STS SOLAR

Project Datesheet

Ground mounted solar power plant

Features of the plant:

The PV power plant consists of 432 modules, type SPV 180M-24, with nominal power of 180 Wp and voltage of 24V, forming 9 rows of static structures.

The generated electricity is fed to 9 inverters and to each inverter are connected 4 strings, and each of them is composed of 12 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 1x4mm^2 type are connected to the inverter input.

The module DC power is converted to AC power using 9 Sunny Mini Central SMC 8 000TL inverters. The inverters are without transformers and with higher efficiency compared to the inverters with transformers. They have IP 65 level of protection against external weather conditions. They are grouped into four groups by three and from each exits a CBT-c 2x16mm^2 cable and goes to a properly sized circuit breaker into the relevant intermediate switchboard. From each intermediate switchboard exits a CBT-c 4x16мм^2 cable and goes to a C60N 63A circuit breaker, tripolar with C-curve into the main switchboard.

For main fuse is provided automatic circuit breaker NS 160 N, 3P, 160 A, tripole with electronic protection STR22GE set to 125 A, with minimum voltage protection and motor drive.

In the implementation of the earthing installation are used 10 earthing devices, combined in a common circuit. Each earhing device is a grounding pole of galvanized steel made of L-shaped hot rolled profile with dimensions 50x50x5x 1500mm. The grounding circuit consists of a galvanized 40/4 mm steel bar, dug in the ground, and the grounding pole bar is welded to the bar, forming the grounding circuit.

Lightning shaft with height of 5.45 m and early streamer emission lightning conductor SCHIRTEC – A E.S.E. are installed at a safe distance from the solar modules to avoid shading.

The Sunny Web Box monitoring and control system performs data recording in energy independent memory and send it over Internet to the central server of SMA – Germany.

Power Plant Specification

Size:	77.76 DC
Commissioned:	March 2012
Type:	Ground-mounted
Site Area:	7815 м^2
Output:	72 kW
CO_2 Displacement:	~51 metric tons per year
Module Surface Area:	551.5 m^2
Modules Used:	Type: SPV180M-24
	Quantity: 432
Angles:	Mounting Tilt: 30°
	Azimuth: 0°

Supported by:

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