KONČAR
ELECTRONICS AND INFORMATICS

Photovoltaic inverter for solar power plants

Photovoltaic inverter for solar power plants Central PV inverter KONsol

The KONsol central photovoltaic (PV) inverter is a turnkey solution designed for outdoor applications in large-scale solar power plants with capacities exceeding 1 MW. It enhances performance and efficiency while reducing installation costs.

All inverter components and equipment required for medium-voltage (MV) grid connection are housed within a 20-foot container for simplified installation and integration.

The KONsol central photovoltaic inverter allows for both local and remote control and monitoring, either via the control cabinet or through industry-standard communication protocols. With comprehensive communication support, it is compatible with all relevant industry protocols. It is fully automated, designed for unmanned operation, and seamlessly integrates into SCADA systems.

The inverter system consists of two independent parallel inverters, an MV transformer, and an MV switchgear block, ensuring optimized power conversion and reliable grid connection. Equipped with advanced remote monitoring and diagnostics, the system enables preventive maintenance and efficient troubleshooting, significantly enhancing reliability and availability. Designed for long-term operation, the inverter has a service life of over 20 years with regular maintenance, aligning with the expected lifespan of the solar power plant.

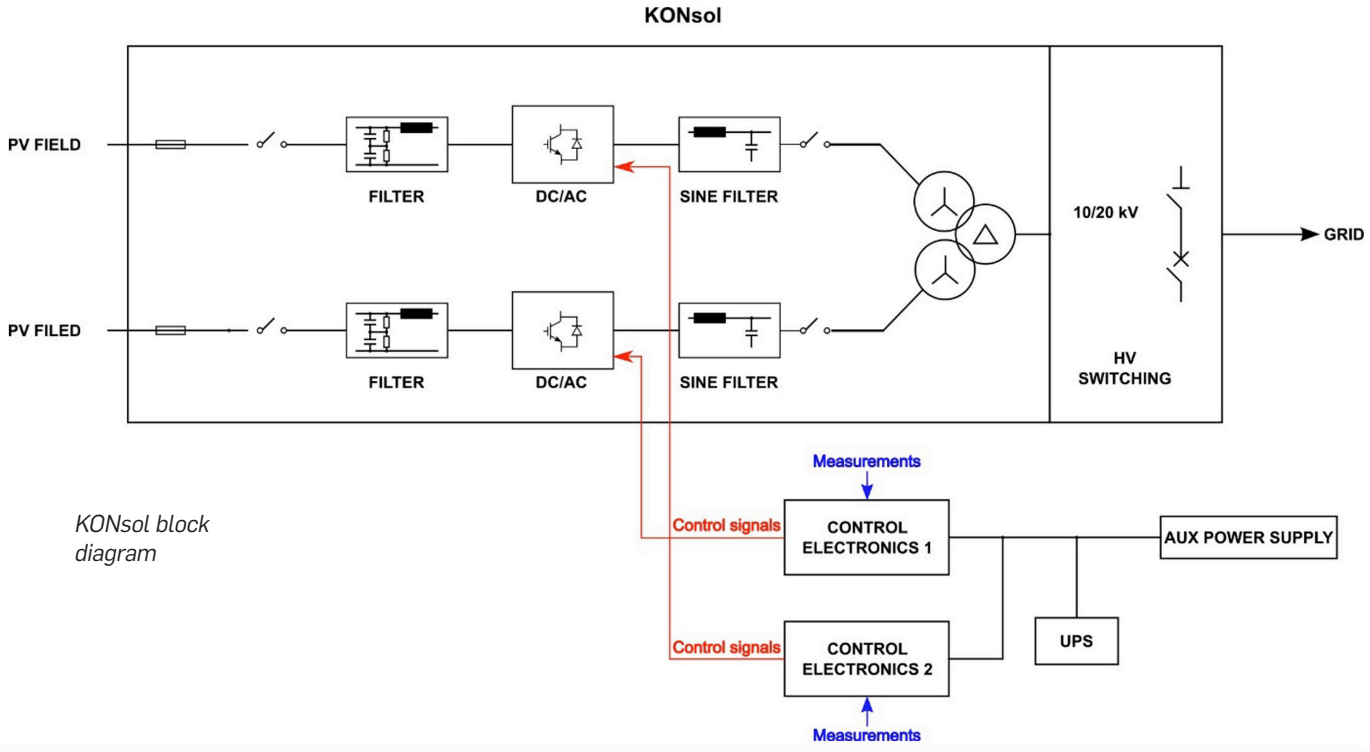
The KONsol inverter is a standalone unit featuring single-stage DC-to-AC power conversion, efficiently converting DC power from the photovoltaic field into AC power. The low-voltage AC output is transformed to medium voltage (10 or 20 kV) and connected to the distribution grid via the MV switchgear block, which also supports parallel connection of multiple inverters.

The KONsol inverter is fully compliant with grid regulations and is designed to meet all safety standards for equipment and personnel protection. Its advanced proprietary control algorithms support voltage regulation and reactive power control, while harmonic distortion in current and voltage remains within permissible limits, ensuring no negative impact on the grid.

The KONsol container is engineered to meet stringent climate and mechanical requirements, with an emphasis on ease of maintenance and servicing. It incorporates comprehensive fire protection measures and is certified for safety and durability.

KONsol 720 inverter

Technical specifications	
PV field voltage	1000 Vdc
Output power	2×360 kW
MV grid voltage	10(20) kV
Container size	20'
Ambient temperature range	-20 ÷ 50°C



KONsol block diagram

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