



Ground mounted solar power plant

Features of the plant:

The PV power plant is built of mono-crystalline modules Sinski PV SPV 190M-24 with nominal power 190 Wp and voltage of VMPP = 36.5V. Determining the number of modules in one string is performed by Sunny Design software, provided by the inverter manufacturer.

The system includes 432 modules, forming 9 plates of 48 modules with inclination of 30°. Each plate consists of 2 rows with 24 modules. The generated electricity is fed to 9 inverters and to each inverter are connected 4 strings, consisting of 12 serially-connected modules.

Both end modules of each string with DC cable IBC Flexy Sun Sun 1x4mm² type are connected to the inverter input.

The inverters are Sunny Mini Central SMC 8 000TL grouped into three groups of three and from each exits a CBT c 2x16 mm² cable and goes to a properly sized circuit breaker into the relevant intermediate switchboards, a total of 3. From the intermediate switchboards, with CBT – c 4x16mm² cable, goes to the main switchboard. In the main switchboard is installed PowerLogic PM9 electrometer from the Schneider Electric catalogue by which are monitored the power plant parameters (current, voltage and produced electricity).

To achieve the necessary parameters of the earthing system are used 18 earthing devices, combined in a common circuit. Each earthing device is a grounding pole of galvanized steel made of L-shaped hot rolled profile with dimensions 50x50x5x1500 mm. The earthing circuit consists of a galvanized 40/4 mm steel bar, dug in the ground.

The lightning protection system consists of an early streamer emission lightning conductor ESES - A1, with advance time of 60 µs and lightning shaft height of 8.30 m - 6.00 m above the highest point on the construction.

The central monitoring and control device is Sunny Web Box. The monitoring and control device is installed in low voltage switchboard.

Power Plant Specification

Size:	82.08 DC
Commissioned:	December 2011
Type:	Ground-mounted
Site Area:	3428 m ²
Output:	72 kW
CO ₂ Displacement:	~ metric tons per year
Module Surface Area:	551.5 m ²
Modules Used:	Type: SPV190M-24
	Quantity: 432
Angles:	Mounting Tilt: 30°
	Azimuth: 0°



Supported by:



5300 Gabrovo, Bulgaria,
Stacionna 14 St.
Phone: +359 (66) 817 404
Fax: +359 (66) 817 407
Email: solar@sts.bg
www.solar.sts.bg

