



KONČAR

Končar Electronics and Informatics, Inc

KONTRAC GP 550 AC

Propulsion converter for electric multiple unit



KONTRAC GP 550 AC for electric multiple unit

KONTRAC GP 550 AC converts the power from transformer outputs of AC network into propulsion power for the traction motors.

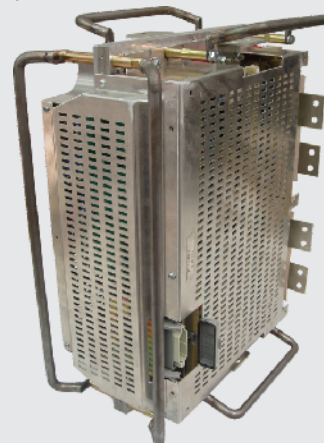
KONTRAC GP 550 AC has sinusoidal input current in phase with voltage and with low harmonic content. During braking, the converter feeds back energy to the network. All control, protective, communication and monitoring functions are implemented in one control electronic, inside the converter.

Features

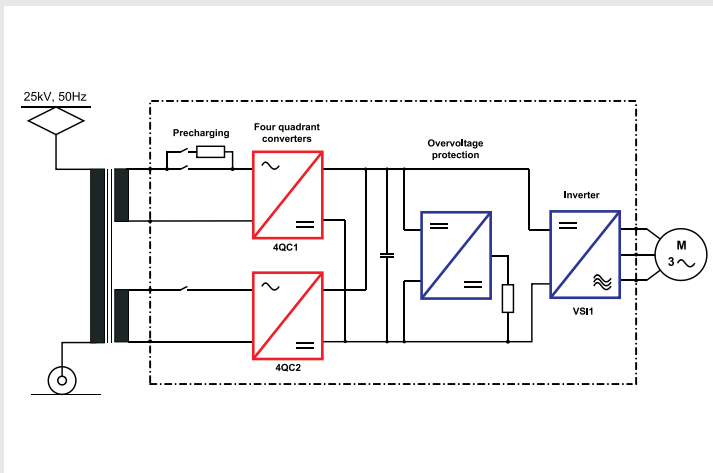
- Regenerative braking capability
- Modular design of power units
- High energy efficiency
- Machine room mounting
- Easy maintenance
- Line friendly
- Motor friendly
- Latest IGBT technology
- Liquid cooling system

KONTRAC GP 550 AC consists of:

- Input contactors and precharging circuit
- Two 4Q converters
- One propulsion inverter
- DC link overvoltage protection
- Liquid cooling system
- Control unit



Converter power unit



Block diagram of the converter

Traction control unit

Traction control unit (TCU) is based on proprietary embedded control platform which has been used for years in our rail solutions (locomotives, coaches, trams, EMU, DMU).

TCU is responsible for all sequence control, regulation, protection, communication, supervision and diagnostics tasks.

Special care is put on obsolescence issues and modularity.

Diagnostic and visualization

Proprietary powerful diagnostic and visualization tool (ZZT) is compatible with all our platforms through many generations of control electronic solutions.

Configurable event-driven data logging and event recording is integrated in the control electronics. Remote diagnostic functions allow monitoring of all intelligent units from one connection point.



"Končar" electric multiple unit for Croatian Railways

Basic technical data

Input voltage:	2 x 800 V, 50 Hz
Propulsion output:	550 kW
Cooling:	Liquid cooled
Size (L x W x H):	1350 x 840 x 1900 mm
Weight:	849 kg
Mounting position:	Machine room
Connecting interface:	CAN / MVB / Ethernet

Mechanical design and cooling system

The converter is designed for mounting in machine room with IP54 protection. Modular design of the converter allows an easy maintenance access enabling easy replacement of each module. The increased power density of the power modules enables compact and light-weighted converter design.

The equipment is efficiently liquid cooled. Cooling system uses water to cool the converter power modules - a feature contributing to the converter's very compact design. The water itself is cooled by an external water-to-air heat exchanger.

Application examples

KONTRAC GP 550 AC is used as a propulsion converter in a low-floor "Končar" electric multiple unit built and delivered for Croatian Railways. The electric multiple unit, which is distinguished by its modern and attractive design, superior technical characteristics and comfortable ride, is intended for regional passenger transport in Croatia.

The converter KONTRAC GP 550 AC is also used as a propulsion converter in electric multiple unit built also for Croatian Railways but for urban passenger transport.

These modern vehicles significantly contribute to efficient and comfortable passenger commute in urban and regional transport.

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