



Ground mounted solar power plant

Features of the plant:

The main components of the DC section of the power plant are poly-crystalline PV modules Protect Poly 180, with nominal power of 180 Wp and voltage of VMPP = 23.35V. The power plant consists of 456 modules, forming individual structures, as follows: 12 structures of 19 modules and 6 structures of 38 modules.

The generated electricity is fed to 12 inverters. To each inverter are connected 2 strings, and each of them is composed of 19 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 single core 1x4mm² type are connected to the inverter input.

For the PV system are used SMA Technologies inverters, model Sunny Mini Central SMC 7 000TL. The inverters are single-phase, without transformers and with much higher efficiency compared to the inverters with transformers. They have IP65 level of protection against external weather conditions, independent control system of the network parameters „SMA grid guard”, integrated output power balance system “SMA Power balancer”.

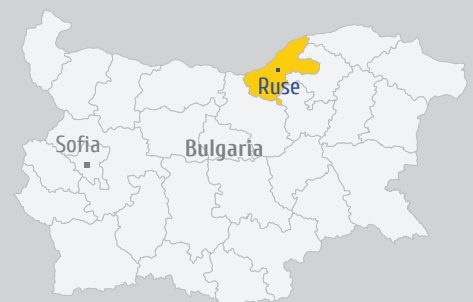
The earthing system is built from a common grounding circuit, composed of galvanized steel bar 40/4mm, laid under the ground. The galvanized steel poles Ø20mm, L=1500mm are connected by bar using welding or brackets, stuck in the designated places. The connection of the grounding circuit with the structures is carried out using "U"-shaped bracket, which serves as a connection of the bar, structures and the aluminum supporting panel profiles. The connection of the supporting aluminum profiles with the grounding circuit is completed with aluminum wire Ø 8mm.

For lightning protection system was chosen early streamer emission lightning conductor SCHIRTEC – A.E.S.E. The shaft height is 7m, ensuring protection zone of the facilities installed to the PV power plant. The installation of the lightning shaft is at a safe distance from the solar modules and there is no shading.

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:	82.08 DC
Commissioned:	June 2012
Type:	Ground- mounted
Site Area:	3138 m ²
Output:	84 kW
CO ₂ Displacement:	~ 74.5 metric tons per year
Module Surface Area:	611.5 m ²
Modules Used:	Type: Protect Poly 180
	Quantity: 456
Angles:	Mounting Tilt: 30°
	Azimuth: 0°



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