



Manufacturer Declaration

Compliance of Sunny Boy, Sunny Mini Central and Sunny Tripower inverters with the requirements of the State of Israel - The Ministry of Energy and Water Resources (Document HS_131_2013)

The requirements of the document "*Guidelines Intended for Importers, Installers and Owners of Electricity Generation Facilities which use Photovoltaic Technologies on the subject of Adjustment of Photovoltaic Inverters*" (document HS_131_2013) published May 23, 2013 by the Israeli "Ministry of Energy and Water Resources" are complied with in their entirety or with minor limitations by the SMA inverters listed below.

Requirements:

1. Frequency monitoring (f mon): expansion of the range for feed-in with disconnection at underfrequencies lower than 47 Hz in max. 1 s and at overfrequencies larger than 51.5 Hz in max. 0.2 s.
2. Power reduction at rising frequency (P(f) function): reduction of active power with a gradient of 67% Pmax/Hz when the frequency increases to values above 50.2 Hz.
3. Voltage monitoring (V mon): grid disconnection at undervoltage or overvoltage as listed in Table 2 (response to abnormal voltage)

Inverter types (inverter family)	Firmware version	Requirement of HS_131_2013 document		
		f mon	P(f)	V mon
SB 1200, SB 1700	≥ 4.00	✓	✓	✓
SB 1300TL-10, SB 1600TL-10, SB 2100TL	≥ 4.00	✓	✓	✓
SB 2500, SB 3000	≥ 4.00	✓	✓	✓
SB 2000HF-30, SB 2500HF-30, SB 3000HF-30	≥ 2.30	✓	✓	✓
SB 2500TLST-21, SB 3000TLST-21	≥ 2.00	✓	✓	✓
SB 3300, SB 3800	≥ 3.02	✓	x	✓
SB 3000TL-21, SB 3600TL-21, SB 4000TL-21, SB 5000TL-21, SB 6000TL-21	≥ 1.53	✓	✓	✓
SB 3000TL-20, SB 4000TL-20, SB 5000TL-20	≥ 3.10	✓	✓	✓
SMC 4600A, SMC 5000A, SMC 6000A	≥ 1.36	✓	(✓)	✓
SMC 4600A-11, SMC 5000A-11, SMC 6000A-11	≥ 2.17	✓	✓	✓
SMC 6000TL, SMC 7000TL, SMC 8000TL	≥ 3.32	✓	(✓)	✓
SMC 7000HV	≥ 1.81	✓	(✓)	✓
SMC 7000HV-11	≥ 1.03	✓	(✓)	✓

Inverter types (inverter family)	Firmware version	Requirement of HS_131_2013 document		
		f mon	P(f)	V mon
SMC 9000TL-10, SMC 10000TL-10, SMC 11000TL-10	≥ 1.24	✓	(✓)	✓
STP 5000TL-20, STP 6000TL-20, STP 7000TL-20 STP 8000TL-20, STP 9000TL-20, STP 10000TL-20	≥ 2.00	✓	✓	✓
STP 8000TL-10, STP 10000TL-10, STP 12000TL-10 STP 15000TL-10, STP 17000TL-10	≥ 2.40	✓	✓	✓
STP 15000TLEE-10, STP 20000TLEE-10	≥ 1.00	✓	✓	✓

Legend of symbols used:

- ✓ Requirement fully met
- (✓) Requirement met with minor limitations. (The specific limitations are described below)
A P(f) procedure is implemented in these inverter types. With corresponding parameterization, the power reduction with a gradient of 67% Pmax/Hz is performed at a frequency increase in accordance with the requirement. The only limitation here is that, if the frequency is subsequently reduced, the power will not be increased with a gradient of 67%, but will remain at the minimum value until the frequency drops below a configurable threshold (e.g. 50.2 Hz).
- * Requirement not met

Niestetal, May 14, 2014

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