STS SOLAR

Project Datesheet

Roof mounted solar power plant

Features of the plant:

The main components of the DC section of the power plant are mono-crystalline Suntech STP 250S-20/Wd, with nominal power of 250 Wp and voltage of VMPP= 30.7V. The power plant consists of 320 modules, forming 18 plates, as follows: 17 plates with 18 modules and one plate with 14 modules, all with an inclination of 20°.

Determining the number of modules in one string is performed by Sunny Design software, provided by the inverter manufacturer.

The generated electricity is fed to 5 inverters and to each inverter are connected 3 strings. To 4 of the inverters there are 2 strings composed of 22 serially-connected modules.

To 4 of the inverters there are 2 strings composed of 22 serially-connected modules and 1 string with 18 serially-connected modules. The successive connection of the modules in string is carried out by installed factory cables with standard Tyco connectors. Both end modules of each string with DC cable RADOX Solarcable single core 1 x 4 mm^2 type are connected to the inverter input.

For the current project are selected SMA Technologies inverters, model Sunny TriPower STP 15 000 TL. These are 3-phase inverters. The inverters are 5, and each is connected via CBT-c 5 x 16 mm^2 cable or CBT-c 5 x 10 mm^2 cable to a properly sized circuit breaker into the main switchboard.

The earthing system consists of Al wire with intersection of Ø 8mm, installed on the aluminum structure of the panels using mounting brackets providing sufficient low transition resistance of the connection Rпр≤0,05Ω. Each earthing device consists of a set of 3 galvanized steel poles with dimensions of 63/63/6 mm, L=1500mm and revision-control box. The connection between the revision-control box and the earthing devices is done with galvanized steel bar 40/4 mm.

For lightning protection system was chosen early streamer emission lightning conductor SCHIRTEC – A E.S.E. The shaft height is 5.6 meters.

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

Power Plant Specification

Size:	80 DC
Commissioned:	June 2012
Type:	Roof-mounted
Site Area:	1377 $м^2$
Output:	75 kW
CO_2 Displacement:	~65.4 metric tons per year
Module Surface Area:	528 m^2
Modules Used:	Type: STP 250S-20 Wd
	Quantity: 320
Angles:	Mounting Tilt: 20°
	Azimuth: -38°

Supported by:

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