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Končar Electronics and Informatics, Inc

KONTRAC PN 30 AC

Trackside auxiliary converter fed by overhead lines



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KONTRAC PN 30 AC is a trackside auxiliary power supply converter fed by 25 kV, 50 Hz overhead line. It is used in order to supply various loads inside the substation facilities (power supply for integrated lighting and information systems, railway signaling and protection systems, etc.).

Overhead line might generate spikes, sags and surges caused by the current drawn from locomotives. Those are likely to damage the input stages of conventional converters.

In order to provide a trackside noise filtered power source, we use the same technology as for our rolling stock converters.

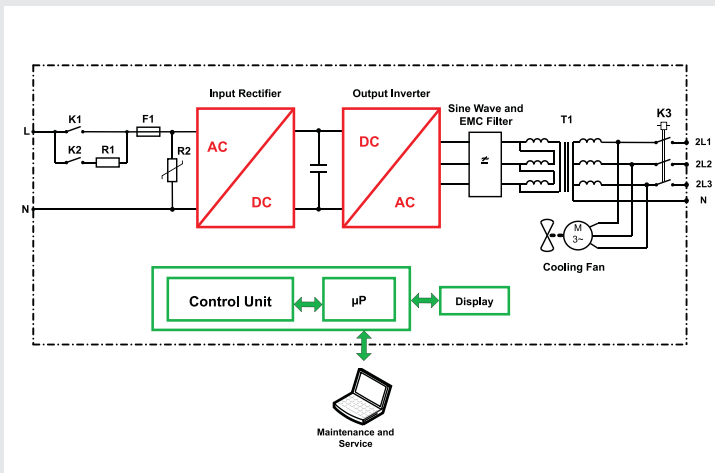
The converter is primarily intended to be used as a backup energy source (in case of power outage from the distribution network). However, in projects where poor or no distribution network is available at site, this converter can be implemented as a primary power source as well.

Features

- Rolling stock converter technology
- Robust input rectifiers
- Nearly sinusoidal input current, in phase with the input voltage
- Output transformer ensures galvanic isolation
- Sine wave output filter
- EMC output filter
- Easy maintenance
- Modular design of power unit
- Air cooling

KONTRAC PN 30 AC consists of:

- Input contactor and precharging circuit
- Input rectifier, chopper and inverter power module
- Output sine wave filter
- Output EMC filter
- Output transformer
- Air ventilation system
- Control unit



Block diagram of the converter

Basic technical data

Input voltage:	230 V, 50 Hz over transformer 25 kV / 230 V
Minimum input voltage:	160 V (equivalent to 17.5 kV of overhead line voltage)
Maximum input voltage:	270 V (equivalent to 29 kV of overhead line voltage)
AC output:	3 x 400 V / 230 V, 50 Hz, 30 kVA
Cooling:	Forced air-cooling
Size (L x W x H):	600 x 600 x 2000 mm
Weight:	504 kg
Mounting place:	Substation
Connecting interface:	CAN / MVB / Ethernet

Digital control unit

Digital control unit (DCU) is based on proprietary embedded control platform which has been used for years in our rail solutions (locomotives, coaches, trams, EMU, DMU). DCU is responsible for all sequence control, regulation, protection, communication, supervision and diagnostics tasks.



Two converters KONTRAC PN 30 AC installed in Drivenik Railway Station, Croatia

Mechanical design and cooling system

The converter has IP54 mechanical protection and it is designed for mounting inside the traction substations. The modular design of the power module allows an easy maintenance. The converter is efficiently cooled by forced air.

Diagnostic and visualization

Proprietary powerful diagnostic and visualization tool (ZTZ) 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.

Application examples

Two converters KONTRAC PN 30 AC are installed in Drivenik Railway Station in Croatia. The converters are used as a primary auxiliary power supply of all single-phase and three-phase AC consumers. The input circuits of the converters are resistant to spikes, sags and surges in overhead line caused by the current drawn from locomotives.

The converter KONTRAC PN 30 AC is also installed in Center for remote control of electric system for rail transportation in Rijeka, Croatia where it is used as a backup auxiliary power supply in case of power outage from the distribution network.



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