



Perfection Plus. Usability.



The New Generation of SUNNY BOY

# Perfection Plus. Usability.

## The New Generation of SUNNY BOY



### **The perfect combination.**

**Leading-edge technology meets user convenience.**

Whether grid-connected or off-grid, on a kilowatt or megawatt scale – for almost thirty years we have been developing and manufacturing solar inverters which are used in PV plants and solar power stations worldwide with a total installed overall power amounting to over three gigawatts. A continuous process of innovation has made us market leader in the solar technology, and has brought forth products which outclass all other available devices as far as efficiency, reliability and environmental friendliness are concerned.

And there are good reasons for this: the Sunny Boy 3000TL, 4000TL and 5000TL are the result not only of nearly 30 years' experience in the design of PV inverters and the combined know-how of more than 500 engineers. But also thanks to your feedback and ideas the new-generation Sunny Boy inverters have attained their unique level of user convenience. It's time you get to know them:

### **The SUNNY BOY 3000TL, 4000TL, 5000TL**

The first devices of a new SMA inverter generation. No other devices on the market offer you this level of user friendliness coupled with state of the art technology and a brand-new communication and mounting concept.



**Cutting-edge technology**

Maximum efficiency of 97 percent with a wide input voltage range



**Ease of installation**

New mounting concept and intelligent design



**Communication**

*Bluetooth*<sup>®</sup> technology and graphic display



**Universal**

Simple country configuration



## Cutting-Edge Technology

### **Performance that Pays Off. High-tech Innovation Made by SMA.**

The latest leading-edge technology from SMA, as well as the accumulated know-how from nearly 30 years' leadership in inverter technology, have gone into the new generation of Sunny Boy inverters. That's why they are once again breaking records in terms of efficiency and flexibility of use.

### **Your Advantages:**

- Optimum solar yield due to peak efficiencies of 97 percent with a wide input voltage range
- Highest flexibility for plant configuration due to multi-string technology (Sunny Boy 4000TL and Sunny Boy 5000TL)
- All features standard, no retrofitting necessary
- Best tracking efficiency for solar inverters with the new MPP tracker: OptiTrac Global Peak



## Optimized efficiency

With maximum efficiency now boosted to 97 percent, the Sunny Boy inverters are amongst the devices with the highest efficiency on the market, and thus ensure your customers an optimum return even with complex plant configurations.

## Multi-string technology

The Sunny Boy 4000TL and 5000TL are designed as multi-string devices with two independent DC converters. This makes highly complex generator configurations easy to implement. The Sunny Boys' increased input voltage of 2 x 15 A and their wide input current range provide practically unlimited flexibility when designing your plant.

## SMA know-how in a single device

All in all, the comprehensive range of technical features in the new Sunny Boy make it not only convenient and user-friendly, it also sets unsurpassed standards for quality and reliability.

## High-tech is our standard

Each device is equipped with all the latest features of SMA inverter technology:

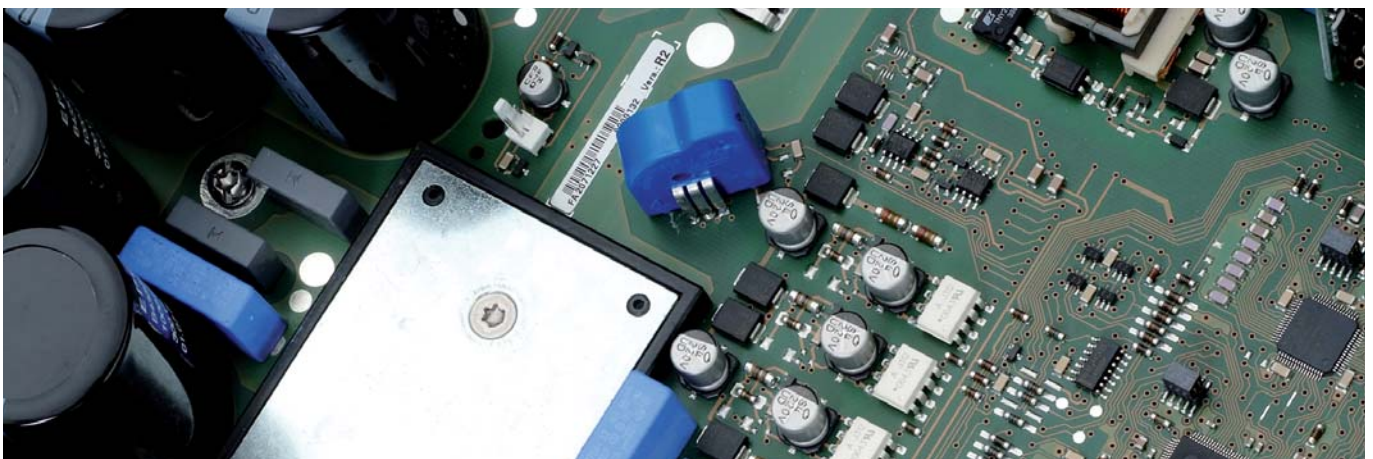
- Integrated DC disconnection unit ESS
- MPP tracker: OptiTrac Global Peak
- Cooling system: OptiCool
- Switching concept: H5 topology

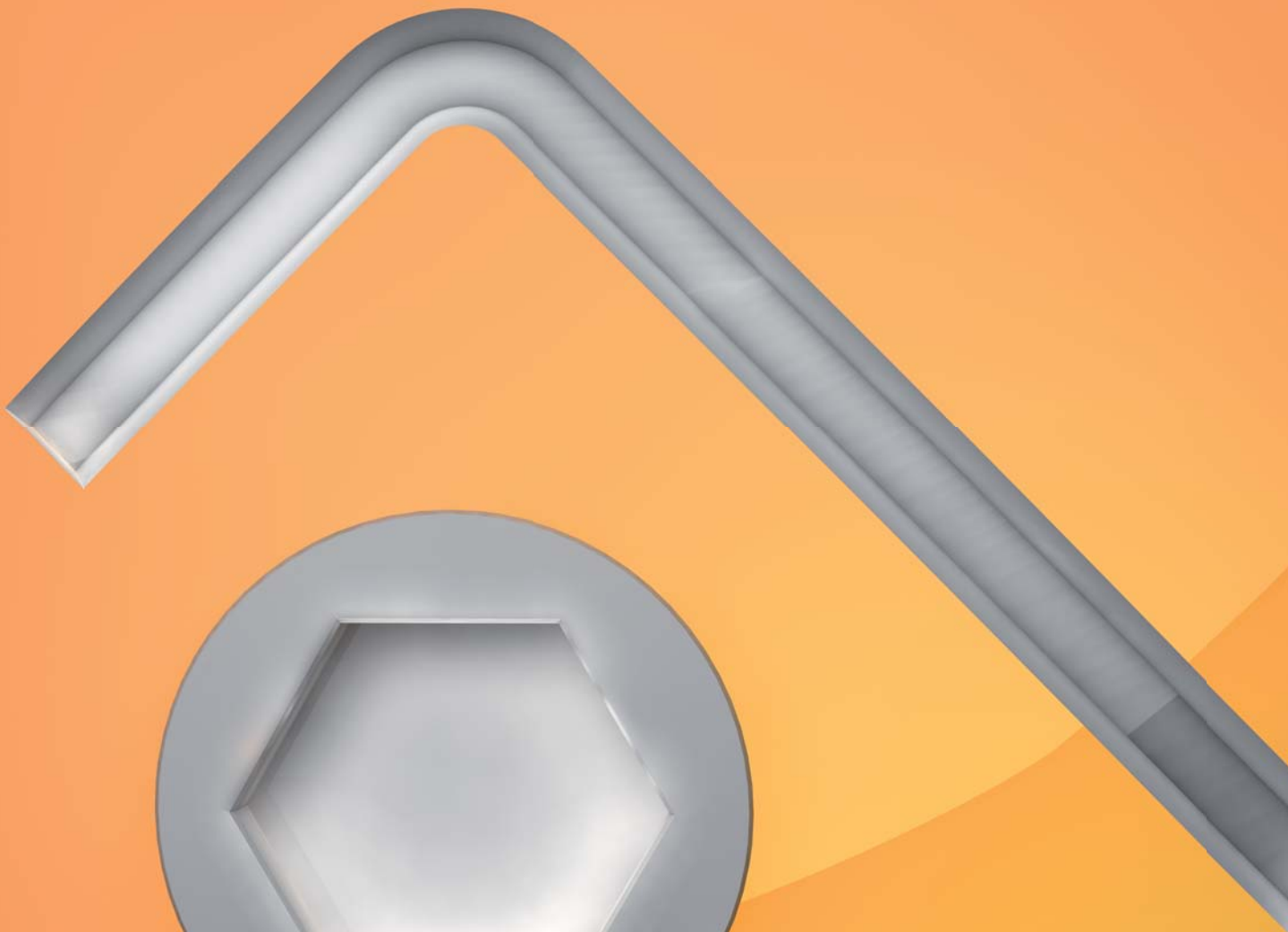
There is no question: you and your customers will just love the Sunny Boy 3000TL, 4000TL and 5000TL models!

## SMA Solar Academy find out more here

If you would like to get better acquainted with the new-generation Sunny Boy inverters, why not attend one of our basic or intensive "Inverter" seminar programs. Here, SMA specialists will explain all you need to know about the new generation – in easy to understand, all-encompassing units, in tune with field practice. For dates and further information please visit:

[www.SMA.de/Solar-Akademie](http://www.SMA.de/Solar-Akademie)





# Ease of installation

## **Quick as a Flash. Anywhere.**

The new generation of Sunny Boy inverters will revolutionize your installation. Besides a completely new mounting and wiring concept, we have not only made the devices 20 percent lighter, but we have also reduced their volume. And in terms of theft protection the Sunny Boy 3000TL, 4000TL and 5000TL leave nothing to be desired.

## **Your Advantages:**

- Simple installation due to innovative mounting concept
- Special SMA clamp connectors enable rapid cabling without the use of tools
- Field plugs for the DC plug system SUNCLIX are included
- Mounting on standard wall mounting bracket
- Effective anti-theft protection
- Ergonomic design
- Ideal for outdoor installation



### Innovative mounting concept

The convenient built-in front wiring compartment enables quick and easy cabling. At the same time, the power electronics are still protected from dirt and weather conditions in the IP65 protection standard section of the enclosure. The innovative design of the back surface of the inverter includes an integrated guard to prevent unwanted removal and allows secure installation almost anywhere.

### New cabling concept

The special spring-clamp terminals for the AC connection are yet another SMA innovation. They enable rapid wiring without the use of tools and assure a

heavy-duty connection of the cables. This means less cabling work, yet still greater reliability: each generator port has two connector pairs and is equipped with an easy-to-use snap connector system.

### Effective theft protection

Recommended by the leading insurers of solar systems, the new, standard anti-theft feature reduces the insurer's risk - and your customers profit from lower insurance premiums.

### Easy plant monitoring

The multi-function relay integrated into the Sunny Boy 3000TL, 4000TL and 5000TL is used to control your electrical consumers and offers another easy

form of plant monitoring by means of a dry signal contact, which can be used to trigger an acoustic signal or warning light if required.

### Ergonomic design

We have considerably reduced the weight and volume of the Sunny Boy by introducing a new, die-cast casing of pleasing design. This not only makes installation easier in locations with difficult access, but also reduces transport and storage costs.





# Communication

## **Intelligently Connected. Beyond Boundaries.**

Radio waves instead of wires – *Bluetooth* is the magic word. Every new-generation Sunny Boy is equipped with this innovative wireless standard. SMA is the first manufacturer to offer you completely new options in wireless plant monitoring. In addition, we have made the display even more user friendly and implemented some attractive extras. Your customers will love it.

### **Your Advantages:**

- Wireless service interface *Bluetooth*
- Radio-based plant monitoring with Sunny Beam and Sunny WebBox
- Service, maintenance and plant diagnosis via notebook or PC, if desired
- Reliable data transfer via proven wireless technology
- Long-range reception enabled by automatic cross-linking
- Graphic display: complete data at a glance
- Convenient display of daily values even after sunset





## Wireless plant diagnosis and maintenance with *Bluetooth*

If required, you can connect any Sunny Boy to a notebook or PC – and use this for wireless plant diagnosis. From device configuration, reading off current performance data, through to firmware updates – *Bluetooth* gives you easy, fast and reliable wireless control over any PV system. Special SMA technology enables the interactive communication of up to 50 inverters and the fast, safe transfer of high data volumes via *Bluetooth*.

## Two communication interfaces

Your customers love the Sunny Beam and want to use the Sunny WebBox as a powerful data logger? No problem at all. Just connect both the Sunny Beam and the Sunny WebBox and they will be able to communicate via *Bluetooth*.

## Easy retrofitting

Need to enlarge an existing plant? Again not a problem. The new Sunny Boy generation can be integrated into any existing PV plant and its communication features will be compatible with all previous SMA devices. Yours to decide: use proven SMA technology as you have in the past, or retrofit your wire-based communication facility via RS485.

## Easy-to-read graphic display

Complete data at a glance: current performance data is now presented in chart form on a graphic display, thus giving you fast, user-friendly and easy to grasp updates on plant status. Additional information in the chosen language, can be shown in a supplementary text line on the display screen. Incidentally, from now on your customers can monitor operating performance and all relevant daily values even at night with a display that still works after sunset.



reddot design award  
honourable mention 2009





# Universal

## **International Configuration. The World at the Flick of a Switch.**

English, Spanish or German required? The Sunny Boy speaks every language. Highly innovative SMA technology in the new Sunny Boy generation enables you to configure country settings more easily and conveniently than ever.

### **Your Advantages:**

- Easy country configuration without connecting the device
- Cost reduction due to simplified logistics and international compatibility
- Wireless *Bluetooth* standard enables implementation worldwide

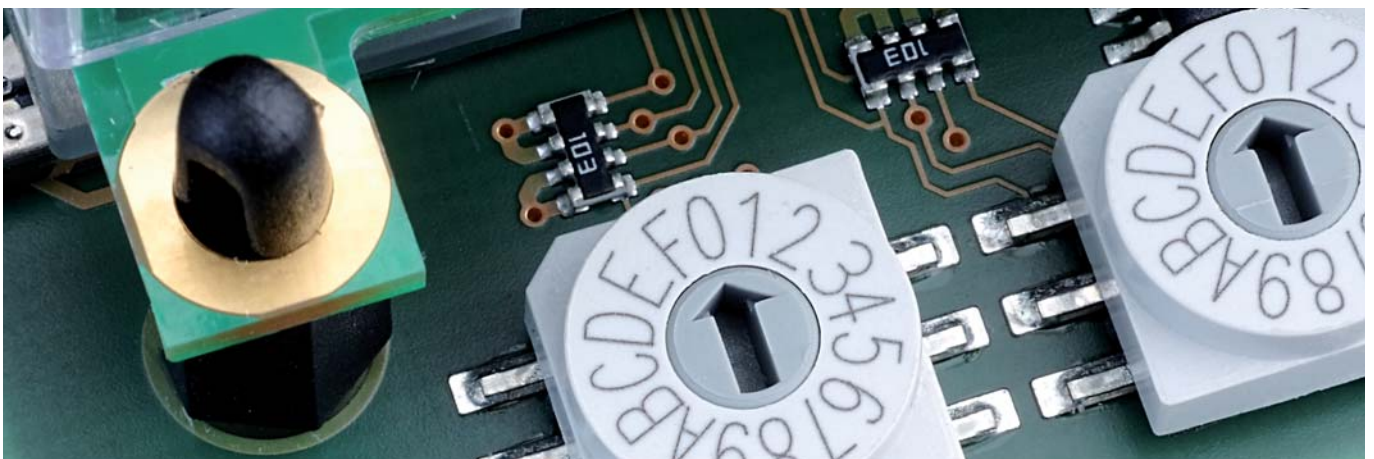


### Simple country configuration

Two switches – it's that simple: select the respective country code and set the appropriate country configuration regardless of your location – no need for any power supply or prior commissioning of the inverter. Above all, distributors will benefit from the tangible cost reductions brought about by the universality of the device and the simplified logistics involved – the secret being that the configuration of country settings is carried out by the contractor during commissioning on-site.

### Worldwide implementation

Since wireless *Bluetooth* technology uses a globally available frequency band, all devices which communicate via *Bluetooth* operate worldwide. The country settings include the automatic configuration of the language for the selected country. Of course, Sunny Boy inverters are also fully equipped to deal with grid parameters in an international context: they are able to feed solar energy into practically any grid without a problem.



# The New Generation of SUNNY BOY

Technical data	Sunny Boy 3000TL	Sunny Boy 4000TL	Sunny Boy 5000TL
<b>Input (DC)</b>			
Max. DC power (@ cos φ = 1)	3200 W	4200 W	5300 W
Max. DC voltage	550 V	550 V	550 V
MPP voltage range	188 V - 440 V	175 V - 440 V	175 V - 440 V
DC nominal voltage	400 V	400 V	400 V
Min. DC voltage / start voltage	125 V / 150 V	125 V / 150 V	125 V / 150 V
Max. input current / per string	17 A / 17 A	2 x 15 A / 15 A	2 x 15 A / 15 A
Number of MPP trackers / strings per MPP tracker	1 / 2	2 / A: 2, B: 2	2 / A: 2, B: 2
<b>Output (AC)</b>			
AC nominal power (@ 230 V, 50 Hz)	3000 W	4000 W	4600 W
Max. AC apparent power	3000 VA	4000 VA	5000 VA
Nominal AC voltage; range	220, 230, 240 V; 180 - 280 V	220, 230, 240 V; 180 - 280 V	220, 230, 240 V; 180 - 280 V
AC grid frequency; range	50, 60 Hz; ± 5 Hz	50, 60 Hz; ± 5 Hz	50, 60 Hz; ± 5 Hz
Max. output current	16 A	22 A	22 A
Power factor (cos φ)	1	1	1
Phase conductors / connection phases	1 / 1	1 / 1	1 / 1
<b>Efficient</b>			
Max. efficiency / Euro-Eta	97.0 % / 96.3 %	97.0 % / 96.4 %	97.0 % / 96.5 %
<b>Protective devices</b>			
DC reverse-polarity protection	●	●	●
ESS switch-disconnector	●	●	●
AC short circuit protection	●	●	●
Ground fault monitoring	●	●	●
Grid monitoring (SMA Grid Guard)	●	●	●
Galvanically isolated / All-pole-sensitive residual current monitoring unit	-/●	-/●	-/●
Protection class / overvoltage category	I / III	I / III	I / III
<b>General data</b>			
Dimensions (W / H / D) in mm	470 / 445 / 180	470 / 445 / 180	470 / 445 / 180
Weight	22 kg	25 kg	25 kg
Operating temperature range	-25 °C ... +60 °C	-25 °C ... +60 °C	-25 °C ... +60 °C
Noise emission (typical)	≤ 25 dB(A)	≤ 29 dB(A)	≤ 29 dB(A)
Internal consumption (at night)	< 0.5 W	< 0.5 W	< 0.5 W
Topology	Transformerless	Transformerless	Transformerless
Cooling concept	convection	OptiCool	OptiCool
Electronics protection rating / connection area (per IEC 60529)	IP65 / IP54	IP65 / IP54	IP65 / IP54
Climatic category (per IEC 60721-3-4)	4K4H	4K4H	4K4H
<b>Features</b>			
DC connection: SUNCLIX	●	●	●
AC connection: screw terminal / plug connector / spring-type terminal	-/-/●	-/-/●	-/-/●
Display: text line / graphic	-/●	-/●	-/●
Interfaces: RS485 / Bluetooth®	○/●	○/●	○/●
Warranty: 5 / 10 / 15 / 20 / 25 years	●/○/○/○/○	●/○/○/○/○	●/○/○/○/○
Certificates and permits (more available on request)	CE, VDE 0126-1-1, DK 5940, RD 1663, G83/1-1, PPC, AS4777, EN 50438*, C10/C11, PPDS		
* Does not apply to all national annexes to EN 50438			
● Standard features ○ Optional features – not available			
Data at nominal conditions			
Type designation	SB 3000TL-20	SB 4000TL-20	SB 5000TL-20

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