

Double traction inverter EmCon DI2000-5AU 1500V Metro application



Key benefits

- + High performance
- + Highest redundancy
- + Separated control of each motor bogie
- + Outstanding completeness
- + Well-structured arrangement
- + Minimized maintenance

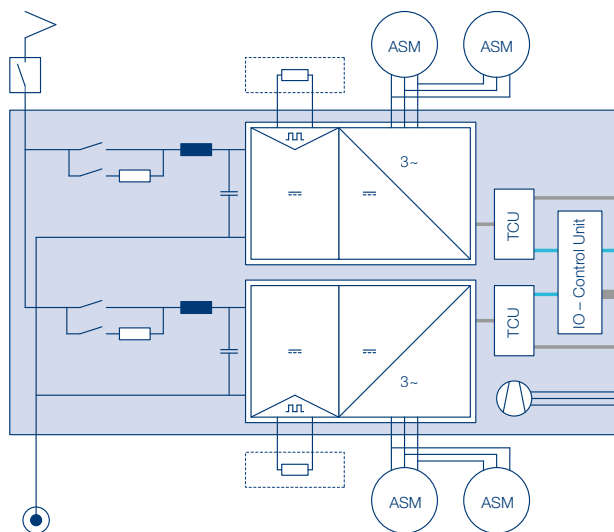
The EmCon DI2000-5AU is a high performance double traction inverter for underfloor installation in 1500 Vdc power supply applications such as Metros in particular.

The double traction inverter EmCon DI2000-5AU represents a compact and complete double traction inverter system for independent control per motor bogie typically. It contains two separated systems. Each system has its own power stack core containing the inverter and brake chopper. Furthermore each system incorporates its associated equipment such as main contactor, charging circuit, measuring devices etc. as well as line inductor and capacitor. A fan for cooling by forced ventilation is shared by the two systems.

Each system is controlled by its dedicated Traction Control Unit (TCU) which provides the control of the 3-phase inverter and the brake chopper. Project specific control tasks are performed by the IO-Control Unit (Voith VPort). Communication with the vehicle controls takes place via CAN-Bus or MV-Bus as well as an appropriate number of digital/analogue inputs and outputs.

All components are integrated to an enclosed housing protecting all parts from environment influences. In spite of the high reliability of the components, all of them are clearly arranged and located for best possible access. A special focus is given to fast replacement of components in case of failure.

Block diagram



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Input data

Input voltage nominal	1500 Vdc
Rated input current	2 x 235 A
Maximum input current	2 x 535 A
Auxiliary supply voltage	110 Vdc
Fan supply voltage	3 x 400 V / 50 Hz

Inverter output

Rated output power	2 x 450 kVA
Rated output current	2 x 250 Arms
Maximum output current	2 x 500 Arms
Output voltage range	2 x (3 x 0 - 1400) Vac
Output frequency	2 x (0 - 250) Hz
Output switching frequency	up to 1000 Hz

Brake chopper output

Rated braking power	2 x 150 kW
Maximum braking power	2 x 1000 kW
Switching frequency	up to 1000 Hz

General data

Ambient temperature	-40°C to +45°C
Protection level	IP55
Dimensions	1950 x 1910 x 590 mm
Mass	1300 kg
Noise level at low/high fan speed	class N3/N2

Control interfaces

Ethernet (service)	1
MVB (or CANopen)	1
Digital inputs	32
Digital outputs	16
Analogue inputs	4
Pt100 inputs	4
PWM inputs	2
Speed sensor inputs	4
Traction enable input	2
Main contactor feedback	2
Line heat detector	1

Standards

The EmCon DI2000-5AU complies with the relevant standards such as IEC 61287, IEC 60571 (EN 50155), IEC 62236 (EN 50121), IEC 61373 as well as EN 45545.

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