



Ground mounted solar power plant

Features of the plant:

In the construction of the photovoltaic system are used 390 mono-crystalline modules, all with nominal power of 170 Wp and nominal module voltage of 24V. The modules form 6 plates of 65 modules with inclination of 32°. Each plate consists of 2 rows and on the first are placed 33 modules, on the second – 32. The generated electricity is fed to 6 Sunny Mini Central SMC 10 000TL inverters and to each inverter are connected 5 strings, consisting of 12 serially-connected modules. Both end modules of each string with DC cable IBC Flexy Sun Sun 1 x 4 mm² type are connected to the inverter input. The cable is for outdoor, mobile or fixed installation and resistant to weather conditions, high and low temperatures and UV radiation.

The mutual distances between the inverters, as well as distances between inverters and external objects are designed according to the requirements of the manufacturer SMA Technologies.

The inverter groups are grouped into two groups of three and from each exits a CBT 2x16 mm² cable and goes to a properly sized circuit breaker into intermediate switchboard. Intermediate switchboards 1 and 2 and the inverters are installed on the north side of the construction.

From intermediate switchboard 1 and 2 with cable CBT – c 3 25+16 mm² goes to the main switchboard where is installed Compact NS 160 N fuse, equipped with electronic protection STR22GE, allowing precise adjustment of the circuit breaker trip current. In the main switchboard is installed electrometer with current transformers by which the power plant parameters can be monitored (remotely) and recorded.

The grounding of the PV module frames is guaranteed by their electrical connection with the supporting aluminum profiles. The grounding of inverters, main switchboards and all metal non-current-carrying parts is carried out by connecting them to the grounding circuit, attached to earthing devices. Each grounding device consists of 2 grounding poles 50 x50 x 5 x 1500 mm.

The lightning protection system consists of an early streamer emission lightning conductor SCHIRTEC – A E. S. E. with advance time of 60 µs and lightning shaft height of 4.30 m above the highest point on the construction.

Site monitoring and control is carried out by Sunny Web Box. The monitoring and control devices are mounted in low voltage switchboard.

Power Plant Specification

Size:	66.30 DC
Commissioned:	October 2009
Type:	Ground-mounted
Site Area:	3195 m ²
Output:	60 kW
CO ₂ Displacement:	~ metric tons per year
Module Surface Area:	498 m ²
Modules Used:	Type: SSM 170/24M, EQS 170D-24
Quantity:	390
Angles:	Mounting Tilt: 32° Azimuth: 0°



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