STS SOLAR

Project Datesheet

Roof-mounted solar power plant

Features of the plant:

The photovoltaic system is built of 108 mono-crystalline modules Solar Swiss SSM/24M with nominal power of 180 Wp and nominal module voltage of 24V. Determining the number of modules in one string is performed by Sunny Design software, provided by the inverter manufacturer. The modules form a plate of 9 rows of 12 modules per row, located on the southern slope of the rooftop with inclination of 14°. The generated electricity is fed to 3 Sunny Mini Central SMC 6000TL inverters and to each inverter are connected 4 strings, consisting 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 IBC Flexy 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.

From each inverter exits a CBTc 2x10 mm2 cable and goes to a properly sized circuit breaker into a main switchboard. The main switchboard is installed on the outside of the wall between the south and north slope, near the inverters.

The grounding of the PV module frames is guaranteed by their electrical connection with the supporting aluminum profiles. The connection between the supporting aluminum profiles is completed with galvanized 30/3mm bar.

The grounding of inverters, intermediate switchboards and all metal non-current-carrying parts is carried out by welding or bolting them to the grounding circuit. The grounding circuit is attached to vertical downconductors, connected to existing earthing device.

The lightning protection system consists of an early streamer emission lightning conductor E.S.E.S-A1 and lightning shaft height of 4.30 m above the highest point of the roof.

The monitoring and control devices are mounted in low voltage switchboard. It contains – 1 circuit breaker, warning light, 4 outlets, charging adaptor for Sunny Web Box, Sunny Web Box, charging adaptor for Power Injector, Power Injector, charging adaptor for LAN Switch, Switch.

Power Plant Specification

Size:	19.44 DC
Commissioned:	June 2011
Type:	Roof
Site Area:	228 м²
Output:	24 kW
CO_2 Displacement:	~15.7 metric tons per year
Module Surface Area:	138 m²
Modules Used:	Type: SSM 180/12M
	Quantity: 108
Angles:	Mounting Tilt: 14°
	Azimuth: 0°

Supported by:

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