COMPACT CONVERTER

BORDLINE® CC400

for light rail vehicles with 600/750 Vdc line voltage



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

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BORDLINE® CC400
for light metros

Characteristics
- All power electronics (traction and auxiliary power) in one box
- Ultra-low noise operating mode
- Easy maintenance
- Standard ABB modules
- All connections by plug-in connectors

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

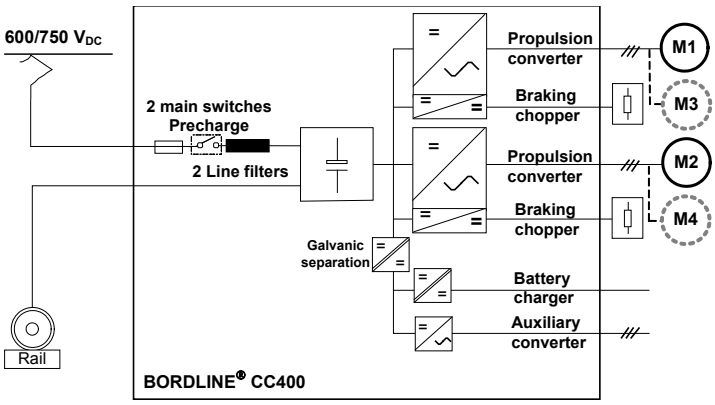
BORDLINE® CC400 Compact Converter contains:
- 2 independent propulsion converters
- 2 main switches
- 2 line filters
- 2 braking choppers
- Integrated auxiliary converter
- Integrated battery charger
- AC 800PEC control module

Propulsion converter
Each propulsion converter is able to control either one or 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.

Auxiliary converter
The auxiliary converter provides a three-phase sinusoidal AC voltage output and a DC voltage output for charging the battery. Both outputs are galvanically insulated from the DC line voltage.



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01 Stuttgarter Strassenbahnen AG, Germany
Photo: Stadler
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02 Simplified main circuit of BORDLINE® CC400 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 reduces train commissioning time significantly.

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
For the new LRVs DT8.12, Stuttgarter Strassenbahnen AG has chosen Stadler's Tango tram vehicle family equipped with ABB's air-cooled Compact Converters. The 40 new vehicles will complement Stuttgart's existing fleet serving the city center and suburban communities.

Technical data	BORDLINE® CC400 DC_750V_U_600
Input voltage	600 / 750 Vdc
Propulsion output	0...500 Vac, 2 x 150 kW at wheel
Braking chopper	2 x 530 kW
Vehicle control interface	CANopen, I/Os
Mounting position	underfloor
Dimensionen (LxWxH)	2000 x 1700 x 460 mm
Weight	750 kg

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