

SMA Power Control Module

Multi-function Interface for PV Inverters

SUNNY BOY / SUNNY TRIPOWER



Content

This document describes the fields of application and functions of the SMA Power Control Module.

The SMA Power Control Module is a multi-function interface which enables grid management services for one inverter, thus fulfilling, among others, the requirements of the German Renewable Energy Sources Act 2012 (EEG 2012). In addition, the SMA Power Control Module is equipped with a multi-function relay to process various operating states of the inverter. You will find information on how to install the SMA Power Control Module in the installation manual (see www.SMA-Solar.com).

As of firmware version V 2.50, the following SMA inverters can be ordered ex works with the SMA Power Control Module or retrofitted with the SMA Power Control Module (see update files at www.SMA-Solar.com):

Sunny Boy	Sunny Tripower
• SB 2500TLST-21 • SB 3000TLST-21 • SB 3000TL-21 • SB 3600TL-21 • SB 4000TL-21 • SB 5000TL-21	• STP 8000TL-10 • STP 10000TL-10 • STP 12000TL-10 • STP 15000TL-10 • STP 17000TL-10 • STP 15000TLHE-10 • STP 20000TLHE-10 • STP 15000TLEE-10 • STP 20000TLEE-10

The SMA Power Control Module can be configured with the following SMA communication products:

- Sunny Explorer from software version 1.04
- Sunny WebBox
- Sunny WebBox with *Bluetooth*® as of firmware version 1.03

1 Requirements and Fields of Application

Requirements of the EEG 2012

The Renewable Energy Sources Act (EEG) as amended mid-2011 and in force since the beginning of 2012 also includes new requirements regarding the grid integration of PV plants. It stipulates that PV plants with more than 100 kW peak power must participate in feed-in management and, at the same time, extends this requirement to smaller PV plants – albeit in somewhat less stringent form: for instance, there is no longer any obligation to let the distribution network operator retrieve the current actual power of the plant. For PV plants with less than 30 kWp, plant operators may moreover skip installing a device for remote power limitation, providing that they accept a general limitation of feed-in capacity to 70% of the installed generator power.

PV plants between 30 kWp and 100 kWp must be retrofitted by the end of 2013 if they were commissioned after 31 December 2008. For plants with less than 30 kWp, no mandatory retrofitting applies.

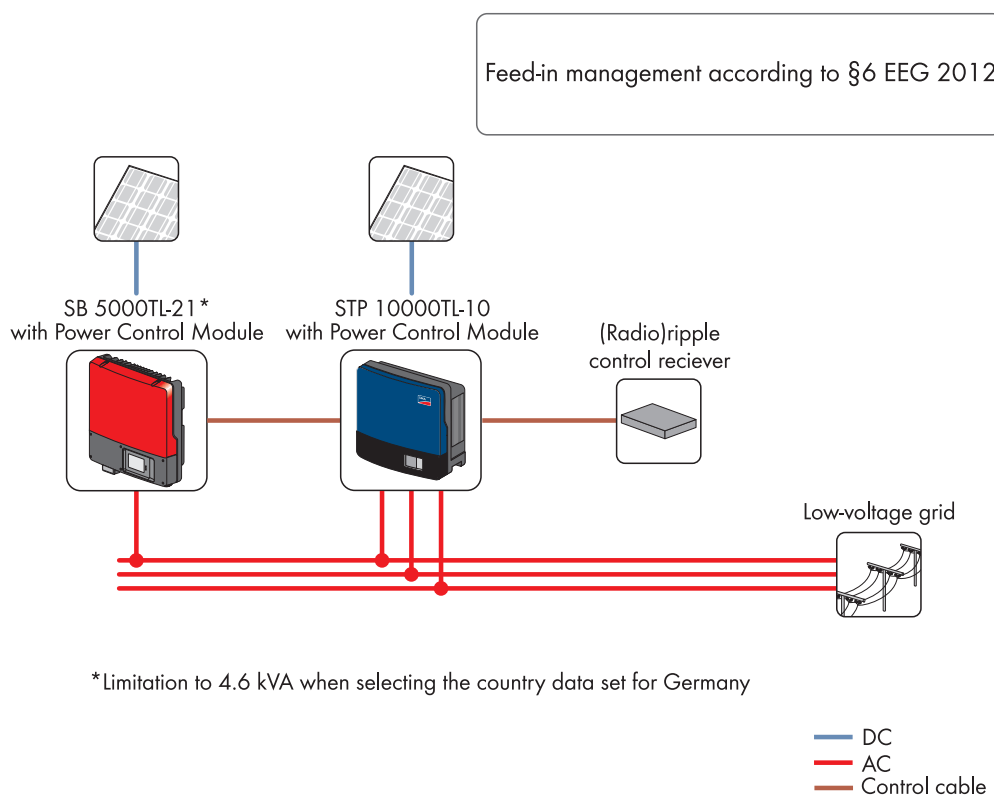


Figure 1: Example of a PV plant with feed-in management according to §6 EEG 2012

Grid Management with SMA Power Control Module

For the implementation of grid management, the SMA Power Control Module is equipped with four digital inputs to fulfil the specifications of the network operator. You can implement one of the following grid management services with the SMA Power Control Module:

- In Germany: remote active power limitation in the stages 0%, 30%, 60% and 100% of the agreed connected active power.
- In Italy for PV plants with a power output of max. 6 kW:
 - Remote shutdown within 50 ms
 - Reduction of frequency limits to between 49.5 Hz and 50.5 Hz

Multi-function Relay in the SMA Power Control Module

The SMA Power Control Module is equipped with a multi-function relay which can be used for various purposes:

- Fault indicator or operation indicator
- Control of external loads
- Charging the battery
- Reporting switching status of grid relay

2 Technical Data

Inputs

Type	4 digital inputs
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Voltage Supply

Voltage Supply	Via inverter
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Output

Type	Monostable relay
Maximum DC switching voltage	30 V
Maximum DC switching current	1.0 A
Terminal	3-pole plug
Minimum electrical endurance when the maximum switching voltage and maximum switching current are complied with	100,000 switching operations

General Data

Dimensions (width x height x depth)	58 mm x 115 mm x 31 mm
Weight	49 g
Installation location	In the inverter
Degree of protection according to IEC 60529	IP20
Required degree of protection of the inverter according IEC 60629	IP65

Ambient Conditions for Storage, Transport

Ambient temperature	– 40°C ... +70°C
Relative humidity, non-condensing	10% ... 95%
Maximum height above sea level (MSL)	3,000 m

Ambient Conditions during Operation

Ambient temperature	– 25°C ... +85°C
Relative humidity, non-condensing	4% ... 100%
Maximum height above sea level (MSL)	3,000 m

Available for the following inverters

SUNNY BOY	SB 2500TLST-21, SB 3000TLST-21, SB 3000TL-21, SB 3600TL-21, SB 4000TL-21, SB 5000TL-21
SUNNY TRIPOWER	STP 8000TL-10, STP 10000TL-10, STP 12000TL-10, STP 15000TL-10, STP 17000TL-10, STP 15000TLHE-10, STP 20000TLHE-10, STP 15000TLEE-10, STP 20000TLEE-10
Maximum number of Power Control Modules connected in parallel	5

Type designation

Type designation	PWCMOD-10
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Status: July 2012