



Ground mounted solar power plant

Features of the plant:

For the implementation of the PV power plant were used mono-crystalline modules type Sinski PV SPV 180M-24 with nominal power of 180 Wp and module voltage of VMPP = 36V. The PV power plant consists of 975 modules, forming 18 plates with an inclination of 25°.

The generated electricity is fed to 15 inverters and to each inverter are connected 5 strings, consisting of 13 serially-connected modules.

Both end modules of each string with DC cable RADOX Solarcable single core 1x4mm² cable are connected to a DC switchboard, equipped with PF10 8A gR fuses – one on each pole. DC switchboard, with DC cable RADOX Solarcable single core 1x6mm² cable is connected to the inverter input.

For this project were selected SMA Technologies inverters, Sunny Mini Central SMA SMC 11 000 TL model.

The inverters are designed, so they can work only in parallel with the power supply network. In case of removing or changing the parameters outside the limits of the AC network, to which the inverter output is connected, it will stop working automatically and avoids work in autonomous mode. After a set period of time there will be another attempt for switching on, but if the deviation is critical for the inverter operation, then the switching off remains until the elimination of the cause. The independent network parameter control system „SMA grid guard" takes care about all this.

The inverters are grouped into five groups by three and each is connected via CBT-c 2x16mm² cable to a properly sized circuit breaker into the relevant intermediate switchboard.

The intermediate switchboards are connected to a properly sized circuit breaker into the main switchboard.

The earthing system consists of 29 earthing devices, combined in a common circuit. The earthing circuit consists of a galvanized 40/4 mm steel bar.

For lightning protection system was chosen early streamer emission lightning conductor SCHIRTEC – A.E.S.E., with shaft height of 8.40 meters.

Sunny Web Box monitoring and control device is installed.

Power Plant Specification

Size:	175,50 DC
Commissioned:	June 2012
Type:	Ground-mounted
Site Area:	5604 m ²
Output:	165 kW
CO ₂ Displacement:	~138.7 metric tons per year
Module Surface Area:	1245 m ²
Modules Used:	Type: SPV 180M-24, Quantity: 975
Angles:	Mounting Tilt: 25° Azimuth: 0°



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