



Ground solar plant

Features of the plant:

The power plant consists of 576 mono-crystalline modules Sinski PV SPV 175-SMY-1. The modules feed the generated electricity to 12 inverters. To each inverter are connected 48 modules, distributed in 4 strings of 12 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 Sun 1x4 mm² type are connected to the inverter input. At the +/- inverter inputs is installed locking diode, designed to protect each string from reverse current of the other strings in case of short circuit inside it.

The inverters used are Sunny Mini Central SMC 8000TL. These are single-phase inverters without transformers with inputs for 4 strings.

From each inverter exits a CBTc 2x16.0 mm² cable and goes to a circuit breaker in intermediate switchboard 1,2,3 and 4, and from them to a main switchboard – CBTc 4x16.0 mm² cable. The main switchboard is for outdoor installation with IP65 level of protection. Based on instructions of the power distribution company in the transformer substation of the MV metering cell is installed electrometer, equipped with automatic circuit breaker NS-N-250A, set to 200A. The measuring of the output electricity is carried out by three-phase static electrometer, installed on 20 kV side of a complete transformer post.

The grounding of the PV module frames is guaranteed by their electrical connection with the supporting aluminum profiles, interconnected to a common grounding circuit. The connection between the supporting aluminum profiles is completed with galvanized 30x3mm bar. The grounding bars are placed at both ends of the module structure, down to the ground and end with earthing devices, consisting of 2 galvanized pipes 2" with length of 2m. All earthing devices are connected with each other in a closed circuit of galvanized 40/4 mm bar, laid at a depth of 0.4m underground. The earthing of the inverters and main switchboards is similar to the panels. The inverter and switchboard earthing bolts are connected with the zero bar.

The lightning protection system consists of early streamer emission lightning conductor E.S.E.S-A1 and lightning shaft height of 6 m above the ground.

The central monitoring and control device is Sunny Web Box. The power supply is via UPS, located in a main switchboard.

Power Plant Specification

Size:	100.80 DC
Commissioned:	January 2011
Type:	Ground
Site Area:	1108 m ²
Output:	96 kW
CO ₂ Displacement:	~83.5 metric tons per year
Module Surface Area:	735 m ²
Modules Used:	Type: SPV 175M-24
	Quantity: 576
Angles:	Mounting Tilt: 32°
	Azimuth: 0°



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