

COMPACT CONVERTER

BORDLINE® CC400

For light metros with 600/750 Vdc line voltage



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BORDLINE® CC400
for light metros

Characteristics

- Three motor inverters in one box
- Operation with positive and negative third rail voltage
- Ultra-low noise operating mode
- Compact braking resistor design achieved through smart converter cooling concept
- Easy maintenance
- Standard ABB modules

System overview

The BORDLINE® CC400 converters are compact, modular, rugged units based on modern IGBT technology and designed for light rail vehicle applications.

BORDLINE® CC400 Compact Converter contains:

- 3 independent propulsion converters
- 3 main switches
- 3 line filters
- 3 braking choppers
- AC 800PEC control module

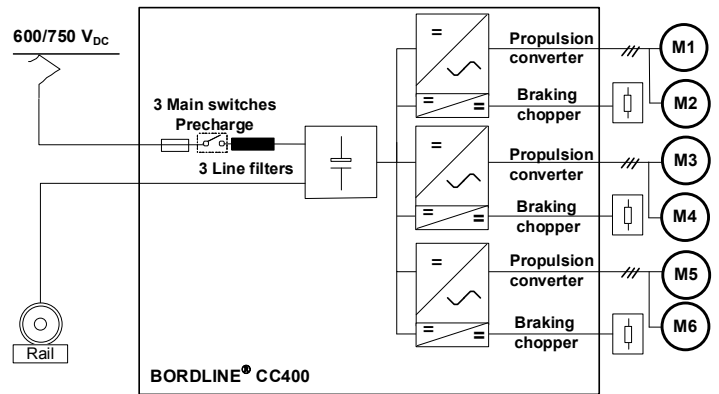
The Compact Converter BORDLINE® CC400 converts 600 Vdc or 750 Vdc line voltage into propulsion power to control and drive the traction motors.

Propulsion converter

Each propulsion converter is able to control two motors and the according braking chopper. During braking operation the energy will be recuperated or, if the line is not receptive, dissipated in the resistors.

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 reduces train commissioning time significantly.



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01 Underground train
type IK
Photo: Stadler

02 Simplified main circuit
of BORDLINE®
CC400 DC_750V_R_1000

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Cooling system

The equipment is efficiently cooled using forced air. The air-flow has been optimized to its fullest extent to provide an ultra low-noise operating mode.

Mechanical design

The BORDLINE® CC400 is housed in an IP65 aluminum cabinet, which results in a very low overall weight. The equipment is designed for under-floor mounting. Due to its modular design, it offers easy maintenance access.

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 examples

Berlin City transport operator BVG has chosen Stadler Pankow to provide two prototype U-Bahn trainsets equipped with Compact Converters BORDLINE® CC400. Following successful test phase, further options for 38 vehicles with ABB equipment were exercised. Each four-car trainsets is equipped with two air-cooled Compact Converters BORDLINE® CC400. The new bi-directional underground vehicles operate on the underground lines U1 – U4 in Berlin, Germany.

Technical data	BORDLINE® CC400 DC_750V_U_1000
Input voltage	600 / 750 Vdc
Propulsion output	0...555 Vac, 3 x 600 kW at wheel
Braking chopper	3 x 600 kW
Vehicle control interface	CANopen, I/Os
Mounting position	underfloor
Dimensionen (LxWxH)	2200 x 1600 x 460 mm
Weight	800 kg

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