



Ground mounted solar power plant

Features of the plant:

The main components of the DC section of the power plant are mono-crystalline PV modules Sinski PV SPV180M-24, with nominal power of 180Wp and voltage of VMPP = 36V. The power plant consists of 312 modules, forming 2 plates, as follows: 6 plates of 26 modules and 3 plates of 52 modules.

The generated electricity is fed to 6 inverters. To each inverter are connected 4 strings, and each of them is composed of 13 serially-connected modules.

The successive connection of the modules in string is carried out by installed factory cables with standard MC3 connectors. Both end modules of each string with DC cable RADOX Solarcable single core 1x4mm² type are connected to the inverter input.

For the PV system are used 6 SMA Technologies inverters, Sunny Mini Central SMC 9 000TL model. They have IP65 level of protection against external weather conditions, independent control system of the network parameters „SMA grid guard“, integrated output power balance system “SMA Power balancer”.

All switchboards and main switchboards are fitted in metal boxes for outdoor installation with IP 67 protection. They are mounted on metal consoles under the PV modules and are equipped with cathode surge arresters.

The earthing system consists of a double galvanized bar 40/4 mm, laid in a trench at a depth of 1m. To the earthing system are connected the switchboards, inverter grounding, metal grids and metal structures of the modules.

The lightning protection system consists of an early streamer emission lightning conductor E.S.E.S-A1 and lightning shaft height of 7 m above the ground. It is installed in a reinforced concrete foundation, additionally reinforced with metal tensioner. The lightning conductor is grounded with two downconductors of double galvanized 40/4 mm bar. And two earthing devices.

The monitoring system is located in a low-voltage switchboard. The „Sunny Web Box“ device allows monitoring, diagnostics, data storage and visualization of the system via PC or Web browser. To measure the ambient temperature, module temperature and wind power additional external sensors and anemometer are installed.

Power Plant Specification

Size:	56.16 DC
Commissioned:	June 2012
Type:	Ground-mounted
Site Area:	2007 m ²
Output:	54 kW
CO ₂ Displacement:	~ metric tons per year
Module Surface Area:	398 m ²
Modules Used:	Type: SPV180M-24
	Quantity: 312
Angles:	Mounting Tilt: 32°
	Azimuth: 0°



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