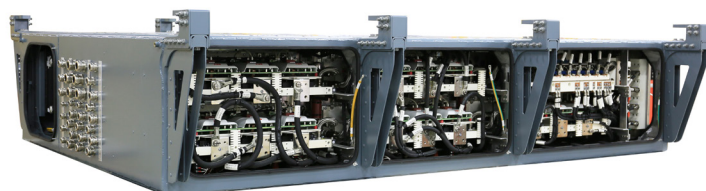


COMPACT CONVERTER

BORDLINE® CC750 MS

For dual-voltage multiple unit train



The Compact Converter BORDLINE® CC750 MS converts the power from the 1.5 kVdc or 25 kVac 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 MS
for dual-voltage
multiple unit trains

Characteristics

- Dual-voltage system
- Compact and light design based on configurable power modules which can easily be replaced
- High integration (auxiliary converter, battery charger)
- High power density (medium frequency auxiliary converter)
- Propulsion converter for either two or four parallel motors
- Powerful control platform
- Efficient water cooling and variable fan speed control

System overview

BORDLINE® CC750 MS is a traction converter for dual-voltage railcars with an integrated auxiliary converter and battery charger. It operates either directly under 1.5 kVdc or under 25 kVac when connected with a transformer to the AC overhead line. BORDLINE® CC750 MS converts the incoming power via the DC link voltage into two independent frequency variable output which can power up to four traction motors.

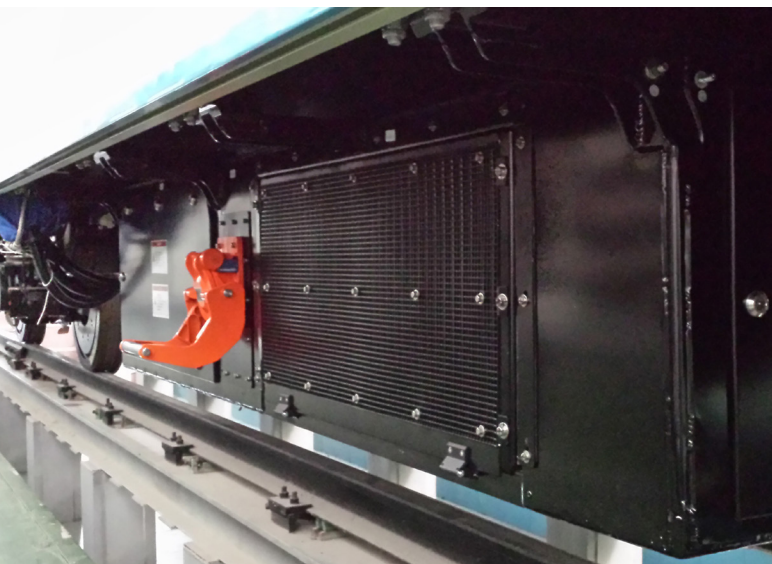
The BORDLINE® CC750 MS is based on the water-cooled converter family BORDLINE® 750 DC for 1.5kVdc grid which is deployed in several metro projects in China. The converters have an integrated auxiliary converter based on medium frequency technology that can power up to 140 kVA.

The Compact Converter consists of:

- System switch contactor and precharge unit
- Two line converter
- DC-link circuit
- Voltage limiter unit/braking chopper
- Two independent propulsion converters
- Auxiliary converter (medium frequency)
- Battery charger
- AC 800PEC control module

Propulsion converter

The compact and robust BORDLINE® CC750 MS is a rugged and compact unit based on modern 3.3 kV IGBTs. Each BORDLINE® CC750 MS can control one or two motors in parallel independently.



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01 Underfloor mounted
Compact Converter
02 Simplified main circuit
of BORDLINE® CC750 MS

Braking chopper

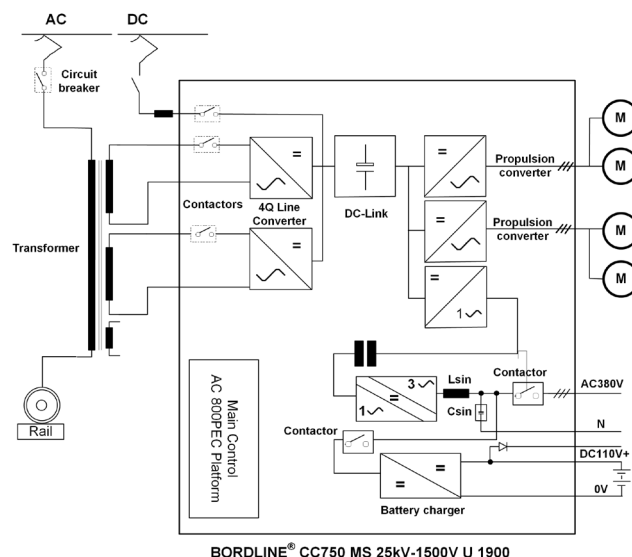
In case the DC overhead line is not receptive for recuperative energy, a braking chopper with corresponding brake resistor is installed. The braking chopper is able to dissipate the total braking energy into heating energy to ensure safe operation under all environment conditions.

Auxiliary converter

The auxiliary converter is based on ABB's very light and compact medium frequency transformer solution. The two-stage topology is generating its three-phase voltage directly from its galvanically separated DC link. A sine filter smoothes this pulse width modulated voltage to provide a quasi-sinusoidal voltage waveform at the output terminals. The auxiliary converter is supporting overload capability and can synchronize to other auxiliary converters on the vehicle.

Battery charger

The low voltage power supply and 110 V battery charger is internally connected to the three-phase AC output of the converter. The battery charger has its own DC link.



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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.

Technical data	BORDLINE® CC750 MS_25kV-1500V_U_1900
AC voltage input (grid side converter)	950 Vac
DC voltage input	1.5 kVdc
Propulsion output	2 x (0 - 1100 V)
	2 x 650 kW / 2 x 850 kW (traction / braking)
Auxiliary converter	3 x 380 V / 50 Hz, 140 kVA
Battery charger (optional)	20 kW, 110 Vdc
Mounting position	underfloor
Dimensionen (L x W x H)	3070 x 2280 x 634 mm
Weight	1900 kg