



# SUNNY BOY



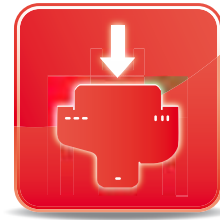
The same. Only better.



**More efficient**  
thanks to its 750 V DC input voltage



**More flexible**  
thanks to multi-string technology



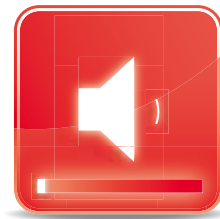
**Easier**  
thanks to an innovative mounting concept



**Universally applicable**  
thanks to integrated grid management



**Multilingual**  
thanks to international graphics



**Low noise**  
thanks to fanless operation



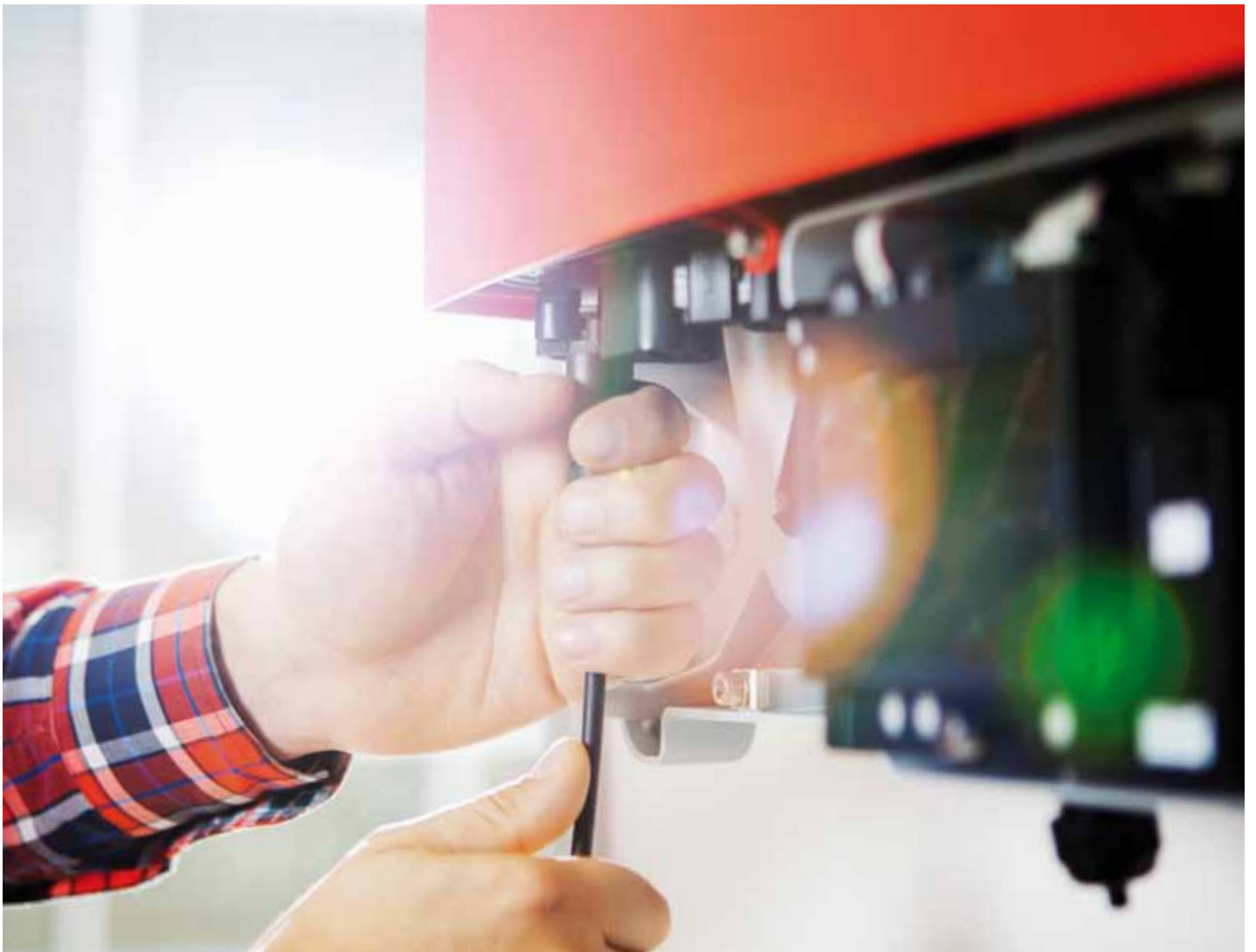
## THE SAME. ONLY BETTER. THE SUNNY BOY

### Rely on proven innovation

You're already familiar with version 20 of the Sunny Boy 3000/4000/5000TL, Europe's most successful PV inverter for residential systems. With good reason, you rely on the proven technology and intelligent concepts these inverters contain. Simple installation, a user-friendly graphic display, wireless communication via *Bluetooth*<sup>®</sup> and outstanding efficiency make it the first choice for solar installers and users. Now there is a worthy successor: meet version 21 of the Sunny Boy.

### The same superior quality

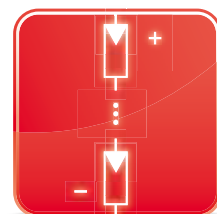
The new Sunny Boy with Reactive Power Control offers features that make it more economical and simple, as well as universally applicable and multilingual. The result: even more project flexibility, increased efficiency that produces additional yield and added convenience when designing and installing. With the world market leader, you can continue to rely on cutting-edge technology that sets the standard. On concepts you can count on. On details that are simply superior. As we said: It's the Sunny Boy. The same. Only better.



## MORE EFFICIENT THANKS TO ITS 750 V DC INPUT VOLTAGE

### Turning up the voltage

Less is more. Thanks to the higher 750 volt maximum DC input voltage, often times one less module string is needed because more modules can be switched on in a series. The added design flexibility this offers saves time and reduces cabling work – and therefore costs as well. In addition, the 97 percent maximum efficiency ensures top solar yield.





## MORE FLEXIBLE THANKS TO MULTI-STRING TECHNOLOGY

### Full power in partial shading

Flexibility in planning, installation, and also when it comes to sunshine – the advantages of multi-string technology in the new transformerless Sunny Boy are also available in the 3 kW model. This guarantees both optimum yield in partial shading and efficient operation of east-west arrays. And what's more, the two MPP trackers feature the expanded OptiTrac™ Global Peak operational control, which is specially designed for tricky shading situations. It ensures that the maximum yield of solar power is always harvested.



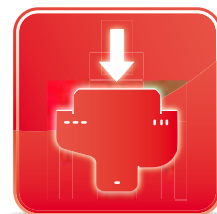




## EASIER THANKS TO AN INNOVATIVE MOUNTING CONCEPT

### Fitting: the new wall mount

The wall mount also features some groundbreaking changes. The simplicity of inserting the inverter into the top of the modified wall mount does more than just make installation easier. It also guarantees the ability to attach it quickly and professionally – even on walls that are not perfectly straight. The popular anti-theft option offered in the previous model is also still available.





# UNIVERSALLY APPLICABLE THANKS TO INTEGRATED GRID MANAGEMENT

## Intelligent controls thanks to reactive power

Thanks to its integrated grid management functions, the new Sunny Boy with Reactive Power Control offers universal deployment options and adds significantly to grid support. The capability to reduce voltage via reactive power also offers direct benefits to the operator: The plant very seldom disconnects from the grid even in problematic grid sections, and system profitability increases.





# MULTILINGUAL THANKS TO INTERNATIONAL GRAPHICS CHARACTERS

## Understandable worldwide

The dot matrix graphic display is even more clearly organized and is able to perfectly present any letter or symbol. This allows it to always get the point across, regardless of whether it uses Latin or Cyrillic letters, or Japanese characters. Thai, Hebrew and Arabic will follow with upcoming software updates.



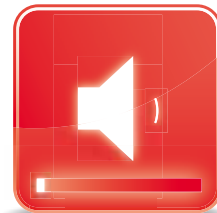




## LOW NOISE THANKS TO FANLESS OPERATION

### Suitable for inside the home

When it comes to fans, the focus is on the (almost) unavoidable noise. The new transformerless Sunny Boy works so efficiently that its cooling concept no longer requires the usual fan. The result: the device is nearly silent and also requires less service.





## WELL PLANNED THANKS TO SUNNY DESIGN 2

**Ideal design for all PV plants –  
simple, fast and customized**

Would you like to handle the planning for your PV plant, down to the last detail? Sunny Design is perfectly suited to do just that. Simply enter the required parameters and data, and in just a few minutes you will be shown the optimum plant configurations. This free software provides you with a user-friendly interface as well as information for assessing the economics of the plant.





## WORLDWIDE SERVICE EXCELLENCE

### SMA SERVICE

If you depend on long-term solar yield, you need both cutting-edge technology and a reliable partner at your side who provides you with expert advice and service. From guidance over the phone from the SMA Service Line to on-site service and device replacement, SMA offers all the professional services you need from a single source. This promise stands for the duration of the five-year factory warranty, or even longer since it is possible to extend the period, until the last day of the initial warranty, by up to 10, 15, 20 or 25 years.

#### **Device replacement – high standards for reliable system production**

Should a failure occur, we will keep costs and downtimes at a minimum by replacing your device. A replacement inverter, with all necessary updates, is generally shipped the same day a service request comes in by phone or from the web. If a

device is replaced within the warranty period, the remaining warranty period is transferred to the replacement device. In any event, we provide a full one-year warranty on all replacement devices whether or not the original warranty is still valid.

#### **On-site service – Expert support**

You can rely on our support: Our well-developed international service network boasts numerous access points, currently in 18 countries. This safeguards the smooth operation of your customers' PV plants – worldwide.

#### **Our Service Line – answers by phone**

Do you have questions about the installation and commissioning of PV plants, or do you need tips on plant monitoring? Our Service Line can help! Get the answers you need by calling us. We also support

you if an inverter stops functioning as it should, and will work with you to find the optimal solution!

#### **SMA warranty – long-term security**

SMA products meet the highest quality standards and come with a standard five-year factory warranty. We also offer extended warranties that ensure operators the right to free repair or a replacement device for a period of 10, 15, 20 or 25 years. For complete information, visit our Online Service Center at [www.SMA.de/Service](http://www.SMA.de/Service).

# Technical Data

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	5250 W**
Max. input voltage	750 V	750 V	750 V
MPP voltage range / rated input voltage	175 V - 500 V / 400V	175 V - 500 V / 400 V	175 V - 500 V / 400 V
Min. input voltage / initial input voltage	125 V / 150 V	125 V / 150 V	125 V / 150 V
Max. input current input A / input B	15 A / 15 A	15 A / 15 A	15 A / 15 A
Max. input current per string input A / input B	15 A / 15 A	15 A / 15 A	15 A / 15 A
Number of independent MPP inputs / strings per MPP input	2 / A:2; B:2	2 / A:2; B:2	2 / A:2; B:2
<b>Output (AC)</b>			
Rated output power (@ 230 V, 50 Hz)	3000 W	4000 W	4600 W
Max. apparent AC power	3000 VA	4000 VA	5000 VA***
Nominal AC voltage / range	220V, 230 V, 240 V / 180 V - 280 V	220V, 230 V, 240 V / 180 V - 280 V	220V, 230 V, 240 V / 180 V - 280 V
AC power frequency / range	50 Hz, 60 Hz / -5 Hz ... +5 Hz	50 Hz, 60 Hz / -5 Hz ... +5 Hz	50 Hz, 60 Hz / -5 Hz ... +5 Hz
Rated power frequency / rated power voltage	50 Hz / 230 V	50 Hz / 230 V	50 Hz / 230 V
Max. output current	16 A	22 A	22 A
Power factor at rated power	1	1	1
Adjustable displacement factor	0,8 overexcited ... 0,8 underexcited	0,8 overexcited ... 0,8 underexcited	0,8 overexcited ... 0,8 underexcited
Feed-in phases / connection phases	1 / 1	1 / 1	1 / 1
<b>Efficiency</b>			
Max. efficiency / European efficiency	97 % / 96,0 %	97 % / 96,4 %	97 % / 96,5 %
<b>Protection</b>			
Input-side disconnection device	●	●	●
Ground-fault monitoring / grid monitoring	● / ●	● / ●	● / ●
DC surge arrester Type II, can be integrated	—	—	—
DC reverse-polarity protection / AC short-circuit current capability / galvanically isolated	● / ● / —	● / ● / —	● / ● / —
All-pole sensitive residual current monitoring unit	●	●	●
Protection class (according to IEC 62103) / overvoltage category (according to IEC 60664-1)	I / III	I / III	I / III
<b>General Data</b>			
Dimensions (W / H / D)	490 / 519 / 185 mm (19,3 / 20,4 / 7,3 in)	490 / 519 / 185 mm (19,3 / 20,5 / 7,3 in)	490 / 519 / 185 mm (19,3 / 20,5 / 7,3 in)
Weight	26 kg / 57,3 lb	26 kg / 57,3 lb	26 kg / 57,3 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	25 dB(A)	25 dB(A)	25 dB(A)
Self-consumption (night)	1 W	1 W	1 W
Topology	Transformerless	Transformerless	Transformerless
Cooling concept	Convection	Convection	Convection
Degree of protection (according to IEC 60529)	IP65	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP54	IP54	IP54
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %	100 %
<b>Features</b>			
DC terminal	SUNCLIX	SUNCLIX	SUNCLIX
AC terminal	Spring-type terminal	Spring-type terminal	Spring-type terminal
Display	Graphic	Graphic	Graphic
Interface: RS485 / Bluetooth®	○ / ●	○ / ●	○ / ●
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Multi-function relay	●	●	●
Certificates and approvals (more available on request)	CE, VDE0126-1-1, C10/11, VDE-AR-N 4105		
Certificates and approvals (planned)	G83/1-1, RD 661/2007, PPC, AS 4777, EN 50438*, PPDS, IEC 61727, SI4777, UTE C15-712-1, G59/2, CEI 0-21, RD1699		
Type designation	SB 3000TL-21	SB 4000TL-21	SB 5000TL-21

\* Does not apply to all national deviations of EN 50438 \*\* 4825 W bei VDE-AR-N 4105 \*\*\* 4600 VA with VDE-AR-N 4105

● Standard features ○ Optional features — Not available Provisional data, as of march 2012, Data at nominal conditions

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