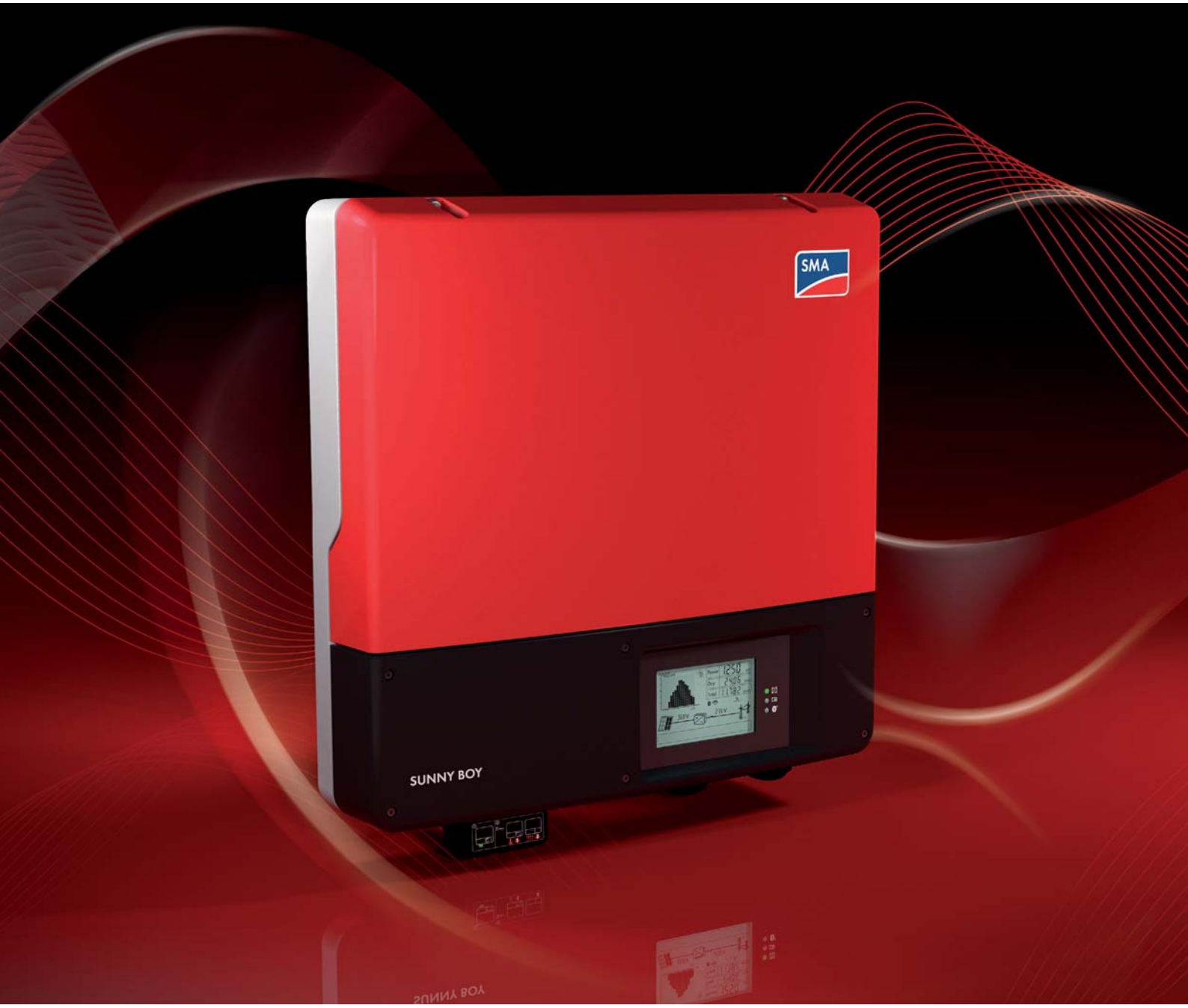
EN

Medium Power Solutions



THE FUTURE OF SOLAR TECHNOLOGY

SUNNY FAMILY 2011/2012

Medium Power Solutions

In this catalog you will find all products and services necessary for planning and designing PV plants for residential and industrial applications. These include the Sunny Boy, Sunny Mini Central and Sunny Tripower inverters as well as all monitoring systems and Sunny Backup products.

Power Plant Solutions

This catalog presents the complete range of products and services for PV power stations. This does not only include all central inverters, but also all devices for local plant applications such as the Sunny Tripower and Sunny Mini Central inverters. On these pages you will also find the appropriate monitoring system products.

Off-Grid Solutions

Here you will find all components and services connected with off-grid system solutions. These include Sunny Island inverters acting as grid-forming inverters, PV inverters, small wind-turbine inverters, backup systems and fuel cell inverters, as well as the corresponding monitoring system products.

Compendium

By means of this compendium, we would like to share our knowledge with you. As a supplement to the standard literature on solar technology, you will find on these pages key information helping you to construct and operate an optimally-designed PV plant with SMA components. Thus, it will give you background information on grid management, how to combine inverters with specific module types, and off-grid systems.

CONTENTS

Innovative Solutions and Genuine Partnership

Due to the growth of photovoltaics, it is becoming increasingly important for inverters to participate in grid management. In the past, this applied to plants feeding the grid on the medium-voltage level. In future, however, there will also be an increased requirement for plants to be integrated in low-voltage grids – in Germany, this will be mandatory already from July 01, 2011. This means, for instance, that inverters in the lower power classes will also have to be capable of supplying reactive power.

The Sunny Boy 3000TL, 4000TL and 5000TL with Reactive Power Control provide a solution which already fulfills the criteria of the German Low-Voltage Directive before it actually comes into force. Thus, we are the first inverter manufacturer with products meeting these requirements. It was the same story when the Medium-Voltage Directive came into effect: there, we were also the first company to launch suitable devices in the market. The three-phase Sunny Tripower has been issued the Unit Certificate as required under the German Medium-Voltage Directive, and is equipped with a full dynamic grid-support function. Incidentally, this award-winning inverter is from now on also available in the 8000TL version. Again we are expanding our wide product range, and with these products contributing significantly to making photovoltaics a competitive technology of the future.

However, SMA not only supplies high technology, but it also provides you with extensive support for your day-to-day business. To do this, we have built up a worldwide service network to provide you with support directly on-site, or via our free SMA Serviceline. Our understanding of partnership means also sharing our knowledge with you. After all, in the dynamic solar technology industry, what is true today may already be outdated tomorrow. In the SMA Solar Academy, we offer more than 100 different training courses with over 24,000 participants worldwide on all aspects of photovoltaics and our products, thus keeping you informed on latest developments and giving you that decisive head start. To be successful in the dynamic PV market of the future, you will need to have the leading edge over your local competitors. Therefore the telling factor is a professional marketing strategy. And here the Sunny PRO Club can assist you with its services for developing market potential which are specifically tailored to the needs of solar power professionals. This is a win-win situation: you save time and also gain new customers.

And last but not least: this time, our Sunny Family catalog has been divided up according to market segments. Your benefit: you can see at a glance which products are suitable for a residential or commercial system.

We look forward to continuing our partnership in taking photovoltaics a further step forward.

Marko Werner
Chief Sales and Marketing Officer

SMA PV Inverters – the Heart of Every PV Plant

The first PV inverter was one of ours. Today, SMA PV inverters are the product of 30 years of experience. With 14.9 gigawatts of installed PV power, we play a leading role in the success of photovoltaics. An important reason for this is that we invest substantially into research and development. More than 600 developers are working to make our devices even more user-friendly and further cost-effective.

Investment security and fast amortization

With a service life of more than 20 years and over 98 percent efficiency, SMA products set the standards in this sector. The key to our success: the combination of the latest technologies and modern production processes. The enhanced OptiTrac Global Peak operation control, the asymmetrical multi-string topology Optiflex and the security concept Optiprotect ensure the best possible performance, regardless of the weather.

Flexible plant design

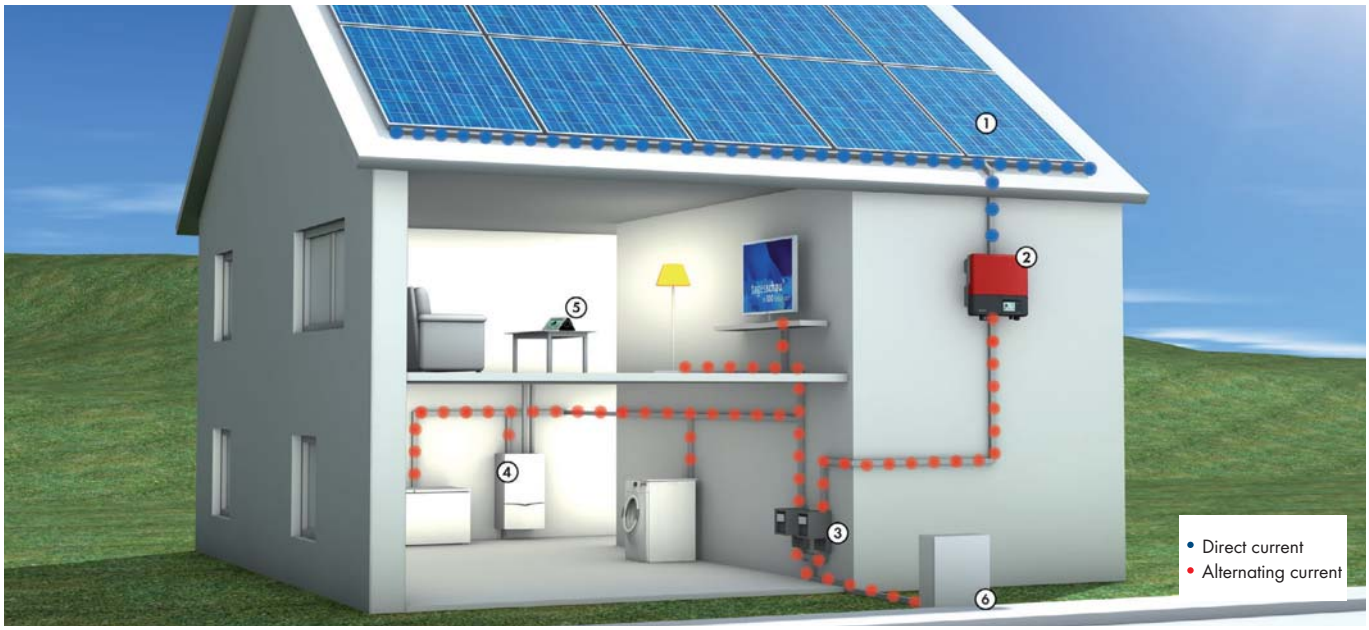
PV plants are just as individual as the buildings and surfaces on which they are installed. Solar power professionals therefore need to be able to choose from a broad selection of products. SMA offers the right inverter for all requirements thus making the perfect plant design possible. Our inverters can be installed indoors as well as outdoors.

Safe installation

With the SMA Grid Guard and Electronic Solar Switch (ESS), SMA provides the most reliable safety systems on the market. For countries that require UL certification, the design of these safety technologies differs slightly. The standardized SUNCLIX DC connection system, the Quick Module communication unit or the SMA Plug-in Grounding kit make the installation even easier.

Simple control

All SMA inverters can be combined with a wide range of monitoring components for PV plants such as the Sunny Beam with *Bluetooth,* the Sunny WebBox for online diagnosis and maintenance, and the Sunny Portal – the world's largest online portal for PV plant monitoring and management.



Components: *1. PV module, 2. Sunny Boy PV inverter, 3. Feed-in meter, 4. Loads, 5. Sunny Beam, 6. Grid connection*

Plant Design

Diligence that pays off

Through the skillful selection of suitable components, a PV plant can be optimized for local operating conditions. When designing the plant, the specific traits of the chosen location must be taken into consideration. The design process should therefore be conducted by an experienced specialist. The broad SMA product range provides a multitude of attractive solutions, beginning with this first important step.

Multi-string inverter

Whenever a PV array is exposed to differing irradiation conditions e.g. in case of varying roof pitches or module shading, the panels should be divided into separate strings. Dividing up the array in this way avoids large yield losses because the individual sub-arrays will have different MPPs. A multi-string inverter from SMA can operate strings from PV modules with the same level of irradiation separately and with its own MPP tracker, thus ensuring maximum energy output.

Grounding the PV array

Some module types require a connection to ground. In these cases, choosing an inverter with galvanic isolation (with transformer) offers maximum flexibility. With the appropriate grounding kit, the inverter can be customized to meet all of the module manufacturer's recommendations.

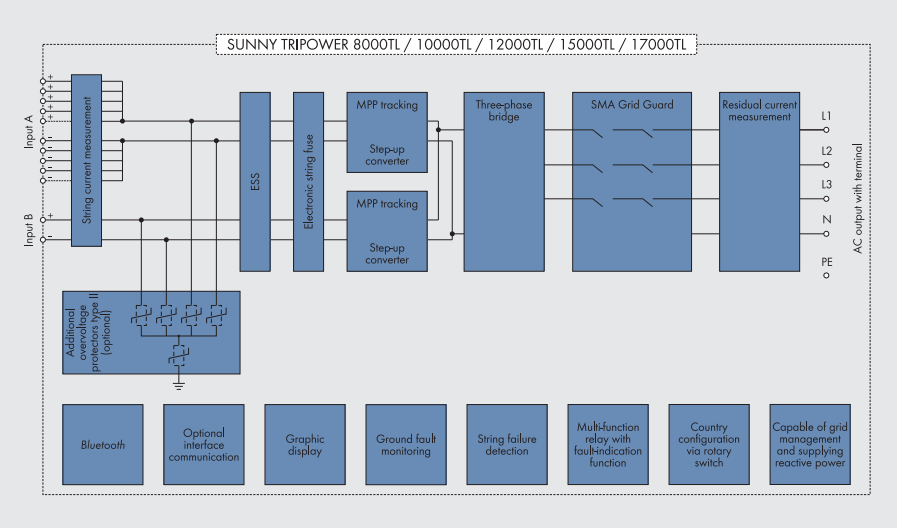
Maximum energy output

If maximizing the energy output is the primary objective, an inverter without transformer is the best solution. In comparison to devices with galvanic isolation, SMA inverters with patented H5 topology provide approximately two percent greater energy outputs.

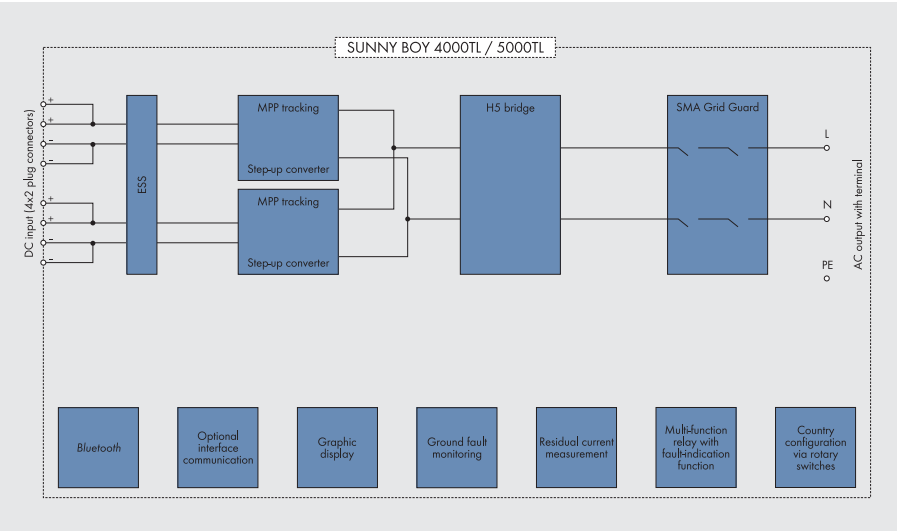
Grid feed-in

Good grid compatibility means more than just producing grid-compliant energy. For smaller PV plants, the symmetrical distribution of the feed-in power across the three phases is adequate and the responsibility of the planner. However, for larger PV plants in the upper power ranges, SMA inverters support electric power companies with grid management tools, including three-phase feed-in, reactive power control and other technologies.

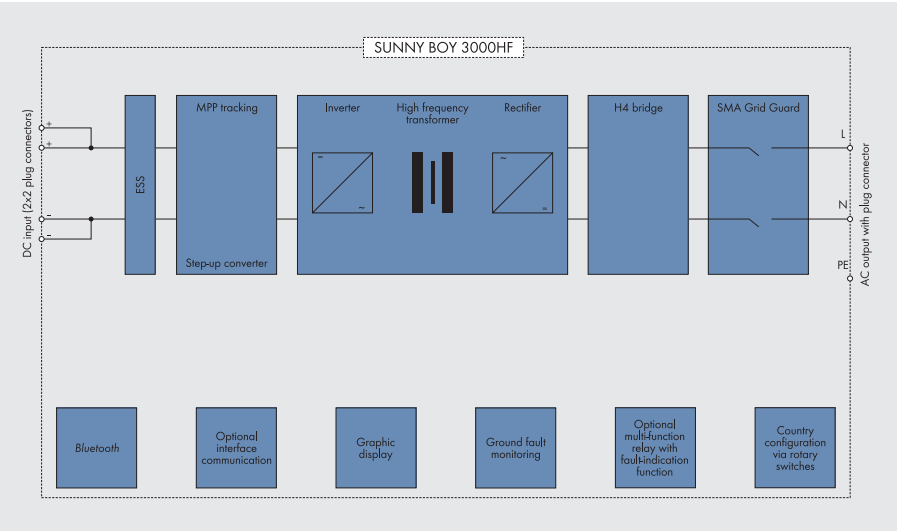
Due to the diverse factors that have to be considered when designing a PV plant, we recommend using the free Sunny Design plant design software.



Block circuit diagram of a three-phase inverter of the Sunny Tripower type



Block circuit diagram of a multi-string inverter without a transformer



Block diagram of a Sunny Boy HF series inverter with galvanic isolation

Easy to Use

- Optimum design for grid-tie PV plants
- Provides information aimed at plant optimization
- Free download

Comprehensive

- Includes comprehensive database of all available PV modules
- Use of high-resolution meteorological data
- Supports locations worldwide
- Automatic online updates
- Generation of design proposals
- Energy analysis for an operation period of one year

SUNNY DESIGN

Plant design made easy

With Sunny Design, designing PV plants is easier than ever. Simply enter all required information and within a few minutes you will receive the optimum configuration. The free software provides solar power professionals and plant designers with a user-friendly interface. The software provides data for an economic evaluation of the plant along with technical checking of the various components. The end customer gains a customized PV plant and the solar power professional saves valuable time.

Sunny Design contains important SMA inverter data as well as specifications on all available PV modules. It is easy to use and guides the planner through the entire design process. This saves time and allows different configuration options to be simulated without the need for complicated calculations.

First, critical operating states are detected and identified. This ensures that the planner is notified of any deviations from the standard design. Although this notification does not necessarily mean that the design is not permissible, it serves to indicate that a thorough check is required.

The software also helps to estimate the yield and investment costs of the most important performance parameters, thus offering a customized plant.

Additionally, realistic operation is evaluated over a calendar year on the basis of the integrated meteorological database. Although a precise yield forecast cannot be expected from Sunny Design (further simulation programs are necessary for this), it can determine the yield differences between various designs, including a technical performance verification.

Finally, a technical assessment of the plant design is clearly illustrated in an individually customized results report. As a printed document or an electronic PDF file, this summary is the ideal supplement to any offer.

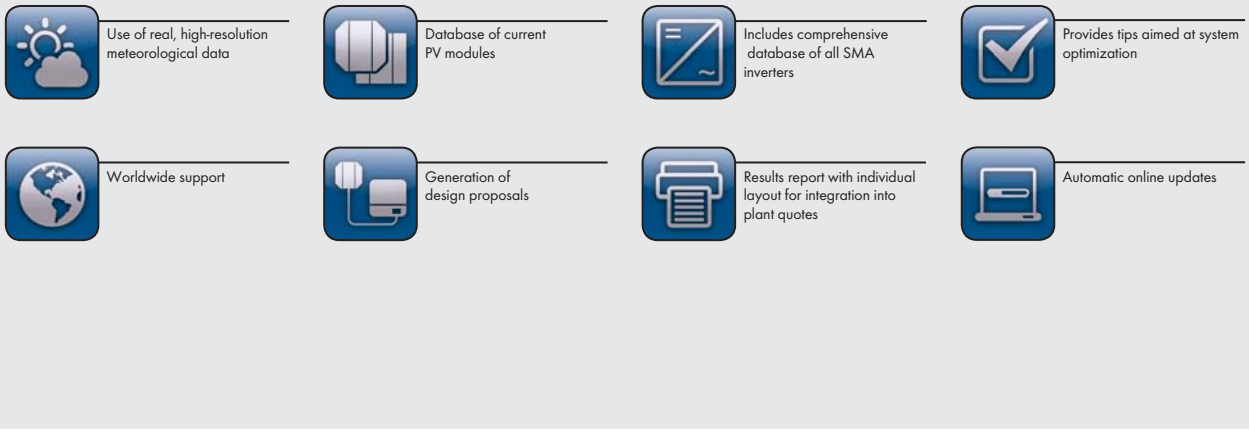
In addition to a redesigned user interface, the new Sunny Design version also offers new enhanced options. For example, you can see design proposals that help you to quickly and easily select an optimum configuration. Even complex PV plants with several different sub-arrays and inverter types can now be combined in a single project. Besides, you can get current online updates for Sunny Design.

Free download at
www.SMA.de/SunnyDesign

System requirements

Supported operating systems
Windows XP SP3*
Windows Vista SP2*
Windows 7*
*with .NET Framework 4.0

Hardware (minimum requirements)
Intel Pentium 1 GHz
1 GB RAM
100 MB (free hard drive space)
1024 x 768 pixels / 256 colors



Easy to Use

- GPS-based locator
- Determines roof tilt and orientation
- Irradiation values provided by online meteorological database

Fast

- Online feed-in tariffs and average plant costs
- Determination of yield and expected profits
- Integrated financing calculator

User-friendly

- Local solar power professional search*
- Telephone or e-mail enquires provided at the press of a button
- Free download in Apple App Store

SMA SOLARCHECKER

iPhone app for estimating PV plant yield

"Is it worth having a PV plant on my roof?" This is a question many homeowners are asking themselves. Solar power professionals with an iPhone (3 GS or newer) can answer this question in just a few seconds – thanks to the SMA Solarchecker. This iPhone application quickly and conveniently estimates the yield of a PV plant, simplifying on-site estimates.

Traditionally, solar power professionals needed a long time before they could provide potential customers with an initial yield estimate. Now, solar power professionals can instantly calculate this estimate using an iPhone and the SMA Solarchecker. This mobile device features integrated sensors that allow it to automatically determine the location, orientation and tilt of a roof. The SMA Solarchecker application uses this data, along with custom information such as plant size and financing costs, to estimate the power output and profits. Although the estimate does not replace the final, detailed design of the plant, it saves valuable time and quickly convinces customers of the benefits of these cost-effective and environmentally friendly plants.

The iPhone as a solar power planner

The SMA Solarchecker finds the operator's current location using the iPhone's GPS tracker. Using these values, the application determines the site's potential solar irradiation, which is derived from a GPS-based weather database. Using the phone's magnetic compass, the application then measures to what degree the roof deviates from the ideal south-facing orientation. The device also determines the possible angle of the PV array using the tilt sensor. The SMA Solarchecker then uses these values to determine the specific yield of a PV plant, i.e. the number of kilowatt hours produced per kW of power.

Calculating the energy output with the Solarchecker

To determine the energy output, the planned power of the PV array must be calculated first. The SMA Solarchecker offers two ways to complete this step. The user can enter power directly in kWp or input the number of square meters of the designed PV plant. In the latter case, the application automatically converts the roof area into power. Of course, the application takes into account the previously specified PV module type.

The SMA Solarchecker calculates the annual energy output of the PV plant by multiplying the specific yield of the roof area with the planned peak power. Long-term estimates, e.g. over 20 years, are also possible.

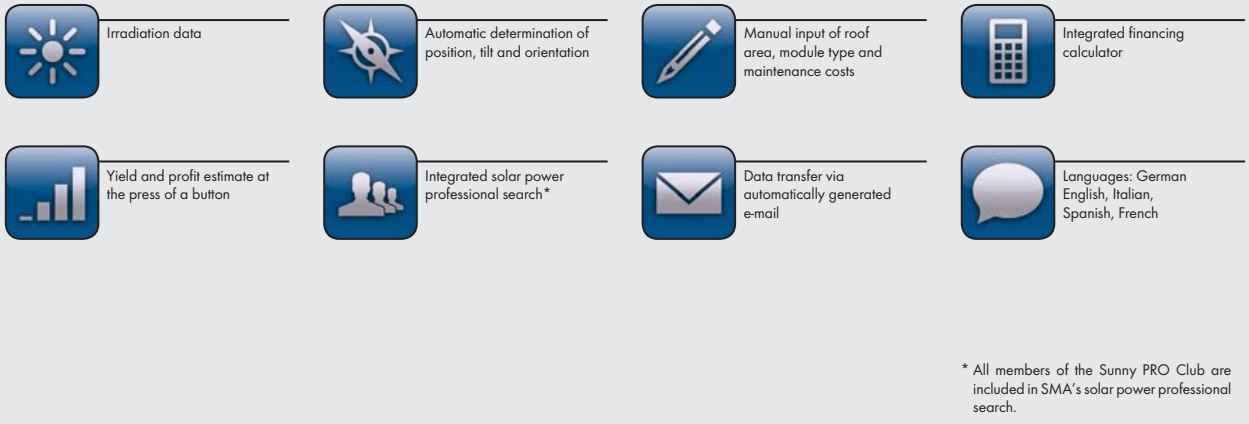
Profit estimate at the press of a button

For locations with a feed-in tariff, simply type in the current feed-in tariff per kilowatt hour and the expected financing costs and the application will estimate the possible profits that can be generated by the designed PV plant.

Free download at
www.apple.com/itunes

Important information:

Since the returns and profits are dependent on the estimate of the specific yearly yield, they both carry a certain degree of uncertainty. SMA is not liable for lower actual yields, which can be caused by other factors such as shading, dirt or otherwise compromised modules. For more precise yield calculations, SMA recommends consulting a qualified solar power professional or plant designer.



* All members of the Sunny PRO Club are included in SMA's solar power professional search.

INVERTERS WITHOUT TRANSFORMERS

Efficient

- Maximum efficiency of 98.2 %
- The best tracking efficiency with OptiTrac MPP tracking by SMA
- *Bluetooth* communication

Safe

- Triple protection with Optiprotect:
- Electronic string fuse
- Self-learning string failure detection
- DC surge arrester (Type II) can be integrated

Flexible

- DC input voltage up to 1,000 V
- Integrated grid management functions
- Custom plant design with Optiflex

Simple

- Three-phase feed-in
- Cable connection without tools
- SUNCLIX DC plug-in system
- Easily accessible connection area

SUNNY TRIPOWER 8000TL / 10000TL / 12000TL / 15000TL / 17000TL

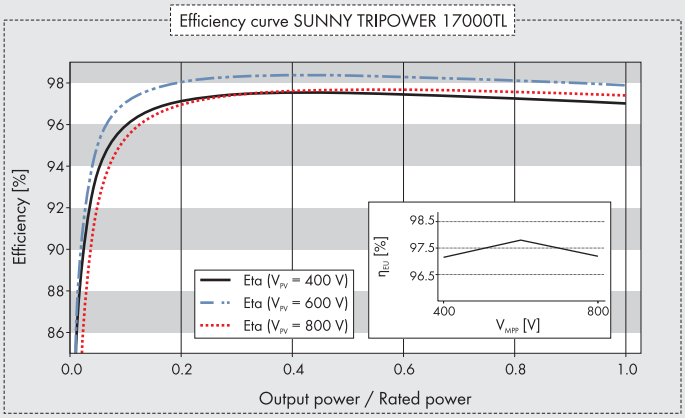
The three-phase inverter for easy plant design

Full of pioneering technology: highly flexible plant design with the three-phase Sunny Tripower inverter. Thanks to OptiFlex technology, two MPP inputs and a broad input voltage range, it is suited to almost any module configuration. It meets all the requirements for reactive power supply and grid support, thus making a reliable contribution to grid management. The Optiprotect safety concept, with its self-learning string failure detection, electronic string fuse and available DC surge arrester (Type II), ensures maximum uptime.

Bad Hersfeld, Germany

SUNNY TRIPOWER
8000TL / 10000TL / 12000TL / 15000TL / 17000TL

Technical Data	Sunny Tripower 8000TL	Sunny Tripower 10000TL
Input (DC)		
Max. DC power (@ cos φ=1)	8200 W	10200 W
Max. input voltage	1000 V	1000 V
MPP voltage range / rated input voltage	320 V – 800 V / 600 V	320 V – 800 V / 600 V
Min. input voltage / initial input voltage	150 V / 188 V	150 V / 188 V
Max. input current input A / input B	22 A / 11 A	22 A / 11 A
Max. input current per string input A** / input B**	33 A / 12.5 A	33 A / 12.5 A
Number of independent MPP inputs / strings per MPP input	2 / A:4; B:1	2 / A:4; B:1
Output (AC)		
Rated power (@ 230 V, 50 Hz)	8000 W	10000 W
Max. apparent AC power	8000 VA	10000 VA
Nominal AC voltage	3 / N / PE; 220 / 380 V 3 / N / PE; 230 / 400 V 3 / N / PE; 240 / 415 V	3 / N / PE; 220 / 380 V 3 / N / PE; 230 / 400 V 3 / N / PE; 240 / 415 V
Nominal AC voltage range	160 V – 280 V	160 V – 280 V
AC power frequency / range	-6 Hz ... +5 Hz	-6 Hz ... +5 Hz
Rated grid frequency / rated grid voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	16 A	16 A
Power factor at rated power	1	1
Adjustable displacement factor	0.8 overexited ... 0.8 underexited	0.8 overexited ... 0.8 underexited
Phase conductors / connection phases	3 / 3	3 / 3
Efficiency		
Max. efficiency / European efficiency	98.1 % / 97.5 %	98.1 % / 97.7 %
Protection		
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
General Data		
Dimensions (W / H / D)	665 / 690 / 265 mm (26.2 / 27.2 / 10.4 in)	665 / 690 / 265 mm (26.2 / 27.2 / 10.4 in)
Weight	64 kg / 141.1 lb	64 kg / 141.1 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	51 dB(A)	51 dB(A)
Self-consumption at night	1 W	1 W
Topology / cooling concept	Transformerless / OptiCool	Transformerless / OptiCool
Degree of protection / degree of protection of connection area (according to IEC 60529)	IP65 / IP54	IP65 / IP54
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Spring-type terminal	Spring-type terminal
Display	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, G83/1-1, RD 1663/2000, PPC, AS4777, EN 50438*, C10/11, PPDS, IEC-utility Meeting 216, IEC 61727, ENEL-Guida, UTE C15712-1	
Type designation	STP 8000TL-10	STP 10000TL-10



Accessories

RS485 interface
DM-485CB-10

DC surge arrester
(Type II), input A
DCSPD KIT1-10

DC surge arrester
(Type II), inputs A and B
DCSPD KIT2-10

* Does not apply to all national deviations of EN 50438
** To be observed in case of a short circuit in the electronic string fuse
● Standard features ○ Optional features – Not available
Data at nominal conditions

Sunny Tripower 12000TL	Sunny Tripower 15000TL	Sunny Tripower 17000TL	
12250 W	15340 W	17410 W	
1000 V	1000 V	1000 V	
380 V – 800 V / 600 V	360 V – 800 V / 600 V	400 V – 800 V / 600 V	
150 V / 188 V	150 V / 188 V	150 V / 188 V	
22 A / 11 A	33 A / 11 A	33 A / 11 A	
33 A / 12.5 A	33 A / 12.5 A	33 A / 12.5 A	
2 / A:4; B:1	2 / A:5; B:1	2 / A:5; B:1	
12000 W	15000 W	17000 W	
12000 VA	15000 VA	17000 VA	
3 / N / PE; 220 / 380 V	3 / N / PE; 220 / 380 V	3 / N / PE; 220 / 380 V	
3 / N / PE; 230 / 400 V	3 / N / PE; 230 / 400 V	3 / N / PE; 230 / 400 V	
3 / N / PE; 240 / 415 V	3 / N / PE; 240 / 415 V	3 / N / PE; 240 / 415 V	
160 V – 280 V	160 V – 280 V	160 V – 280 V	
-6 Hz ... +5 Hz	-6 Hz ... +5 Hz	-6 Hz ... +5 Hz	
50 Hz / 230 V	50 Hz / 230 V	50 Hz / 230 V	
19.2 A	24 A	24.6 A	
1	1	1	
0.8 overexited ... 0.8 underexited	0.8 overexited ... 0.8 underexited	0.8 overexited ... 0.8 underexited	
3 / 3	3 / 3	3 / 3	
98.1 % / 97.7 %	98.2 % / 97.8 %	98.2 % / 97.8 %	
●	●	●	
● / ●	● / ●	● / ●	
○	○	○	
● / ● / –	● / ● / –	● / ● / –	
●	●	●	
I / III	I / III	I / III	
665 / 690 / 265 mm (26.2 / 27.2 / 10.4 in)	665 / 690 / 265 mm (26.2 / 27.2 / 10.4 in)	665 / 690 / 265 mm (26.2 / 27.2 / 10.4 in)	
64 kg / 141.1 lb	64 kg / 141.1 lb	64 kg / 141.1 lb	
-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F	
51 dB(A)	51 dB(A)	51 dB(A)	
1 W	1 W	1 W	
Transformerless / OptiCool	Transformerless / OptiCool	Transformerless / OptiCool	
IP65 / IP54	IP65 / IP54	IP65 / IP54	
4K4H	4K4H	4K4H	
100 %	100 %	100 %	
SUNCLIX	SUNCLIX	SUNCLIX	
Spring-type terminal	Spring-type terminal	Spring-type terminal	
Graphic	Graphic	Graphic	
○ / ●	○ / ●	○ / ●	
● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○	
●	●	●	
CE, VDE0126-1-1, G83/1-1, RD 1663/2000, PPC, AS4777, EN 50438*, C10/11, PPDS, IEC-utility Meeting 216, IEC 61727, ENEL-Guida, UTE C15712-1			
STP 12000TL-10	STP 15000TL-10	STP 17000TL-10	

Flexible

- Reactive power supply

High Yields

- Maximum efficiency of 97.7 %
- Transformerless, with H5 topology
- OptiCool active temperature management

Reliable

- Pluggable SMA Power Balancer for three-phase power supply line
- Integrated ESS DC switch-disconnector
- Monitored string fuses

Simple

- SUNCLIX DC plug-in system

SUNNY MINI CENTRAL 9000TL / 10000TL / 11000TL with Reactive Power Control

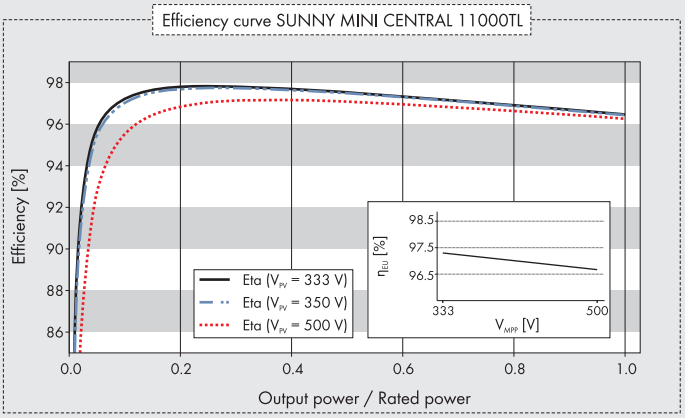
Optimum grid integration with reactive power supply

Sunny Mini Central inverters with Reactive Power Control are the ideal solution when utility companies demand reactive power supply. They can be used to realize plant designs which specify for the displacement factor cos φ and the corresponding percentage of reactive power. This way, large PV power stations can now make optimum use of grid distribution capacities, which significantly contributes to the success of renewable energy.

Thiva, Greece

SUNNY MINI CENTRAL 9000TL / 10000TL / 11000TL with Reactive Power Control

Technical Data	Sunny Mini Central 9000TL	Sunny Mini Central 10000TL
Input (DC)		
Max. DC power (@ cos φ=1)	9300 W	10350 W
Max. input voltage	700 V	700 V
MPP voltage range / rated input voltage	333 V – 500 V / 350 V	333 V – 500 V / 350 V
Min. input voltage / initial input voltage	333 V / 400 V	333 V / 400 V
Max. input current	28 A	31 A
Max. input current per string	28 A	31 A
Number of independent MPP inputs / strings per MPP input	1 / 5	1 / 5
Output (AC)		
Rated power (@230 V, 50 Hz)	9000 W	10000 W
Max. apparent AC power	9000 VA	10000 VA
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 265 V	220 V, 230 V, 240 V / 180 V – 265 V
AC power frequency / range	50 Hz, 60 Hz / -6 Hz ... +5 Hz	50 Hz, 60 Hz / -6 Hz ... +5 Hz
Rated grid frequency / rated grid voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	40 A	44 A
Power factor at rated power	1	1
Adjustable displacement factor	0.8 overexcited ... 0.8 underexited	0.8 overexited ... 0.8 underexited
Phase conductors / connection phases	1 / 1	1 / 1
Power balancing	●	●
Efficiency		
Max. efficiency / European efficiency	97.7 % / 97.3 %	97.7 % / 97.2 %
Protection		
Reverse current protection / input-side disconnection device	Optional (fuses) / ●	Optional (fuses) / ●
Ground fault monitoring / grid monitoring	● / ●	● / ●
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
General Data		
Dimensions (W / H / D)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)
Weight	35 kg / 77.16 lb	35 kg / 77.16 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	42 dB(A)	45 dB(A)
Self-consumption at night	0.25 W	0.25 W
Topology	Transformerless	Transformerless
Cooling concept	OptiCool	OptiCool
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP65	IP65
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Screw terminal	Screw terminal
Display	Text line	Text line
Interface: RS485 / *Bluetooth*	○ / ○	○ / ○
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Certificates and approvals (more available on request)	CE, VDE0126-1-1, RD 1663/2000, EN 50438*, C10/11, PPDS, IEC-utility Meeting 216, IEC 61727, UTE C15712-1	
Type designation	SMC 9000TLRP-10	SMC 10000TLRP-10



Accessories

RS485 interface of type 485PB-SMC-NR

Bluetooth Piggy-Back BTPBINV-NR

SMA Power Balancer Connection cable PBL-YCABLE-10

* Does not apply to all national deviations of EN 50438

● Standard features ○ Optional features – Not available

Data at nominal conditions

Technical Data	Sunny Mini Central 11000TL	
Input (DC)		
Max. DC power (@ cos φ=1)	11400 W	
Max. input voltage	700 V	
MPP voltage range / rated input voltage	333 V – 500 V / 350 V	
Min. input voltage / initial input voltage	333 V / 400 V	
Max. input current	34 A	
Max. input current per string	34 A	
Number of independent MPP inputs / strings per MPP input	1 / 5	
Output (AC)		
Rated power (@230 V, 50 Hz)	11000 W	
Max. apparent AC power	11000 VA	
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 265 V	
AC power frequency / range	50 Hz, 60 Hz / -6 Hz ... +5 Hz	
Rated grid frequency / rated grid voltage	50 Hz / 230 V	
Max. output current	48 A	
Power factor at rated power	1	
Adjustable displacement factor	0.8 overexited ... 0.8 underexited	
Phase conductors / connection phases	1 / 1	
Power balancing	●	
Efficiency		
Max. efficiency / European efficiency	97.7 % / 97.2 %	
Protection		
Reverse current protection / input-side disconnection device	Optional (fuses) / ●	
Ground fault monitoring / grid monitoring	● / ●	
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	
General Data		
Dimensions (W / H / D)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)	
Weight	35 kg / 77.16 lb	
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	
Noise emission (typical)	46 dB(A)	
Self-consumption at night	0.25 W	
Topology	Transformerless	
Cooling concept	OptiCool	
Degree of protection (according to IEC 60529)	IP65	
Degree of protection of connection area (according to IEC 60529)	IP65	
Climatic category (according to IEC 60721-3-4)	4K4H	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	SUNCLIX	
AC terminal	Screw terminal	
Display	Text line	
Interface: RS485 / *Bluetooth*	○ / ○	
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	
Certificates and approvals (more available on request)	CE, VDE0126-1-1, RD 1663/2000, EN 50438*, C10/11, PPDS, IEC-utility Meeting 216, IEC 61727, UTE C15712-1	
Type designation	SMC 11000TLRP-10	

Efficient

- Maximum efficiency of 98 %
- The best tracking efficiency with OptiTrac MPP tracking
- Transformerless, with H5 topology
- OptiCool active temperature management

Safe

- Pluggable SMA Power Balancer for three-phase power supply line
- Integrated ESS DC switch-disconnector
- Monitored string fuses

Simple

- SUNCLIX DC plug-in system

SUNNY MINI CENTRAL 9000TL / 10000TL / 11000TL

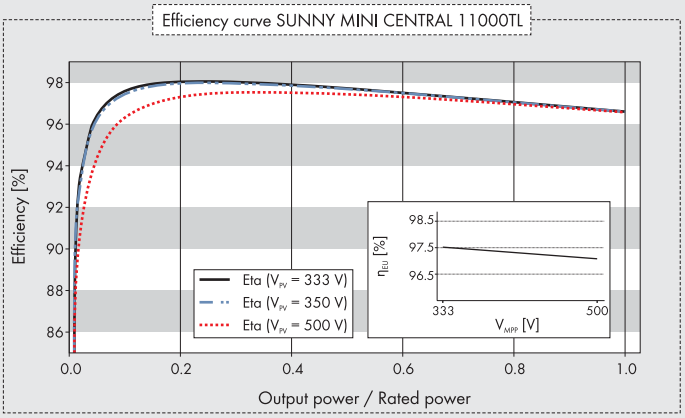
Precise plant design for maximum yields

The Sunny Mini Central simplifies the process of planning medium and large PV plants from 27 kWp up to the megawatt range. The performance classes of 9, 10 and 11 kW as well as the combination of high efficiency and low specific price ensure high performance and short amortization. The decentralized plant design also helps keep maintenance costs low.

Bolzano, Italy

SUNNY MINI CENTRAL 9000TL / 10000TL / 11000TL

Technical Data	Sunny Mini Central 9000TL	Sunny Mini Central 10000TL
Input (DC)		
Max. DC power (@ cos φ=1)	9300 W	10350 W
Max. input voltage	700 V	700 V
MPP voltage range / rated input voltage	333 V – 500 V / 350 V	333 V – 500 V / 350 V
Min. input voltage / initial input voltage	333 V / 400 V	333 V / 400 V
Max. input current	28 A	31 A
Max. input current per string	28 A	31 A
Number of independent MPP inputs / strings per MPP input	1 / 5	1 / 5
Output (AC)		
Rated power (@230 V, 50 Hz)	9000 W	10000 W
Max. apparent AC power	9000 VA	10000 VA
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 265 V	220 V, 230 V, 240 V / 180 V – 265 V
AC power frequency / range	50 Hz, 60 Hz / -6 Hz ... +5 Hz	50 Hz, 60 Hz / -6 Hz ... +5 Hz
Rated grid frequency / rated grid voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	40 A	44 A
Power factor at rated power	1	1
Adjustable displacement factor	–	–
Phase conductors / connection phases	1 / 1	1 / 1
Power balancing	●	●
Efficiency		
Max. efficiency / European efficiency	98 % / 97.6 %	98 % / 97.5 %
Protection		
Reverse current protection / input-side disconnection device	Optional (fuses) / ●	Optional (fuses) / ●
Ground fault monitoring / grid monitoring	● / ●	● / ●
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
General Data		
Dimensions (W / H / D)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)
Weight	35 kg / 77.16 lb	35 kg / 77.16 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	42 dB(A)	45 dB(A)
Self-consumption at night	0.25 W	0.25 W
Topology	Transformerless	Transformerless
Cooling concept	OptiCool	OptiCool
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP65	IP65
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Screw terminal	Screw terminal
Display	Text line	Text line
Interface: RS485 / *Bluetooth*	○ / ○	○ / ○
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Certificates and approvals (more available on request)	CE, VDE0126-1-1, DK 5940 ED2.2**, RD 1663/2000, PPC, AS4777, EN 50438*, C10/11, PPDS, IEC-utility Meeting 216, IEC 61727, UTE C15712-1	
Type designation	SMC 9000TL-10	SMC 10000TL-10



Accessories

RS485 interface of type 485PB-SMC-NR

Bluetooth Piggy-Back BTPBINV-NR

SMA Power Balancer Connection cable PBL-YCABLE-10

* Does not apply to all national deviations of EN 50438
** Only applies to IT option
● Standard features ○ Optional features – Not available
Data at nominal conditions

Technical Data	Sunny Mini Central 11000TL	
Input (DC)		
Max. DC power (@ cos φ=1)	11400 W	
Max. input voltage	700 V	
MPP voltage range / rated input voltage	333 V – 500 V / 350 V	
Min. input voltage / initial input voltage	333 V / 400 V	
Max. input current	34 A	
Max. input current per string	34 A	
Number of independent MPP inputs / strings per MPP input	1 / 5	
Output (AC)		
Rated power (@230 V, 50 Hz)	11000 W	
Max. apparent AC power	11000 VA	
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 265 V	
AC power frequency / range	50 Hz, 60 Hz / -6 Hz ... +5 Hz	
Rated grid frequency / rated grid voltage	50 Hz / 230 V	
Max. output current	48 A	
Power factor at rated power	1	
Adjustable displacement factor	–	
Phase conductors / connection phases	1 / 1	
Power balancing	●	
Efficiency		
Max. efficiency / European efficiency	98 % / 97.5 %	
Protection		
Reverse current protection / input-side disconnection device	Optional (fuses) / ●	
Ground fault monitoring / grid monitoring	● / ●	
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	
General Data		
Dimensions (W / H / D)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)	
Weight	35 kg / 77.16 lb	
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	
Noise emission (typical)	46 dB(A)	
Self-consumption at night	0.25 W	
Topology	Transformerless	
Cooling concept	OptiCool	
Degree of protection (according to IEC 60529)	IP65	
Degree of protection of connection area (according to IEC 60529)	IP65	
Climatic category (according to IEC 60721-3-4)	4K4H	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	SUNCLIX	
AC terminal	Screw terminal	
Display	○	
Interface: RS485 / *Bluetooth*	○ / ○	
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	
Certificates and approvals (more available on request)	CE, VDE0126-1-1, DK 5940 ED2.2**, RD 1663/2000, PPC, AS4777, EN 50438*, C10/11, PPDS, IEC-utility Meeting 216, IEC 61727, UTE C15712-1	
Type designation	SMC 11000TL-10	

High Yields

- Maximum efficiency of 98 %
- The best tracking efficiency with OptiTrac MPP tracking
- Transformerless, with H5 topology
- OptiCool active temperature management

Safe

- SMA Power Balancer for three-phase power supply line
- Integrated ESS DC switch-disconnector

Simple

- SUNCLIX DC plug-in system

SUNNY MINI CENTRAL 6000TL / 7000TL / 8000TL

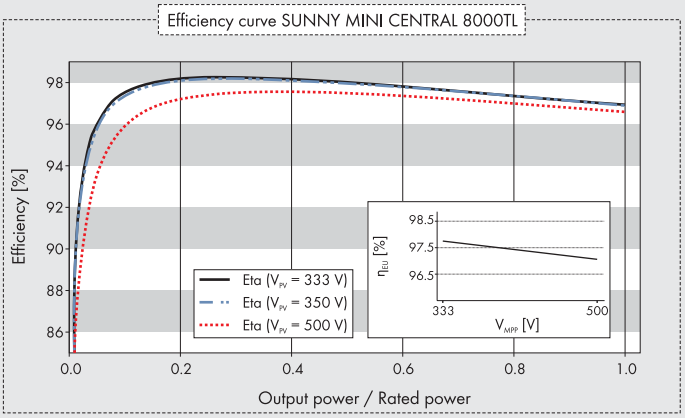
High yield performance for a variety of combinations

The transformerless SMA Sunny Mini Central 6000TL, 7000TL and 8000TL PV inverters provide their owners with high yields. With the Sunny Mini Central family of transformerless inverters, it will be even easier to realize PV plants from 18 kWp to the megawatt range. The finely-graduated performance classes are ideal for precise PV plant configuration. The flexibility it provides during design and a favorable price-performance ratio make the Sunny Mini Central the ideal inverter for mid-sized to large PV plants.

Tiber Targhe, Città di Castello, Italy

SUNNY MINI CENTRAL 6000TL / 7000TL / 8000TL

Technical Data	Sunny Mini Central 6000TL	Sunny Mini Central 7000TL
Input (DC)		
Max. DC power (@ cos φ=1)	6200 W	7200 W
Max. input voltage	700 V	700 V
MPP voltage range / rated input voltage	333 V – 500 V / 350 V	333 V – 500 V / 350 V
Min. input voltage / initial input voltage	330 V / 400 V	330 V / 400 V
Max. input current	19 A	22 A
Max. input current per string	19 A	22 A
Number of independent MPP inputs / strings per MPP input	1 / 4	1 / 4
Output (AC)		
Rated power (@230 V, 50 Hz)	6000 W	7000 W
Max. apparent AC power	6000 VA	7000 VA
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 265 V	220 V, 230 V, 240 V / 180 V – 265 V
AC power frequency / range	50 Hz, 60 Hz / -6 Hz ... +5 Hz	50 Hz, 60 Hz / -6 Hz ... +5 Hz
Rated grid frequency / rated grid voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	27 A	31 A
Power factor at rated power	1	1
Adjustable displacement factor	–	–
Phase conductors / connection phases	1 / 1	1 / 1
Power balancing	●	●
Efficiency		
Max. efficiency / European efficiency	98 % / 97.7 %	98 % / 97.7 %
Protection		
Reverse current protection / input-side disconnection device	– / ●	– / ●
Ground fault monitoring / grid monitoring	● / ●	● / ●
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
General Data		
Dimensions (W / H / D)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)
Weight	31 kg / 68.34 lb	32 kg / 70.55 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	31 dB(A)	33 dB(A)
Self-consumption at night	0.25 W	0.25 W
Topology	Transformerless	Transformerless
Cooling concept	OptiCool	OptiCool
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP65	IP65
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Screw terminal	Screw terminal
Display	Text line	Text line
Interface: RS485 / *Bluetooth*	○ / ○	○ / ○
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Certificates and approvals (more available on request)	CE, VDE0126-1-1, DK 5940 ED2.2**, RD 1663/2000, PPC, AS4777, EN 50438*, C10/11, PPDS, IEC-utility Meeting 216, IEC 61727, UTE C15712-1	
Type designation	SMC 6000TL	SMC 7000TL



Accessories

RS485 interface of type 485PB-SMC-NR

Bluetooth Piggy-Back BTPBINV-NR

SMA Power Balancer plug-in system PBL-SBUS-10-NR

* Does not apply to all national deviations of EN 50438
** Only applies to IT option
● Standard features ○ Optional features – Not available
Data at nominal conditions

Technical Data	Sunny Mini Central 8000TL	
Input (DC)		
Max. DC power (@ cos φ=1)	8250 W	
Max. input voltage	700 V	
MPP voltage range / rated input voltage	333 V – 500 V / 350 V	
Min. input voltage / initial input voltage	330 V / 400 V	
Max. input current	25 A	
Max. input current per string	25 A	
Number of independent MPP inputs / strings per MPP input	1 / 4	
Output (AC)		
Rated power (@230 V, 50 Hz)	8000 W	
Max. apparent AC power	8000 VA	
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 265 V	
AC power frequency / range	50 Hz, 60 Hz / -6 Hz ... +5 Hz	
Rated grid frequency / rated grid voltage	50 Hz / 230 V	
Max. output current	35 A	
Power factor at rated power	1	
Adjustable displacement factor	–	
Phase conductors / connection phases	1 / 1	
Power balancing	●	
Efficiency		
Max. efficiency / European efficiency	98 % / 97.7 %	
Protection		
Reverse current protection / input-side disconnection device	– / ●	
Ground fault monitoring / grid monitoring	● / ●	
DC reverse-polarity protection / AC short-circuit current capability / galvanically isolated	Short-circuit diode / ● / –	
All-pole sensitive residual current monitoring unit	–	
Protection class (according to IEC 62103) / overvoltage category (according to IEC 60664-1)	I / III	
General Data		
Dimensions (W / H / D)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)	
Weight	33 kg / 72.75 lb	
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	
Noise emission (typical)	40 dB(A)	
Self-consumption at night	0.25 W	
Topology	Transformerless	
Cooling concept	OptiCool	
Degree of protection (according to IEC 60529)	IP65	
Degree of protection of connection area (according to IEC 60529)	IP65	
Climatic category (according to IEC 60721-3-4)	4K4H	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	SUNCLIX	
AC terminal	Screw terminal	
Display	Text line	
Interface: RS485 / *Bluetooth*	○ / ○	
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	
Certificates and approvals (more available on request)	CE, VDE0126-1-1, DK 5940 ED2.2**, RD 1663/2000, PPC, AS4777, EN 50438*, C10/11, PPDS, IEC-utility Meeting 216, IEC 61727, UTE C15712-1	
Type designation	SMC 8000TL	

Efficient

- Maximum efficiency of 97 %
- Multi-string technology, also in the 3 kW model
- Cost savings due to fewer parallel strings
- Shade management with OptiTrac Global Peak

Flexible

- Maximum DC input voltage of 750 V
- Integrated grid management functions thanks to reactive power supply

Simple

- Without fan
- Simplified wall mounting
- SUNCLIX DC plug-in system
- Quick connection without tools

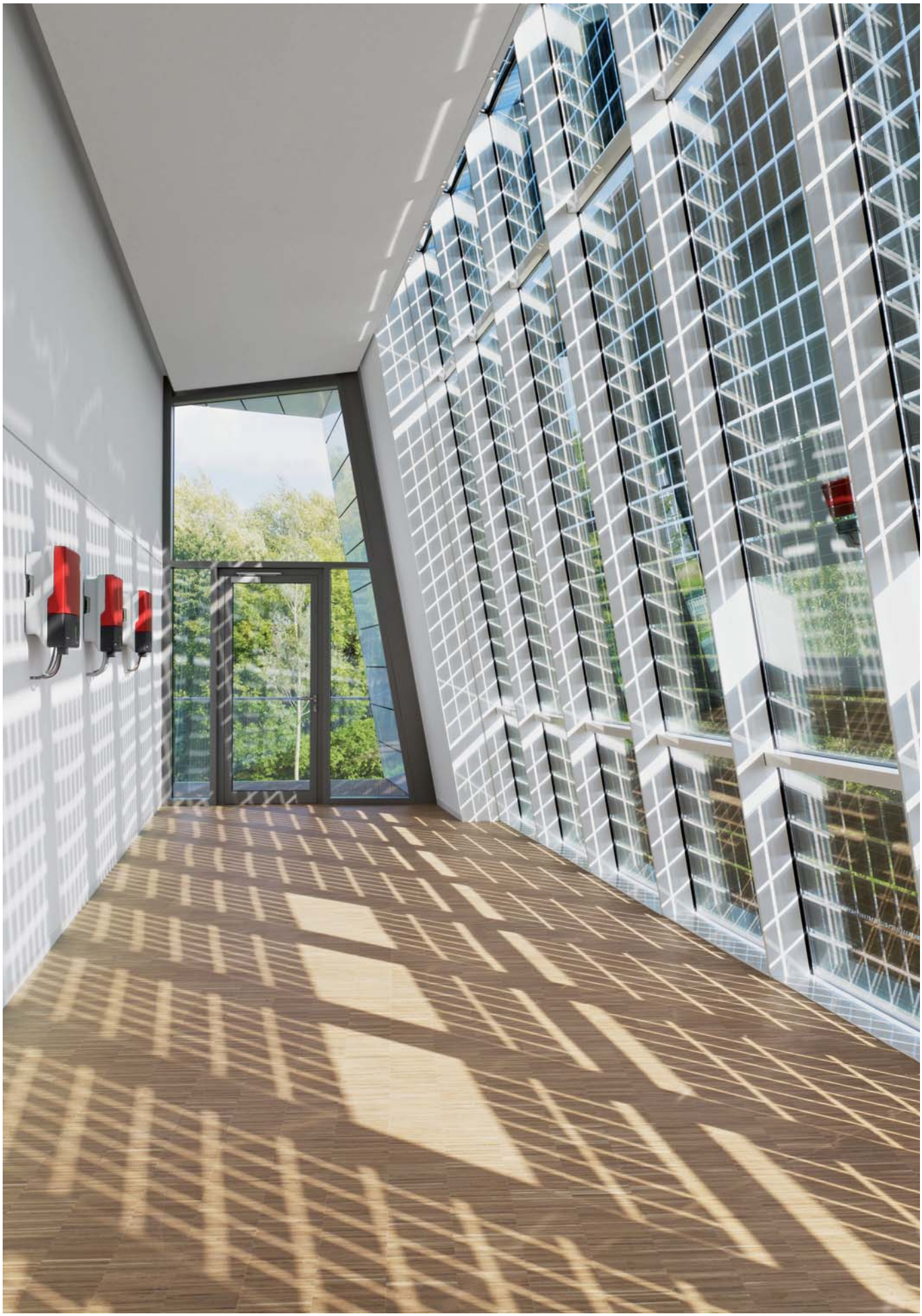
Communicative

- Simple country configuration
- *Bluetooth* technology as standard
- Multi-function relay included

SUNNY BOY 3000TL / 4000TL / 5000TL with Reactive Power Control

Universally applicable thanks to integrated grid management functions

The ideal solution particularly for demanding PV arrays and partially shaded plants: As multi-string devices, the new transformerless Sunny Boy 3000TL, 4000TL and 5000TL models offer maximum planning and realization flexibility. The high DC voltage of 750 V proves to be a cost advantage, since fewer parallel strings are required. In addition, the integrated grid management functions make the devices suitable for universal applications and allow them to actively support the grid. The new wall mounting system further facilitates installation.



Niestetal, Germany

SUNNY BOY 3000TL/4000TL/5000TL
with Reactive Power Control

Technical Data	Sunny Boy 3000TL	Sunny Boy 4000TL
Input (DC)		
Max. DC power (@ cos φ=1)	3200 W	4200 W
Max. input voltage	750 V	750 V
MPP voltage range / rated input voltage	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
Max. input current input A / input B	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
Number of independent MPP inputs / strings per MPP input	2 / A:2; B:2	2 / A:2; B:2
Output (AC)		
Rated power (@ 230 V, 50 Hz)	3000 W	4000 W
Max. apparent AC power	3000 VA	4000 VA
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 280 V	220 V, 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
Rated grid frequency / rated grid voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	16 A	22 A
Power factor at rated output power	1	1
Adjustable displacement factor	0.8 overexited ... 0.8 underexited	0.8 overexited ... 0.8 underexited
Phase conductors / connection phases	1 / 1	1 / 1
Efficiency		
Max. efficiency / European efficiency	97 % / 96.3 %	97 % / 96.4 %
Protection		
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
General Data		
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)
Weight	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
Noise emission (typical)	25 dB(A)	25 dB(A)
Self-consumption at night	1 W	1 W
Topology	Transformerless	Transformerless
Cooling concept	Convection	Convection
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP54	IP54
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Spring-type terminal	Spring-type terminal
Display	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, DK 5940 ED2.2, G83/1-1, RD 1663, PPC, AS4777, EN 50438*, PPDS, KEMCO**, AR4105	
Type designation	SB 3000TL-21	SB 4000TL-21

Accessories

RS485 interface
DM-485CB-10

* Does not apply to all national deviations of EN 50438
** Only SB 3000TL-21
*** 4600 VA with VDE-AR-N-4105
● Standard features ○ Optional features – Not available
Provisional data, as of March 2011
Data at nominal conditions

Technical Data	Sunny Boy 5000TL	
Input (DC)		
Max. DC power (@ cos φ=1)	5300 W	
Max. input voltage	750 V	
MPP voltage range / rated input voltage	175 V – 500 V / 400 V	
Min. input voltage / initial input voltage	125 V / 150 V	
Max. input current input A / input B	15 A / 15 A	
Max. input current per string input A / input B	15 A / 15 A	
Number of independent MPP inputs / strings per MPP input	2 / A:2; B:2	
Output (AC)		
Rated power (@ 230 V, 50 Hz)	4600 W	
Max. apparent AC power	5000 VA***	
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 280 V	
AC power frequency / range	50 Hz, 60 Hz / -5 Hz ... +5 Hz	
Rated grid frequency / rated grid voltage	50 Hz / 230 V	
Max. output current	22 A	
Power factor at rated output power	1	
Adjustable displacement factor	0.8 overexited ... 0.8 underexited	
Phase conductors / connection phases	1 / 1	
Efficiency		
Max. efficiency / European efficiency	97 % / 96.5 %	
Protection		
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	
General Data		
Dimensions (W / H / D)	490 / 519 / 185 mm (19.3 / 20.5 / 7.3 in)	
Weight	26 kg / 57.3 lb	
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	
Noise emission (typical)	25 dB(A)	
Self-consumption at night	1 W	
Topology	Transformerless	
Cooling concept	Convection	
Degree of protection (according to IEC 60529)	IP65	
Degree of protection of connection area (according to IEC 60529)	IP54	
Climatic category (according to IEC 60721-3-4)	4K4H	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	SUNCLIX	
AC terminal	Spring-type terminal	
Display	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, DK 5940 ED2.2, G83/1-1, RD 1663, PPC, AS4777, EN 50438*, PPDS	
Type designation	SB 5000TL-21	

High Yields

- Maximum efficiency of 97 %
- Multi-string technology*
- Transformerless, with H5 topology
- Shade management with OptiTrac Global Peak

Safe

- Integrated ESS DC switch-disconnector

Simple

- Easily accessible connection area
- Cable connection without tools
- SUNCLIX DC plug-in system

Communicative

- Simple country configuration
- *Bluetooth* technology as standard
- Graphic display
- Multi-function relay included

SUNNY BOY 3000TL / 4000TL / 5000TL

Unmatched performance. Simple. The transformerless Sunny Boy generation

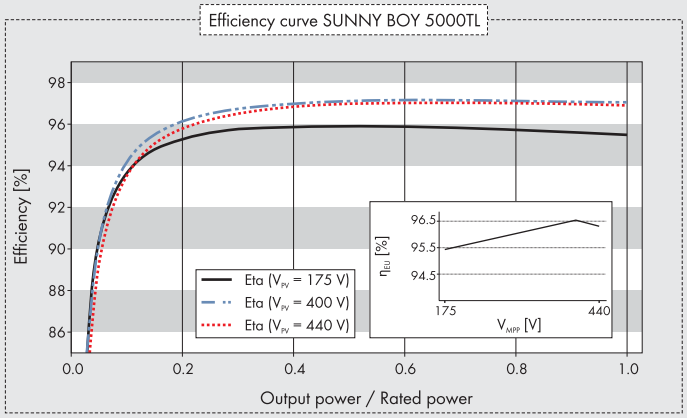
Communicative, user-friendly and efficient – this Sunny Boy sets standards in its class. A modern graphic display, simplified installation, delivery of daily yield values even after sunset and wireless communication via *Bluetooth* leave hardly anything to be desired. With new OptiTrac Global Peak shade management and an optimum efficiency of 97 %, the inverters ensure optimum solar yields. As a transformerless, multi-string device, the Sunny Boy provides maximum flexibility, making it the first choice for demanding projects.

* except for Sunny Boy 3000TL

Eschborn, Germany

SUNNY BOY 3000TL / 4000TL / 5000TL

Technical Data	Sunny Boy 3000TL	Sunny Boy 4000TL
Input (DC)		
Max. DC power (@ cos φ=1)	3200 W	4200 W
Max. input voltage	550 V	550 V
MPP voltage range / rated input voltage	188 V – 440 V / 400 V	175 V – 440 V / 400 V
Min. input voltage / initial input voltage	125 V / 150 V	125 V / 150 V
Max. input current input A / input B	17 A / –	15 A / 15 A
Max. input current per string input A / input B	17 A / –	15 A / 15 A
Number of independent MPP inputs / strings per MPP input	1 / 2	2 / A:2; B:2
Output (AC)		
Rated power (@ 230 V, 50 Hz)	3000 W	4000 W
Max. apparent AC power	3000 VA	4000 VA
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 280 V	220 V, 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
Rated grid frequency / rated grid voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	16 A	22 A
Power factor at rated output power	1	1
Adjustable displacement factor	–	–
Phase conductors / connection phases	1 / 1	1 / 1
Efficiency		
Max. efficiency / European efficiency	97 % / 96.3 %	97 % / 96.4 %
Protection		
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
General Data		
Dimensions (W / H / D)	470 / 445 / 180 mm (18.5 / 17.5 / 7.1 in)	470 / 445 / 180 mm (18.5 / 17.5 / 7.1 in)
Weight	22 kg / 48.5 lb	25 kg / 55.12 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	25 dB(A)	29 dB(A)
Self-consumption at night	0.5 W	0.5 W
Topology	Transformerless	Transformerless
Cooling concept	Convection	OptiCool
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP54	IP54
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Spring-type terminal	Spring-type terminal
Display	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, DK 5940 ED2.2***, G83/1-1, RD 1663, PPC, AS4777, EN 50438*, PPDS, KEMCO**	
Type designation	SB 3000TL-20	SB 4000TL-20



Accessories

RS485 interface
DM-485CB-10

* Does not apply to all national deviations of EN 50438
** Only for SB 3000TL-20
*** Only applies to IT variant
● Standard features ○ Optional features – Not available
Data at nominal conditions

Technical Data	Sunny Boy 5000TL	
Input (DC)		
Max. DC power (@ cos φ=1)	5300 W	
Max. input voltage	550 V	
MPP voltage range / rated input voltage	175 V – 440 V / 400 V	
Min. input voltage / initial input voltage	125 V / 150 V	
Max. input current input A / input B	15 A / 15 A	
Max. input current per string input A / input B	15 A / 15 A	
Number of independent MPP inputs / strings per MPP input	2 / A:2; B:2	
Output (AC)		
Rated power (@ 230 V, 50 Hz)	4600 W	
Max. apparent AC power	5000 VA	
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 280 V	
AC power frequency / range	50 Hz, 60 Hz / -5 Hz ... +5 Hz	
Rated grid frequency / rated grid voltage	50 Hz / 230 V	
Max. output current	22 A	
Power factor at rated output power	1	
Adjustable displacement factor	–	
Phase conductors / connection phases	1 / 1	
Efficiency		
Max. efficiency / European efficiency	97 % / 96.5 %	
Protection		
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	
General Data		
Dimensions (W / H / D)	470 / 445 / 180 mm (18.5 / 17.5 / 7.1 in)	
Weight	25 kg / 55.12 lb	
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	
Noise emission (typical)	29 dB(A)	
Self-consumption at night	0.5 W	
Topology	Transformerless	
Cooling concept	OptiCool	
Degree of protection (according to IEC 60529)	IP65	
Degree of protection of connection area (according to IEC 60529)	IP54	
Climatic category (according to IEC 60721-3-4)	4K4H	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	SUNCLIX	
AC terminal	Spring-type terminal	
Display	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, DK 5940 ED2.2***, G83/1-1, RD 1663, PPC, AS4777, EN 50438*, PPDS, KEMCO**	
Type designation	SB 5000TL-20	

Efficient
- Efficiency of up to 96 %
- Transformerless

Safe
- Integrated ESS DC switch-disconnector (optional)

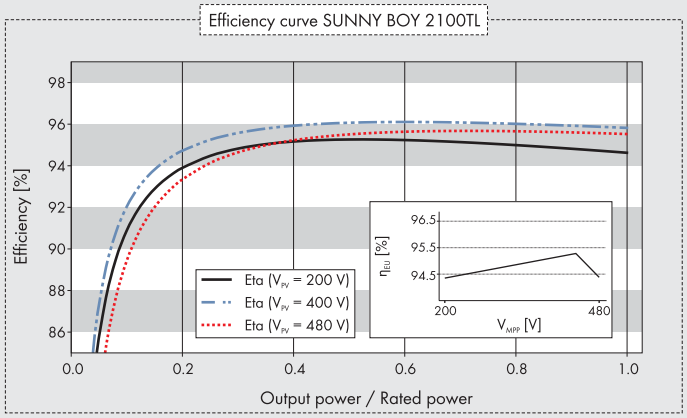
Reliable
- Field-proven technology
- Maintenance free, thanks to convection cooling

Simple
- SUNCLIX DC plug-in system

SUNNY BOY 1600TL / 2100TL

Small inverters with big results

Combining broad input voltage and current ranges, this transformerless Sunny Boy can be connected to nearly all standard crystalline PV modules. As a proven starter model among the transformerless inverters, its efficiency is top-class. Its low weight and robust enclosure allow simple installation, both indoors and outdoors. With its two performance classes, it is the ideal inverter for smaller PV plants.



Accessories

RS485 interface of type 485USPB-NR

Bluetooth Piggy-Back BTPBINV-NR

* Does not apply to all national deviations of EN 50438

● Standard features ○ Optional features – Not available

For SUNNY BOY 1600TL:

Revised March 2011

Data at nominal conditions

Technical Data	Sunny Boy 1600TL	Sunny Boy 2100TL
Input (DC)		
Max. DC power (@ cos φ=1)	1700 W	2200 W
Max. input voltage	600 V	600 V
MPP voltage range / rated input voltage	155 V – 480 V / 400 V	200 V – 480 V / 400 V
Min. input voltage / initial input voltage	125 V / 150 V	125 V / 150 V
Max. input current	11 A	11 A
Max. input current per string	11 A	11 A
Number of independent MPP inputs / strings per MPP input	1 / 1	1 / 2
Output (AC)		
Rated power (@ 230 V, 50 Hz)	1600 W	1950 W
Max. apparent AC power	1600 VA	2100 VA
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 260 V	220 V, 230 V, 240 V / 180 V – 260 V
AC power frequency / range	50 Hz / -4.5 Hz ... +2.5 Hz	50 Hz / -4.5 Hz ... +2.5 Hz
Rated grid frequency / rated grid voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	11 A	11 A
Power factor at rated output power	1	1
Adjustable displacement factor	–	–
Phase conductors / connection phases	1 / 1	1 / 1
Efficiency		
Max. efficiency / European efficiency	96 % / 95 %	96 % / 95.2 %
Protection		
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
General Data		
Dimensions (W / H / D)	440 / 339 / 214 mm	440 / 339 / 214 mm
	(17.3 / 13.4 / 8.4 in)	(17.3 / 13.4 / 8.4 in)
Weight	16 kg / 35.3 lb	16 kg / 35.3 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	33 dB(A)	33 dB(A)
Self-consumption at night	0.1 W	0.1 W
Topology	Transformerless	Transformerless
Cooling concept	Convection	Convection
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP65	IP65
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Connector	Connector
Display	Text line	Text line
Interface: RS485 / *Bluetooth*	○ / ○	○ / ○
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Multi-function relay	–	–
Certificates and approvals (more available on request)	CE, VDE0126-1-1, AS4777, EN 50438*, PPDS, UTE C15712-1	
Type designation	SB 1600TL-10	SB 2100TL

Innovative

- First transformerless SMA inverter for the North American market
- Certified in accordance with UL 1741 with safety standards from IEC 62109

Efficient

- Maximum efficiency of 98.3 %
- The best tracking efficiency with OptiTrac MPP tracking
- Transformerless, with H5 topology
- OptiCool active temperature management

Safe

- Integrated DC switch-disconnector
- SMA Power Balancer for three-phase grid connection

SUNNY BOY 8000TL-US / 9000TL-US / 10000TL-US

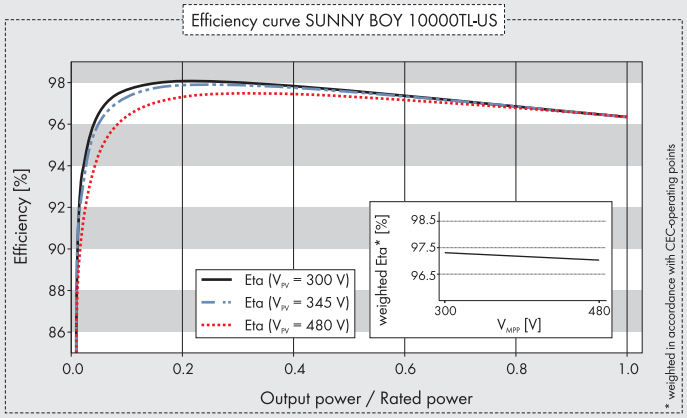
High yield providers with UL certification

With optimum efficiencies of 98.3 %, the transformerless Sunny Boy 8000TL-US, 9000TL-US and 10000TL-US provide their owners with high yields. The finely-graduated performance classes are ideal for the precise configuration of PV plants. The flexibility it provides for the design of plants and its low weight make the Sunny Boy the ideal inverter for mid-sized to large PV plants.

Napa Valley, USA

SUNNY BOY 8000TL-US / 9000TL-US / 10000TL-US

Technical Data	Sunny Boy 8000TL-US	Sunny Boy 9000TL-US
Input (DC)		
Recommended max. PV power (@ module STC)	10000 W	11250 W
Max. DC power (@ cos φ=1)	10000 W	11250 W
Max. input voltage	600 V	600 V
MPP voltage range / rated input voltage	300 V – 480 V / 345 V	300 V – 480 V / 345 V
Min. input voltage / initial input voltage	300 V / 360 V	300 V / 360 V
Max. input current	28 A	31 A
Max. input current per string	28 A	31 A
Number of independent MPP inputs / strings per MPP input @ Combiner Box	1 / 6	1 / 6
Output (AC)		
Rated output power / max. apparent AC power	8000 W / 8000 VA	9000 W / 9000 VA
Nominal AC voltage / Nominal AC voltage range	208 V / 183 V – 229 V	208 V / 183 V – 229 V
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz	60 Hz / 59.3 Hz ... 60.58 Hz
Max. output current	40 A	44 A
Rated grid voltage / Rated grid frequency	208 V / 60 Hz	208 V / 60 Hz
Power factor at rated output power	1	1
Phase conductors / connection phases	1 / 2	1 / 2
Efficiency		
CEC efficiency / max. efficiency	98 % / 98.3 %	98 % / 98.3 %
Protection		
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)	NEMA 3R / III	NEMA 3R / III
General Data		
Dimensions (W / H / D)	470 / 615 / 240 mm (18.4 / 24.1 / 9.5 in)	470 / 615 / 240 mm (18.4 / 24.1 / 9.5 in)
Dimensions of DC Disconnect (W / H / D)	187 / 297 / 190 mm (7.28 / 11.7 / 7.5 in)	187 / 297 / 190 mm (7.28 / 11.7 / 7.5 in)
Weight	35 kg / 78 lb	35 kg / 78 lb
Weight of DC Disconnect	3.5 kg / 8 lb	3.5 kg / 8 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	36 dB(A)	37 dB(A)
Self-consumption at night	0.25 W	0.25 W
Topology	Transformerless H5	Transformerless H5
Cooling concept	OptiCool	OptiCool
Degree of protection	NEMA 3R	NEMA 3R
Degree of protection of connection area	NEMA 3R	NEMA 3R
Climatic category (according to IEC 60721-3-4)	–	–
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	Screw terminal	Screw terminal
AC terminal	Screw terminal	Screw terminal
Display	Text line	Text line
Interface: RS485 / *Bluetooth*	○ / ○	○ / ○
Warranty: 10 / 15 / 20 years	● / ○ / ○	● / ○ / ○
Multi-function relay	–	–
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1	
Type designation	SB 8000TLUS-10	SB 9000TLUS-10



Accessories


Sunny Boy Combiner Box
SBCBTL6-10


Bluetooth Piggy-Back
BTPBINV-NR


RS485 interface of type
485USPB-SMC-NR


SMA Power Balancer Set
PBL-SBUS-10-NR

● Standard features ○ Optional features – Not available
Data at nominal conditions

Technical Data	Sunny Boy 10000TL-US	
Input (DC)		
Recommended max. PV power (@ module STC)	12500 W	
Max. DC power (@ cos φ=1)	10350 W	
Max. input voltage	600 V	
MPP voltage range / rated input voltage	300 V – 480 V / 345 V	
Min. input voltage / initial input voltage	300 V / 360 V	
Max. input current	35 A	
Max. input current per string	35 A	
Number of independent MPP inputs / strings per MPP input @ Combiner Box	1 / 6	
Output (AC)		
Rated output power / max. apparent AC power	10000 W / 10000 VA	
Nominal AC voltage / Nominal AC voltage range	208 V / 183 V – 229 V	
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz	
Max. output current	48 A	
Rated grid voltage / Rated grid frequency	208 V / 60 Hz	
Power factor at rated output power	1	
Phase conductors / connection phases	1 / 2	
Efficiency		
CEC efficiency / max. efficiency	97.5 % / 98.3 %	
Protection		
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)	NEMA 3R / III	
General Data		
Dimensions (W / H / D)	470 / 615 / 240 mm (18.4 / 24.1 / 9.5 in)	
Dimensions of DC Disconnect (W / H / D)	187 / 297 / 190 mm (7.28 / 11.7 / 7.5 in)	
Weight	35 kg / 78 lb	
Weight of DC Disconnect	3.5 kg / 8 lb	
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	
Noise emission (typical)	37 dB(A)	
Self-consumption at night	0.25 W	
Topology	Transformerless H5	
Cooling concept	OptiCool	
Degree of protection	NEMA 3R	
Degree of protection of connection area	NEMA 3R	
Climatic category (according to IEC 60721-3-4)	–	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	Screw terminal	
AC terminal	Screw terminal	
Display	Text line	
Interface: RS485 / *Bluetooth*	○ / ○	
Warranty: 10 / 15 / 20 years	● / ○ / ○	
Multi-function relay	–	
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1	
Type designation	SB 10000TLUS-10	

INVERTERS WITH TRANSFORMERS

Efficient

- OptiCool active temperature management
- OptiTrac MPP tracking for best tracking efficiency

Safe

- Galvanic isolation
- Integrated ESS DC switch-disconnector
- SMA Power Balancer for three-phase grid connection

Flexible

- Integrated reactive power capability and grid management functions
- Input voltage range of up to 800 V
- Suitable for PV array grounding

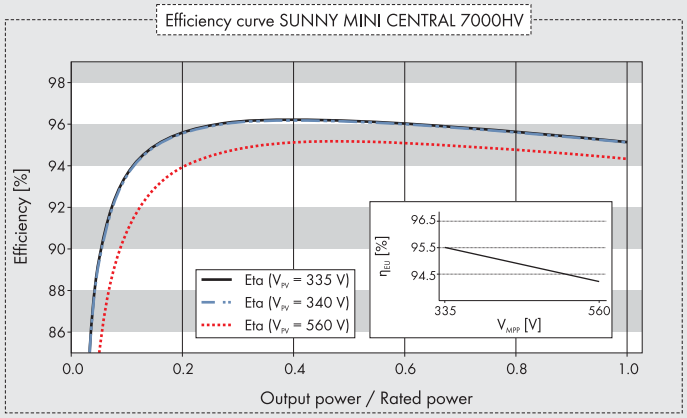
Easy to Use

- SUNCLIX DC plug-in system

SUNNY MINI CENTRAL 7000HV

The thin-film champion

More modules can be connected in series with the Sunny Mini Central 7000HV than with common inverters. This reduces cabling costs on the DC side and simplifies the installation. Due to its galvanic separation, the device can be used both with crystalline cells and thin film modules. Its performance range allows the installation of large PV arrays using smaller string inverters, resulting in more detailed PV plant monitoring. Its new reactive power and grid management functions mean it is also suitable for demanding applications.



Accessories

RS485 interface of type 485PB-SMC-NR

Bluetooth Piggy-Back BTPBINV-NR

SMA Power Balancer plug-in system PBL-SMC-10-NR

Grounding set "Positive" ESHV-P-NR

Grounding set "negative" ESHV-N-NR

● Standard features
○ Optional features
– Not available
Data at nominal conditions

* Does not apply to all national deviations of EN 50438

Technical Data	Sunny Mini Central 7000HV	
Input (DC)		
Max. DC power (@ cos φ=1)	7500 W	
Max. input voltage	800 V	
MPP voltage range / rated input voltage	335 V – 560 V / 340 V	
Min. input voltage / initial input voltage	290 V / 400 V	
Max. input current	23 A	
Max. input current per string	23 A	
Number of independent MPP inputs / strings per MPP input	1 / 4	
Output (AC)		
Rated output power (@230 V, 50 Hz)	6650 W	
Max. apparent AC power	7000 VA	
AC nominal voltage / range	220 V, 230 V, 240 V / 160 V – 265 V	
AC power frequency / range	50 Hz, 60 Hz / -6 Hz ... +5 Hz	
Rated power frequency / rated power voltage	50 Hz / 230 V	
Max. output current	31 A	
Power factor at rated output power	1	
Adjustable displacement factor	0.8 overexcited ... 0.8 underexcited	
Feed-in phases / connection phases	1 / 1	
Power balancing	●	
Efficiency		
Max. efficiency / European efficiency	96.2 % / 95.5 %	
Protection		
Reverse current protection / input-side disconnection device	– / ●	
Ground fault monitoring / grid monitoring	● / ●	
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	
General Data		
Dimensions (W / H / D)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)	
Weight	65 kg / 143.3 lb	
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	
Noise emission (typical)	41 dB(A)	
Internal consumption (night)	0.25 W	
Topology	LF transformer	
Cooling concept	OptiCool	
Degree of protection (according to IEC 60529)	IP65	
Degree of protection of connection area (according to IEC 60529)	IP65	
Climatic category (according to IEC 60721-3-4)	4K4H	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	SUNCLIX	
AC terminal	Screw terminal	
Display	Text line	
Interface: RS485 / *Bluetooth*	○ / ○	
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	
Certificates and approvals (more available on request)	CE, VDE0126-1-1, DK 5940 ED2.2, G83/1-1, RD 1663/2000, PPC, AS4777, EN 50438*, PPDS, UTE C15712-1, IEC 61727, C10/11	
Type designation	SMC 7000HV-11	

Powerful

- OptiCool active temperature management
- OptiTrac MPP tracking for best tracking efficiency

Safe

- Galvanic isolation
- Integrated ESS DC switch-disconnector
- SMA Power Balancer for three-phase grid connection

Flexible

- Suitable for PV array grounding

Easy to Use

- SUNCLIX DC plug-in system

SUNNY MINI CENTRAL 4600A / 5000A / 6000A

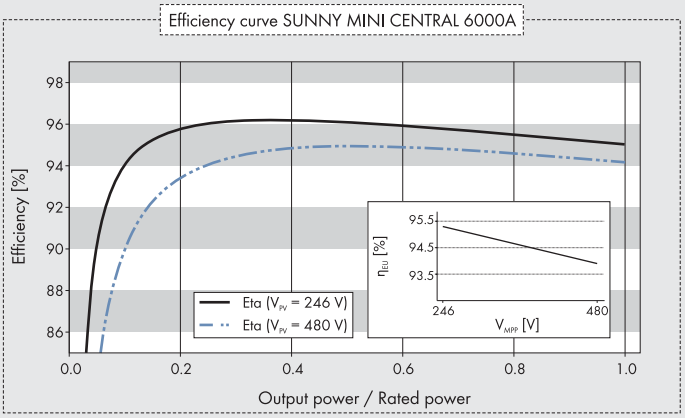
Proven technology for a multitude of applications

The Sunny Mini Central 4600A, 5000A and 6000A are installed when galvanic isolation is required. The galvanic isolation provides flexible connection possibilities which means they are universally applicable with crystalline cells as well as thin-film modules. Thanks to their graduated performance classes, these inverters offer the highest degree of plant design flexibility. The Sunny Mini Centrals 5000A and 6000A are ideal for three-phase systems, while the Sunny Mini Central 4600A is designed for single-phase PV plants.

Trévoux, France

SUNNY MINI CENTRAL 4600A / 5000A / 6000A

Technical Data	Sunny Mini Central 4600A	Sunny Mini Central 5000A
Input (DC)		
Max. DC power (@ cos φ=1)	5250 W	5750 W
Max. input voltage	600 V	600 V
MPP voltage range / rated input voltage	246 V – 480 V / 246 V	246 V – 480 V / 246 V
Min. input voltage / initial input voltage	211 V / 300 V	211 V / 300 V
Max. input current	26 A	26 A
Max. input current per string	26 A	26 A
Number of independent MPP inputs / strings per MPP input	1 / 4	1 / 4
Output (AC)		
Rated output power (@230 V, 50 Hz)	4600 W	5000 W
Max. apparent AC power	5000 VA	5500 VA
AC nominal voltage / range	220 V, 230 V, 240 V / 160 V – 265 V	220 V, 230 V, 240 V / 160 V – 265 V
AC power frequency / range	50 Hz, 60 Hz / 6 Hz ... 5 Hz	50 Hz, 60 Hz / -6 Hz ... +5 Hz
Rated power frequency / rated power voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	26 A	26 A
Power factor at rated output power	1	1
Adjustable displacement factor	–	–
Feed-in phases / connection phases	1 / 1	1 / 1
Power balancing	●	●
Efficiency		
Max. efficiency / European efficiency	96.1 % / 95.3 %	96.1 % / 95.3 %
Protection		
Reverse current protection / input-side disconnection device	– / ●	– / ●
Ground fault monitoring / grid monitoring	● / ●	● / ●
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
General Data		
Dimensions (W / H / D)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)
Weight	62 kg / 136.69 lb	62 kg / 136.69 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	42 dB(A)	42 dB(A)
Internal consumption (night)	0.25 W	0.25 W
Topology	LF transformer	LF transformer
Cooling concept	OptiCool	OptiCool
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP65	IP65
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Screw terminal	Screw terminal
Display	Text line	Text line
Interface: RS485 / *Bluetooth*	○ / ○	○ / ○
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Certificates and approvals (more available on request)	CE, VDE0126-1-1, DK 5940 ED2.2**, G83/1-1, RD 1663 / 2000, PPC, AS4777, EN 50438*, PPDS, UTE C15712-1, C10/11, IEC 61727	
Type designation	SMC4600A	SMC 5000A



Accessories

RS485 interface of type 485PB-SMC-NR

Bluetooth Piggy-Back BTPBINV-NR

SMA Power Balancer plug-in system PBL-SMC-10-NR

Grounding set "Positive" ESHV-P-NR

Grounding set "negative" ESHV-N-NR

● Standard features
○ Optional features
– Not available
Data at nominal conditions

* Does not apply to all national deviations of EN 50438
** Only applies to IT option

Technical Data	Sunny Mini Central 6000A	
Input (DC)		
Max. DC power (@ cos φ=1)	6300 W	
Max. input voltage	600 V	
MPP voltage range / rated input voltage	246 V – 480 V / 246 V	
Min. input voltage / initial input voltage	211 V / 300 V	
Max. input current	26 A	
Max. input current per string	26 A	
Number of independent MPP inputs / strings per MPP input	1 / 4	
Output (AC)		
Rated output power (@230 V, 50 Hz)	6000 W	
Max. apparent AC power	6000 VA	
AC nominal voltage / range	220 V, 230 V, 240 V / 160 V – 265 V	
AC power frequency / range	50 Hz, 60 Hz / -6 Hz ... +5 Hz	
Rated power frequency / rated power voltage	50 Hz / 230 V	
Max. output current	26 A	
Power factor at rated output power	1	
Adjustable displacement factor	–	
Feed-in phases / connection phases	1 / 1	
Power balancing	●	
Efficiency		
Max. efficiency / European efficiency	96.1 % / 95.3 %	
Protection		
Reverse current protection / input-side disconnection device	– / ●	
Ground fault monitoring / grid monitoring	● / ●	
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	
General Data		
Dimensions (W / H / D)	468 / 613 / 242 mm (18.4 / 24.1 / 9.5 in)	
Weight	63 kg / 138.89 lb	
Operating temperature range	-25 °C ... +60 °C / 13 °F ... 140 °F	
Noise emission (typical)	42 dB(A)	
Internal consumption (night)	0.25 W	
Topology	LF transformer	
Cooling concept	OptiCool	
Degree of protection (according to IEC 60529)	IP65	
Degree of protection of connection area (according to IEC 60529)	IP65	
Climatic category (according to IEC 60721-3-4)	4K4H	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	SUNCLIX	
AC terminal	Screw terminal	
Display	Text line	
Interface: RS485 / *Bluetooth*	○ / ○	
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	
Certificates and approvals (more available on request)	CE, VDE0126-1-1, DK 5940 ED2.2**, G83/1-1, RD 1663/2000, PPC, AS4777, EN 50438*, MEA, PPDS, IEC 61727	
Type designation	SMC 6000A	

Powerful

- Efficiency of up to 95.6 %
- OptiCool active temperature management
- OptiTrac MPP tracking for best tracking efficiency

Safe

- Galvanic isolation
- Integrated ESS DC switch-disconnector

Flexible

- For indoor and outdoor installation
- Suitable for PV array grounding

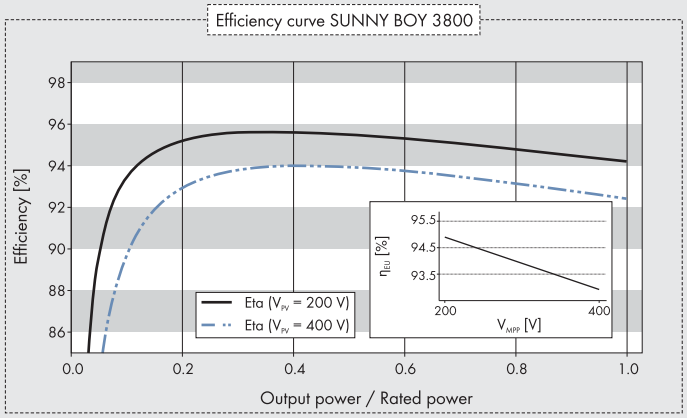
Easy to Use

- SUNCLIX DC plug-in system

SUNNY BOY 3300 / 3800

The generalist

It is robust, easy-to-handle, and, thanks to its galvanic isolation, can be used in all kinds of AC grids. The Sunny Boy 3300/3800 can be used with all module types. Its die-cast aluminum enclosure, with the OptiCool active temperature management system, guarantees the highest yields possible and a long service life, even under extreme conditions.



Accessories

RS485 interface of type 485USPB-NR

Bluetooth Piggy-Back BTPBINV-NR

Grounding set "Positive" ESHV-P-NR

Grounding set "negative" ESHV-N-NR

* Does not apply to all national deviations of EN 50438
** Only applies to IT option
● Standard features ○ Optional features – Not available
Data at nominal conditions

Technical Data	Sunny Boy 3300	Sunny Boy 3800
Input (DC)		
Max. DC power (@ cos φ=1)	3820 W	4040 W
Max. input voltage	500 V	500 V
MPP voltage range / rated input voltage	200 V – 400 V / 200 V	200 V – 400 V / 200 V
Min. input voltage / initial input voltage	200 V / 250 V	200 V / 250 V
Max. input current	20 A	20 A
Max. input current per string	16 A	16 A
Number of independent MPP inputs / strings per MPP input	1 / 3	1 / 3
Output (AC)		
Rated output power (@ 230 V, 50 Hz)	3300 W	3800 W
Max. apparent AC power	3600 VA	3800 VA
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 265 V	220 V, 230 V, 240 V / 180 V – 265 V
AC power frequency / range	50 Hz, 60 Hz / -4.5 Hz ... +4.5 Hz	50 Hz, 60 Hz / -4.5 Hz ... +4.5 Hz
Rated power frequency / rated power voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	18 A	18 A
Power factor at rated power	1	1
Adjustable displacement factor	–	–
Feed-in phases / connection phases	1 / 1	1 / 1
Efficiency		
Max. efficiency / European efficiency	95.2 % / 94.4 %	95.6 % / 94.7 %
Protection		
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
General Data		
Dimensions (W / H / D)	450 / 352 / 236 mm (17.7 / 13.9 / 9.3 in)	450 / 352 / 236 mm (17.7 / 13.,9 / 9.3 in)
Weight	38 kg / 83,6 lb	38 kg / 83,6 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	40 dB(A)	42 dB(A)
Internal consumption (night)	0.1 W	0.1 W
Topology	LF transformer	LF transformer
Cooling concept	OptiCool	OptiCool
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP65	IP65
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Connector	Connector
Display	Text line	Text line
Interface: RS485 / *Bluetooth*	○ / ○	○ / ○
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Multi-function relay	–	–
Certificates and approvals (more available on request)	CE, VDE0126-1-1, DK 5940 ED2.2**, G83/1-1, CER/06/190, RD 1663/2000, RD 661/2007, PPC, AS4777, EN 50438*, PPDS, UTE C15-712-1, C10/11	
Type designation	SB 3300	SB 3800

High yields

- Maximum efficiency of 96.3 %
- The best tracking efficiency with OptiTrac MPP tracking

Safe

- Galvanic isolation
- Integrated ESS DC switch-disconnector
- Anti-theft protection

Easy to Use

- Quick Module speeds and simplifies configuration
- SUNCLIX DC plug-in system
- Suitable for PV array grounding

Communicative

- Simple country configuration
- Graphic display
- *Bluetooth* technology as standard

SUNNY BOY 2000HF / 2500HF / 3000HF

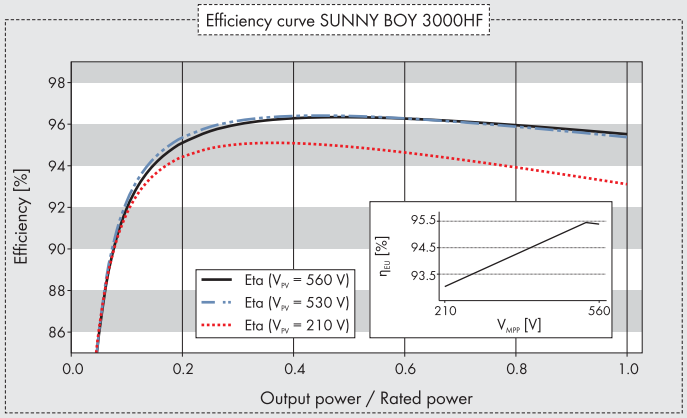
A high yield performer

Packed full of innovative technology, the Sunny Boy HF series provides the highest yields for transformer-based inverters in this performance class. Installation is now easier than ever thanks to the DC plug-in system SUNCLIX, the plug-in PV array grounding, and an easily accessible configuration area – all in a reduced weight unit. The wide input voltage range from 175 to 700 V gives you extraordinary plant design flexibility, and the modern graphic display and the *Bluetooth* communication make the devices even more user-friendly.

Vieste, Italy

SUNNY BOY 2000HF / 2500HF / 3000HF

Technical Data	Sunny Boy 2000HF	Sunny Boy 2500HF
Input (DC)		
Max. DC power (@ cos φ=1)	2100 W	2600 W
Max. input voltage	700 V	700 V
MPP voltage range / rated input voltage	175 V – 560 V / 530 V	175 V – 560 V / 530 V
Min. input voltage / initial input voltage	175 V / 220 V	175 V / 220 V
Max. input current	12 A	15 A
Max. input current per string	12 A	15 A
Number of independent MPP inputs / strings per MPP input	1 / 2	1 / 2
Output (AC)		
Rated output power (@ 230 V, 50 Hz)	2000 W	2500 W
Max. apparent AC power	2000 VA	2500 VA
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 280 V	220 V, 230 V, 240 V / 180 V – 280 V
AC power frequency / range	50 Hz, 60 Hz / -4.5 Hz ... +4.5 Hz	50 Hz, 60 Hz / -4.5 Hz ... +4.5 Hz
Rated power frequency / rated power voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	11.4 A	14.2 A
Power factor at rated power	1	1
Adjustable displacement factor	–	–
Feed-in phases / connection phases	1 / 1	1 / 1
Efficiency		
Max. efficiency / European efficiency	96.3 % / 95 %	96.3 % / 95.3 %
Protection		
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
General Data		
Dimensions (W / H / D)	348 / 580 / 145 mm (13.7 / 22.8 / 5.7 in)	348 / 580 / 145 mm (13.7 / 22.8 / 5.7 in)
Weight	17 kg / 37.4 lb	17 kg / 37.4 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	38 dB(A)	38 dB(A)
Internal consumption (night)	1 W	1 W
Topology	HF transformer	HF transformer
Cooling concept	OptiCool	OptiCool
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP54	IP54
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Connector	Connector
Display	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, G83/1-1, RD 1663 / 2000, PPC, AS4777, EN 50438*, PPDS, IEC 61727, ENEL-Guida, SI4777, UTE C15712-1	
Type designation	SB 2000HF-30	SB 2500HF-30



Accessories

SMA Plug-in Grounding
PLUGIN-GRD-10-NR*

Quick Module RS485 + multi-function relay
485QM-10-NR

* Does not apply to all national deviations of EN 50438
** Only applies to V option
● Standard features ○ Optional features – Not available
Data at nominal conditions

Technical Data	Sunny Boy 3000HF	
Input (DC)		
Max. DC power (@ cos φ=1)	3150 W	
Max. input voltage	700 V	
MPP voltage range / rated input voltage	210 V – 560V / 530 V	
Min. input voltage / initial input voltage	175 V / 220 V	
Max. input current	15 A	
Max. input current per string	15 A	
Number of independent MPP inputs / strings per MPP input	1 / 2	
Output (AC)		
Rated output power (@ 230 V, 50 Hz)	3000 W	
Max. apparent AC power	3000 VA	
Nominal AC voltage / range	220 V, 230 V, 240V / 180 V – 280 V	
AC power frequency / range	50 Hz, 60 Hz / -4.5 Hz ... +4.5 Hz	
Rated power frequency / rated power voltage	50 Hz / 230 V	
Max. output current	15 A	
Power factor at rated power	1	
Adjustable displacement factor	–	
Feed-in phases / connection phases	1 / 1	
Efficiency		
Max. efficiency / European efficiency	96.3 % / 95.4 %	
Protection		
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	
General Data		
Dimensions (W / H / D)	348 / 580 / 145 mm (13.7 / 22.8 / 5.7 in)	
Weight	17 kg / 37.4 lb	
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	
Noise emission (typical)	38 dB(A)	
Internal consumption (night)	1 W	
Topology	HF transformer	
Cooling concept	OptiCool	
Degree of protection (according to IEC 60529)	IP65	
Degree of protection of connection area (according to IEC 60529)	IP54	
Climatic category (according to IEC 60721-3-4)	4K4H	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	SUNCLIX	
AC terminal	Connector	
Display	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, G83/1-1, RD 1663/2000, PPC, AS4777, EN 50438*, PPDS, IEC 61727, ENEL-Guida, SI4777, UTE C15712-1, KEMCO**	
Type designation	SB 3000HF-30	

Safe
- Integrated ESS DC switch-disconnector
- Galvanic isolation

Versatile
- For indoor and outdoor installation
- Suitable for PV array grounding

Reliable
- Proven technology
- Maintenance free, thanks to convection cooling

Easy to Use
- SUNCLIX DC plug-in system

SUNNY BOY 1200 / 1700 / 2500 / 3000

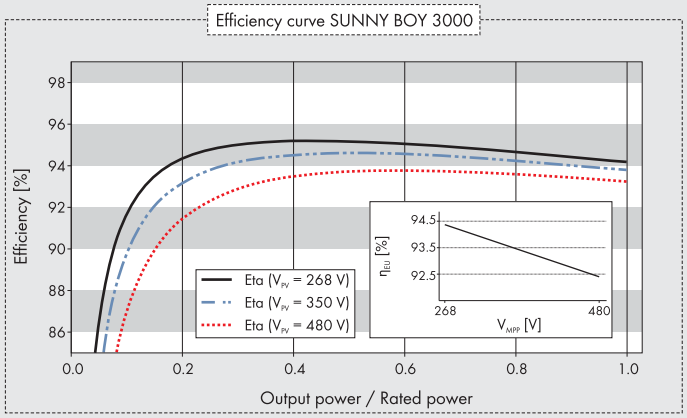
Proven technology for secure investments

The Sunny Boy 1200, 1700, 2500 and 3000 feature galvanic isolation, allowing them to be used in the different AC grids. The devices are also suitable for simple PV array grounding. Their integrated ESS DC switch-disconnector makes installation easier while also reducing assembly costs. Equipped with OptiTrac MPP tracking, the Sunny Boy will always find the ideal operating point, even under dynamic weather conditions, reliably converting solar energy into electric output.

Lyon, France

SUNNY BOY 1200 / 1700 / 2500 / 3000

Technical Data	Sunny Boy 1200	Sunny Boy 1700
Input (DC)		
Max. DC power (@ cos φ=1)	1320 W	1850 W
Max. input voltage	400 V	400 V
MPP voltage range / rated input voltage	100 V – 320 V / 120 V	147 V – 320 V / 180 V
Min. input voltage / initial input voltage	100 V / 120 V	139 V / 180 V
Max. input current	12.6 A	12.6 A
Max. input current per string	12.6 A	12.6 A
Number of independent MPP inputs / strings per MPP input	1 / 2	1 / 2
Output (AC)		
Rated output power (@ 230 V, 50 Hz)	1200 W	1550 W
Max. apparent AC power	1200 VA	1700 VA
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 265 V	220 V, 230 V, 240 V / 180 V – 265 V
AC power frequency / range	50 Hz, 60 Hz / -4.5 Hz ... +4.5 Hz	50 Hz, 60 Hz / -4.5 Hz ... +4.5 Hz
Rated power frequency / rated power voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	6.1 A	8.6 A
Power factor at rated power	1	1
Adjustable displacement factor	–	–
Feed-in phases / connection phases	1 / 1	1 / 1
Efficiency		
Max. efficiency / European efficiency	92.1 % / 90.9 %	93.5 % / 91.8 %
Protection		
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
General Data		
Dimensions (W / H / D)	440 / 339 / 214 mm (17.3 / 13.3 / 8.4 in)	440 / 339 / 214 mm (17.3 / 13.3 / 8.4 in)
Weight	23 kg / 50.6 lb	25 kg / 55 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	41 dB(A)	46 dB(A)
Internal consumption (night)	0.1 W	0.1 W
Topology	LF transformer	LF transformer
Cooling concept	Convection	Convection
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP65	IP65
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Connector	Connector
Display	Text line	Text line
Interface: RS485 / *Bluetooth*	○ / ○	○ / ○
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Multi-function relay	–	–
Certificates and approvals (more available on request)	CE, VDE0126-1-1, DK 5940 ED2.2**, G83/1-1, RD 1663/2000, PPC, AS4777, EN 50438*, PPDS, IEC-utility Meeting 216, IEC 61727, UTE C15712-1	
Type designation	SB 1200	SB 1700



Accessories

RS485 interface of type 485USPB-NR

Bluetooth Piggy-Back BTPBINV-NR

Grounding set "Positive" ESHV-P-NR

Grounding set "negative" ESHV-N-NR

* Does not apply to all national deviations of EN 50438
** Only applies to IT option
● Standard features ○ Optional features – Not available
Data at nominal conditions

Technical Data	Sunny Boy 2500	Sunny Boy 3000
Input (DC)		
Max. DC power (@ cos φ=1)	2700 W	3200 W
Max. input voltage	600 V	600 V
MPP voltage range / rated input voltage	224 V – 480 V / 300 V	268 V – 480 V / 350 V
Min. input voltage / initial input voltage	224 V / 300 V	268 V / 330 V
Max. input current	12 A	12 A
Max. input current per string	12 A	12 A
Number of independent MPP inputs / strings per MPP input	1 / 3	1 / 3
Output (AC)		
Rated output power (@ 230 V, 50 Hz)	2300 W	2750 W
Max. apparent AC power	2500 VA	3000 VA
Nominal AC voltage / range	220 V, 230 V, 240 V / 180 V – 265 V	220 V, 230 V, 240 V / 180 V – 265 V
AC power frequency / range	50 Hz, 60 Hz / -4.5 Hz ... +4.5 Hz	50 Hz, 60 Hz / -4.5 Hz ... +4.5 Hz
Rated power frequency / rated power voltage	50 Hz / 230 V	50 Hz / 230 V
Max. output current	12.5 A	15 A
Power factor at rated power	1	1
Adjustable displacement factor	–	–
Feed-in phases / connection phases	1 / 1	1 / 1
Efficiency		
Max. efficiency / European efficiency	94.1 % / 93.2 %	95 % / 93.6 %
Protection		
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
General Data		
Dimensions (W / H / D)	440 / 339 / 214 mm (17.3 / 13.3 / 8.4 in)	440 / 339 / 214 mm (17.3 / 13.3 / 8.4 in)
Weight	28 kg / 61.7 lb	32 kg / 70.4 lb
Operating temperature range	-25 °C ... +60 °C / -13 °F ... +140 °F	-25 °C ... +60 °C / -13 °F ... +140 °F
Noise emission (typical)	33 dB(A)	30 dB(A)
Internal consumption (night)	0.25 W	0.25 W
Topology	LF transformer	LF transformer
Cooling concept	Convection	Convection
Degree of protection (according to IEC 60529)	IP65	IP65
Degree of protection of connection area (according to IEC 60529)	IP65	IP65
Climatic category (according to IEC 60721-3-4)	4K4H	4K4H
Maximum permissible value for relative humidity (non-condensing)	100 %	100 %
Features		
DC terminal	SUNCLIX	SUNCLIX
AC terminal	Connector	Connector
Display	Text line	Text line
Interface: RS485 / *Bluetooth*	○ / ○	○ / ○
Warranty: 5 / 10 / 15 / 20 / 25 years	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
Multi-function relay	–	–
Certificates and approvals (more available on request)	CE, VDE0126-1-1, G83/1-1, CER/06/190, RD 1663/2000, PPC, AS4777, EN 50438*, PPDS, IEC-utility Meeting 216, DK 5940 ED2.2**	
Type designation	SB 2500	SB 3000

UL Certified

- For countries that require UL certification (UL 1741/IEEE 1547)

Efficient

- 97 % peak efficiency
- OptiCool active temperature management system

Safe

- Galvanic isolation

Easy to Use

- Automatic grid voltage detection*
- Integrated DC switch-disconnector

SUNNY BOY 5000-US / 6000-US / 7000-US / 8000-US

Versatile performer with UL certification

The Sunny Boy 5000-US, 6000-US, 7000-US and 8000-US inverters are UL certified and feature excellent efficiency. Graduated power classes provide flexibility in plant design. The automatic grid voltage detection* allows easy and safe installation. Furthermore, the galvanic isolation provides flexible connection possibilities. This way, the Sunny Boy inverters can be used with all types of modules-crystalline as well as thin-film.

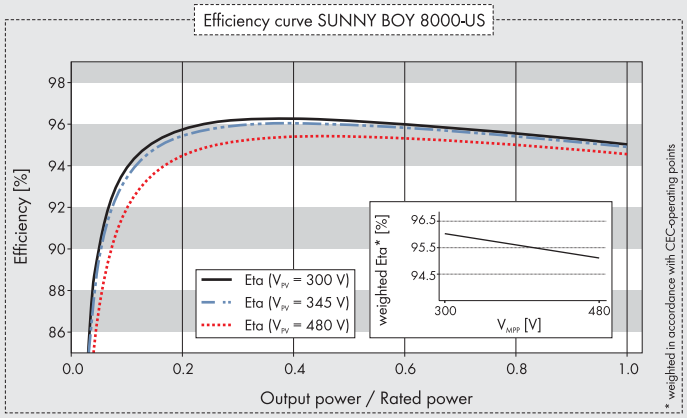
* US patent US7352549B1

** also available with operating temperature range up to -40 °C

Technical Data	Sunny Boy 5000-US 208 V	Sunny Boy 5000-US 240 V	Sunny Boy 5000-US 277 V
Input (DC)			
Recommended max. PV power (@ module STC)		6250 W	
Max. DC power (@ cos φ=1)		5300 W	
Max. input voltage		600 V	
MPP voltage range / rated input voltage		250 V – 480 V / 310 V	
Min. input voltage / initial input voltage		250 V / 300 V	
Max. input current		21 A	
Max. string fuse at DC switch-disconnector		20 A	
Number of independent MPP inputs		1	
Strings per MPP input (@ DC disconnector)		4	
Output (AC)			
Rated output power / max. apparent AC power		5000 W / 5000 VA	
nominal AC voltage / nominal AC voltage range	208 V / 183 V – 229 V	240 V / 211 V – 264 V	277 V / 244 V – 305 V
Rated power frequency / rated power voltage	60 Hz / 208 V	60 Hz / 240 V	60 Hz / 240 V
AC power frequency / range		60 Hz / 59.3 Hz ... 60.5 Hz	
Max. output current	24 A	21 A	60 Hz / 277 V18 A
Power factor at rated output power		1	
Feed-in phases / connection phases	1 / 2	1 / 2	1 / 1
Efficiency			
CEC efficiency / max. efficiency	95.5 % / 96.7 %	95.5 % / 96.8 %	95.5 % / 96.8 %
Protection			
DC reverse-polarity protection		●	
AC short-circuit current capability		●	
Galvanically isolated		●	
All-pole sensitive residual current monitoring unit		–	
Protection class (according to IEC 62103)		I	
Overvoltage category (according to IEC 60664-1)		III	
General Data			
Dimensions (W / H / D)		470 / 615 / 240 mm (18.4 / 24.1 / 9.5 in)	
Dimensions of DC Disconnect (W / H / D)		187 / 297 / 190 mm (7.3 / 11.7 / 7.5 in)	
Weight		64 kg / 143 lb	
Weight of DC Disconnect		3.5 kg / 8 lb	
Operating temperature range**		-25 °C ... +45 °C / -13 °F ... +113 °F	
Noise emission (typical)		44 dB(A)	
Internal consumption (night)		0.1 W	
Topology		LF transformer	
Cooling concept		OptiCool	
Degree of protection		NEMA 3R	
Degree of protection of connection area		NEMA 3R	
Climatic category (according to IEC 60721-3-4)		–	
Maximum permissible value for relative humidity (non-condensing)		100 %	
Features			
DC terminal		Screw terminal	
AC terminal		Screw terminal	
Display		Text line	
Interface: RS485 / *Bluetooth*		o / o	
Warranty: 10 / 15 / 20 years		● / o / o	
Certificates and approvals (more available on request)		UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1	
Type designation		SB 5000US	

SUNNY BOY 5000-US/6000-US/7000-US/8000-US

Technical Data	Sunny Boy 6000-US 208 V	Sunny Boy 6000-US 240 V	Sunny Boy 6000-US 277 V
Input (DC)			
Recommended max. PV power (@ module STC)		7500 W	
Max. DC power (@ cos φ=1)		6350 W	
Max. input voltage		600 V	
MPP voltage range / rated input voltage		250 V – 480 V / 310 V	
Min. input voltage / initial input voltage		250 V / 300 V	
Max. input current		25 A	
Max. string fuse at DC switch-disconnector		20 A	
Number of independent MPP inputs		1	
Strings per MPP input (@ DC disconnector)		4	
Output (AC)			
Rated output power / max. apparent AC power		6000 W / 6000 VA	
nominal AC voltage / nominal AC voltage range	208 V / 183 V – 229 V	240 V / 211 V – 264 V	277 V / 244 V – 305 V
Rated power frequency / rated power voltage	60 Hz / 208 V	60 Hz / 240 V	60 Hz / 277V
AC power frequency / range		60 Hz / 59.3 Hz ... 60.5 Hz	
Max. output current	29 A	25 A	22 A
Power factor at rated output power		1	
Feed-in phases / connection phases	1 / 2	1 / 2	1 / 1
Efficiency			
CEC efficiency / max. efficiency	95.5 % / 96.9 %	95.5 % / 96.8 %	96 % / 97 %
Protection			
DC reverse-polarity protection		●	
AC short-circuit current capability		●	
Galvanically isolated		●	
All-pole sensitive residual current monitoring unit		–	
Protection class (according to IEC 62103)		I	
Overvoltage category (according to IEC 60664-1)		III	
General Data			
Dimensions (W / H / D)		470 / 615 / 240 mm (18.4 / 24.1 / 9.5 in)	
Dimensions of DC Disconnect (W / H / D)		187 / 297 / 190 mm (7.3 / 11.7 / 7.5 in)	
Weight		64 kg / 143 lb	
Weight of DC Disconnect		3.5 kg / 8 lb	
Operating temperature range*		-25 °C ... +45 °C / -13 °F ... +113 °F	
Noise emission (typical)		45 dB(A)	
Internal consumption (night)		0.1 W	
Topology		LF transformer	
Cooling concept		OptiCool	
Degree of protection		NEMA 3R	
Degree of protection of connection area		NEMA 3R	
Climatic category (according to IEC 60721-3-4)		–	
Maximum permissible value for relative humidity (non-condensing)		100 %	
Features			
DC terminal		Screw terminal	
AC terminal		Screw terminal	
Display		Text line	
Interface: RS485 / *Bluetooth*		○ / ○	
Warranty: 10 / 15 / 20 years		● / ○ / ○	
Certificates and approvals (more available on request)		UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1	
Type designation		SB 6000US	



Accessories

RS485 interface of type 485USPB-SMC-NR

Bluetooth Piggy-Back BTPBINV-NR

SMA Power Balancer Set PBL-SBUS-10-NR

* also available with operating temperature range of -40 °C ... +45 °C / -40 °F ... +113 °F

● Standard features ○ Optional features – Not available

Data at nominal conditions

Sunny Boy 7000-US 208 V	Sunny Boy 7000-US 240 V	Sunny Boy 7000-US 277 V	Sunny Boy 8000-US 240 V	Sunny Boy 8000-US 277 V
8750 W			10000 W	
7400 W			8600 W	
600 V			600 V	
250 V – 480 V / 310 V			300 V – 480 V / 345 V	
250 V / 300 V			300 V / 365 V	
30 A			30 A	
20 A			20 A	
1			1	
4			4	
7000 W / 7000 VA			7680 W / 8000 VA	
208 V / 183 V – 229 V	240 V / 211 V – 264 V	277 V / 244 V – 305 V	240 V / 211 V – 264 V	277 V / 244 V – 305 V
60 Hz / 208 V	60 Hz / 240 V	60 Hz / 277V	60 Hz / 240 V	60 Hz / 277V
60 Hz / 59.3 Hz ... 60.5 Hz			60 Hz / 59.3 Hz ... 60.5 Hz	
34 A	29 A	25 A	32 A	32 A
1			1	
1 / 2	1 / 2	1 / 1	1 / 2	1 / 1
95.5 % / 97.1 %	96 % / 96.9 %	96 % / 97.1 %	96 / 96.3 %	96/96.5%
●			●	
●			●	
●			●	
–			–	
I			I	
III			III	
470 / 615 / 240 mm (18.4 / 24.1 / 9.5 in)			470 / 615 / 240 mm (18.4 / 24.1 / 9.5 in)	
187 / 297 / 190 mm (7.3 / 11.7 / 7.5 in)			187 / 297 / 190 mm (7.3 / 11.7 / 7.5 in)	
64 kg / 143 lb			66 kg / 145 lb	
3.5 kg / 8 lb			3.5 kg / 8 lb	
-25 °C ... +45 °C / -13 °F ... +113 °F			-25 °C ... +45 °C / -13 °F ... +113 °F	
46 dB(A)			49 dB(A)	
0.1 W			0.1 W	
LF transformer			LF transformer	
OptiCool			OptiCool	
NEMA 3R			NEMA 3R	
NEMA 3R			NEMA 3R	
–			–	
100 %			100 %	
Screw terminal			Screw terminal	
Screw terminal			Screw terminal	
Text line			Text line	
○ / ○			○ / ○	
● / ○ / ○			● / ○ / ○	
UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1			UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1	
SB 7000US			SB 8000US	

UL Certified

- For countries that require UL certification (UL 1741/IEEE 1547)

Efficient

- 96.8 % peak efficiency
- OptiCool active temperature management system

Safe

- Galvanic isolation

Easy to Use

- Automatic grid voltage detection*
- Integrated DC switch-disconnector

SUNNY BOY 3000-US / 3800-US / 4000-US

UL certified, reliable system managers

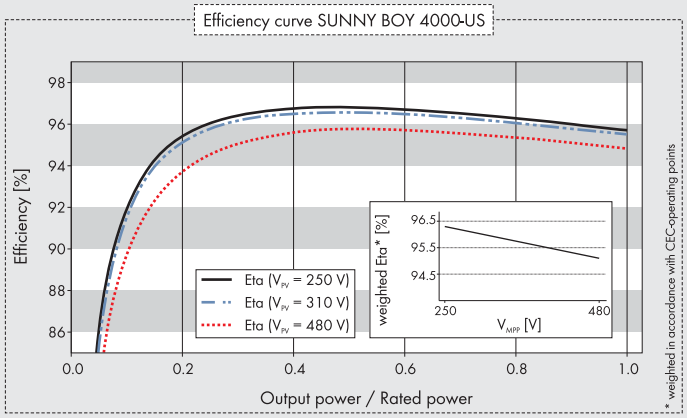
Specially designed for countries that require UL certification, these Sunny Boy inverters guarantee a safe installation process thanks to the automatic grid voltage detection*. The integrated DC circuit breaker simplifies the installation process and saves installation costs. Since the devices are suitable for PV array grounding, they can be combined with all module types. In addition, OptiCool guarantees the highest yields possible and a long service life, even under extreme conditions. The Sunny Boy 3800-US is designed for projects with a current limit of 16 A.

* US patent US7352549B1

Walnut Creek, USA

SUNNY BOY 3000-US / 3800-US / 4000-US

Technical Data	Sunny Boy 3000-US 208 V	Sunny Boy 3000-US 240 V	
Input (DC)			
Recommended max. PV power (@ module STC)	3750 W		
Max. DC power (@ cos φ=1)	3200 W		
Max. input voltage	500 V		
MPP voltage range / rated input voltage	200 V – 400 V / 250 V		
Min. input voltage / initial input voltage	175 V / 228 V		
Max. input current	17 A		
Max. string fuse at DC switch-disconnector	20 A		
Number of independent MPP inputs	1		
Strings per MPP input (@ DC disconnector)	4		
Output (AC)			
Rated output power / max. apparent AC power	3000 W / 3000 VA		
nominal AC voltage / nominal AC voltage range	208 V / 183 V – 229 V	240 V / 211 V – 264 V	
Rated power frequency / rated power voltage	60 Hz / 208 V	60 Hz / 240 V	
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz		
Max. output current	15 A	13 A	
Power factor at rated output power	1		
Feed-in phases / connection phases	1 / 2	1 / 2	
Efficiency			
CEC efficiency / max. efficiency	95 % / 96 %	95.5 % / 96.5 %	
Protection			
DC reverse-polarity protection	●		
AC short-circuit current capability	●		
Galvanically isolated	●		
All-pole sensitive residual current monitoring unit	–		
Protection class (according to IEC 62103)	I		
Overvoltage category (according to IEC 60664-1)	III		
General Data			
Dimensions (W / H / D)	450 / 350 / 235 mm (17.8 / 13.8 / 9.3 in)		
Dimensions of DC Disconnect (W / H / D)	187 / 297 / 190 mm (7.3 / 11.7 / 7.5 in)		
Weight	38 kg / 84 lb		
Weight of DC Disconnect	3.5 kg / 8 lb		
Operating temperature range	-25 °C ... +45 °C / -13 °F ... +113 °F		
Noise emission (typical)	40 dB(A)		
Internal consumption (night)	0.1 W		
Topology	LF transformer		
Cooling concept	OptiCool		
Degree of protection	NEMA 3R		
Degree of protection of connection area	NEMA 3R		
Climatic category (according to IEC 60721-3-4)	–		
Maximum permissible value for relative humidity (non-condensing)	100 %		
Features			
DC terminal	Screw terminal		
AC terminal	Screw terminal		
Display	Text line		
Interface: RS485 / *Bluetooth*	○ / ○		
Warranty: 10 / 15 / 20 years	● / ○ / ○		
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1		
Type designation	SB 3000US		



Accessories

RS485 interface of type 485USPB-NR

Bluetooth Piggy-Back BTPBINV-NR

● Standard features ○ Optional features – Not available
Data at nominal conditions

Technical Data	Sunny Boy 3800-US 240 V	Sunny Boy 4000-US 208 V	Sunny Boy 4000-US 240 V
Input (DC)			
Recommended max. PV power (@ module STC)	4750 W	4375 W	
Max. DC power (@ cos φ=1)	4200 W	4200 W	
Max. input voltage	600 V	600 V	
MPP voltage range / rated input voltage	250 V – 480 V / 310 V	250 V – 480 V / 310 V	
Min. input voltage / initial input voltage	250 V / 285 V	250 V / 285 V	
Max. input current	18 A	18 A	
Max. string fuse at DC switch-disconnector	20 A	20 A	
Number of independent MPP inputs	1	1	
Strings per MPP input (@ DC disconnector)	4	4	
Output (AC)			
Rated output power / max. apparent AC power	3800 W / 3800 VA	4000 W / 4000 VA	
nominal AC voltage / nominal AC voltage range	240 V / 211 V – 264 V	208 V / 183 V – 229 V	240 V / 211 V – 264 V
Rated power frequency / rated power voltage	60 Hz / 240 V	60 Hz / 208 V	60 Hz / 240 V
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz	60 Hz / 59.3 Hz ... 60.5 Hz	
Max. output current	16 A	17 A	17 A
Power factor at rated output power	1	1	
Feed-in phases / connection phases	1 / 2	1 / 2	1 / 2
Efficiency			
CEC efficiency / max. efficiency	96 % / 96.8 %	95.5 % / 96.5 %	96 % / 96.8 %
Protection			
DC reverse-polarity protection	●		
AC short-circuit current capability	●		
Galvanically isolated	●		
All-pole sensitive residual current monitoring unit	–		
Protection class (according to IEC 62103)	I		
Overvoltage category (according to IEC 60664-1)	III		
General Data			
Dimensions (W / H / D)	450 / 350 / 235 mm (17.8 / 13.8 / 9.3 in)		
Dimensions of DC Disconnect (W / H / D)	187 / 297 / 190 mm (7.3 / 11.7 / 7.5 in)		
Weight	38 kg / 84 lb		
Weight of DC Disconnect	3.5 kg / 8 lb		
Operating temperature range	-25 °C ... +45 °C / -13 °F ... +113 °F		
Noise emission (typical)	37 dB(A)		
Internal consumption (night)	0.1 W		
Topology	LF transformer		
Cooling concept	OptiCool		
Degree of protection	NEMA 3R		
Degree of protection of connection area	NEMA 3R		
Climatic category (according to IEC 60721-3-4)	–		
Maximum permissible value for relative humidity (non-condensing)	100 %		
Features			
DC terminal	Screw terminal		
AC terminal	Screw terminal		
Display	Text line		
Interface: RS485 / *Bluetooth*	○ / ○		
Warranty: 10 / 15 / 20 years	● / ○ / ○		
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1		
Type designation	SB 3800-US-10	SB 4000US	

High yields

- Maximum efficiency of 96 %
- The best tracking efficiency with OptiTrac MPP tracking
- OptiCool active temperature management

Safe

- Galvanic isolation
- Integrated DC switch-disconnector

User-friendly

- Slim enclosure mounts in walls of wooden-frame houses
- Plug-in grounding with GFDI
- Reduced weight
- Quick and easy configuration thanks to Quick Module

Communicative

- Graphic display
- *Bluetooth* technology as standard

SUNNY BOY 2000HF-US / 2500HF-US / 3000HF-US

Perfect yields

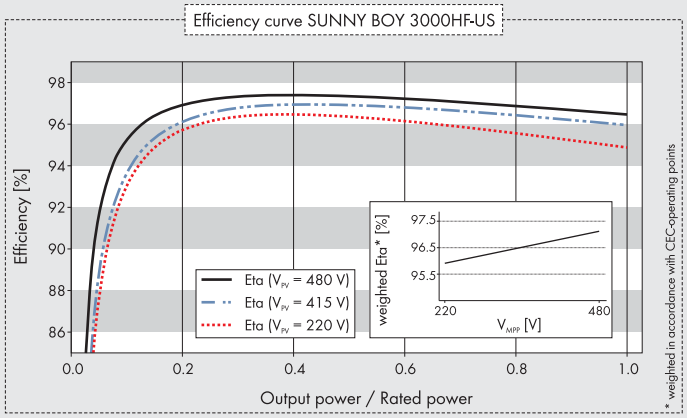
The new inverter generation are designed for projects requiring UL certification and represent the next step in innovative SMA technology. The slim enclosure allows for perfect fitting of the Sunny Boy HF in walls of wooden-frame houses. At the same time, installation is made even simpler due to automatic grid detection*, plug-in PV array grounding with GFDI and reduced weight. The wide input voltage range from 175 to 600 V gives you extraordinary flexibility for your plant design, and the modern graphic display and the wireless *Bluetooth* communication system provide a wealth of data in a user-friendly format.

* US patent US7352549B1

Technical Data	Sunny Boy 2000HF-US 208 V	Sunny Boy 2000HF-US 240 V
Input (DC)		
Recommended max. PV power (@ module STC)	2500 W	
Max. DC power (@ cos φ=1)	2100 W	
Max. input voltage	600 V	
MPP voltage range / rated input voltage	175 V – 480 V / 415 V	
Min. input voltage / initial input voltage	175 V / 220 V	
Max. input current	15 A	
Max. input current per string	15 A	
Number of independent MPP inputs / strings per MPP input	1 / 2	
Output (AC)		
Rated output power / max. apparent AC power	2000 W / 2000 VA	
nominal AC voltage / nominal AC voltage range	208 V / 183 V – 229 V	240 V / 211 V – 264 V
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz	
Rated grid frequency / Rated grid voltage	60 Hz / 208 V	60 Hz / 240 V
Max. output current	10 A	8.5 A
Power factor at rated output power	1	
Feed-in phases / connection phases	1 / 2	1 / 2
Efficiency		
CEC efficiency* / max. efficiency	96.5 % / 97.1 %	96.5 % / 97.1 %
Protection		
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	
General Data		
Dimensions (W / H / D)	348 / 727 / 183 mm (14 / 29 / 7 in)	
Weight	23 kg / 51 lb	
Operating temperature range	-25 °C ... +45 °C / -13 °F ... +113 °F	
Noise emission (typical)	–	
Internal consumption (night)	0.8 W	
Topology	LF transformer	
Cooling concept	OptiCool	
Degree of protection	NEMA 3R	
Degree of protection of connection area	NEMA 3R	
Climatic category (according to IEC 60721-3-4)	–	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	Spring-type terminal	
AC terminal	Spring-type terminal	
Display	Graphic	
Interface: RS485 / *Bluetooth*	o / ●	
Warranty: 10 / 15 / 20 years	● / o / o	
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1	
Type designation	SB 2000HFUS-30	

SUNNY BOY 2000HF-US / 2500HF-US / 3000HF-US

Technical Data	Sunny Boy 2500HF-US 208 V	Sunny Boy 2500HF-US 240 V
Input (DC)		
Recommended max. PV power (@ module STC)	3125 W	
Max. DC power (@ cos φ=1)	2600 W	
Max. input voltage	600 V	
MPP voltage range / rated input voltage	220 V – 480 V / 415 V	
Min. input voltage / initial input voltage	175 V / 220 V	
Max. input current	15 A	
Max. input current per string	15 A	
Number of independent MPP inputs / strings per MPP input	1 / 2	
Output (AC)		
Rated output power / max. apparent AC power	2500 W / 2500 VA	
nominal AC voltage / nominal AC voltage range	208 V / 183 V – 229 V	240 V / 211 V – 264 V
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz	
Rated grid frequency / Rated grid voltage	60 Hz / 208 V	60 Hz / 240 V
Max. output current	12 A	10.4 A
Power factor at rated output power	1	
Feed-in phases / connection phases	1 / 2	1 / 2
Efficiency		
CEC efficiency* / max. efficiency	96.5 % / 97.1 %	96.5 % / 97.1 %
Protection		
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	
General Data		
Dimensions (W / H / D)	348 / 727 / 183 mm (14 / 29 / 7 in)	
Weight	23 kg / 51 lb	
Operating temperature range	-25 °C ... +45 °C / -13 °F ... +113 °F	
Noise emission (typical)	–	
Internal consumption (night)	0.8 W	
Topology	LF transformer	
Cooling concept	OptiCool	
Degree of protection	NEMA 3R	
Degree of protection of connection area	NEMA 3R	
Climatic category (according to IEC 60721-3-4)	–	
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	Spring-type terminal	
AC terminal	Spring-type terminal	
Display	Graphic	
Interface: RS485 / *Bluetooth*	o / ●	
Warranty: 10 / 15 / 20 years	● / o / o	
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1	
Type designation	SB 2500HFUS-30	



Accessories

Flush-Mount Kit for integration in wood-framed walls
Mount Kit-10-NR

Quick Module RS485 + Multifunktionsrelais
485QMUS-10-NR

String Fuses Upgrade Kit
SB-SFK-US-10-NR

* provisional data

● Standard features ○ Optional features – Not available
Data at nominal conditions

Technical Data	Sunny Boy 3000HF-US 208 V	Sunny Boy 3000HF-US 240 V
Input (DC)		
Recommended max. PV power (@ module STC)	3750 W	
Max. DC power (@ cos φ=1)	3150 W	
Max. input voltage	600 V	
MPP voltage range / rated input voltage	220 V – 480 V / 415 V	
Min. input voltage / initial input voltage	220 V / 220 V	
Max. input current	15 A	
Max. input current per string	15 A	
Number of independent MPP inputs / strings per MPP input	1 / 2	
Output (AC)		
Rated output power / max. apparent AC power	3000 W / 3000 VA	
nominal AC voltage / nominal AC voltage range	208 V / 183 V – 229 V	240 V / 211 V – 264 V
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz	
Rated grid frequency / Rated grid voltage	60 Hz / 208 V	60 Hz / 240 V
Max. output current	14.8 A	12.5 A
Power factor at rated output power	1	
Feed-in phases / connection phases	1 / 2	1 / 2
Efficiency		
CEC efficiency* / max. efficiency	96.5 % / 97.1 %	96.5 % / 97.1 %
Protection		
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)	NEMA 3R / III	
General Data		
Dimensions (W / H / D)	348 / 727 / 183 mm (14 / 29 / 7 in)	
Weight	23 kg / 51 lb	
Operating temperature range	-25 °C ... +45 °C / -13 °F ... +113 °F	
Noise emission (typical)	–	
Internal consumption (night)	0.8 W	
Topology	LF transformer	
Cooling concept	OptiCool	
Degree of protection	NEMA 3R	
Degree of protection of connection area	NEMA 3R	
Climatic category (according to IEC 60721-3-4)		
Maximum permissible value for relative humidity (non-condensing)	100 %	
Features		
DC terminal	Spring-type terminal	
AC terminal	Spring-type terminal	
Display	Graphic	
Interface: RS485 / *Bluetooth*	○ / ●	
Warranty: 10 / 15 / 20 years	● / ○ / ○	
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN / CSA C22.2 107.1-1	
Type designation	SB 3000HFUS-30	

UL Certified

- For countries that require UL certification (UL 1741/IEEE 1547)

Safe

- Galvanic isolation

Easy to Use

- Simple installation thanks to three-point mounting assembly

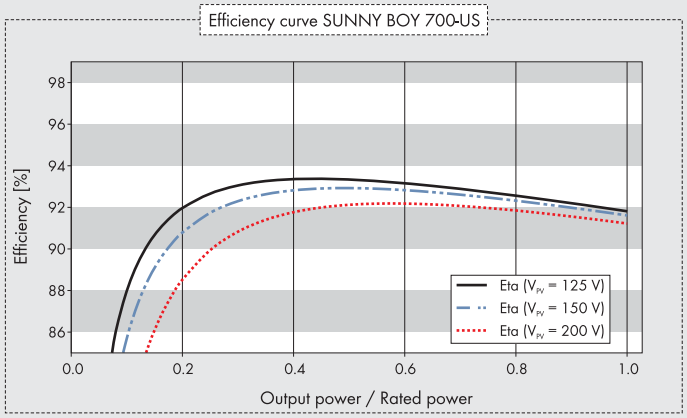
Flexible

- Three different input voltage ranges
- Modular addition for all applications

SUNNY BOY 700-US

The versatile choice for any system configuration

Implementing modular PV plants with ease is not a problem with the UL-certified Sunny Boy 700-US. It is optimally suited for expanding new or already existing PV plants in small increments. With its configurable input voltage range, it can be adjusted to individual plant requirements in just a few simple steps. Three different input voltage ranges are available. In addition, thanks to its degree of protection in accordance with NEMA 3X, it is extremely robust, and the practical three-point mounting assembly makes installation especially straightforward.



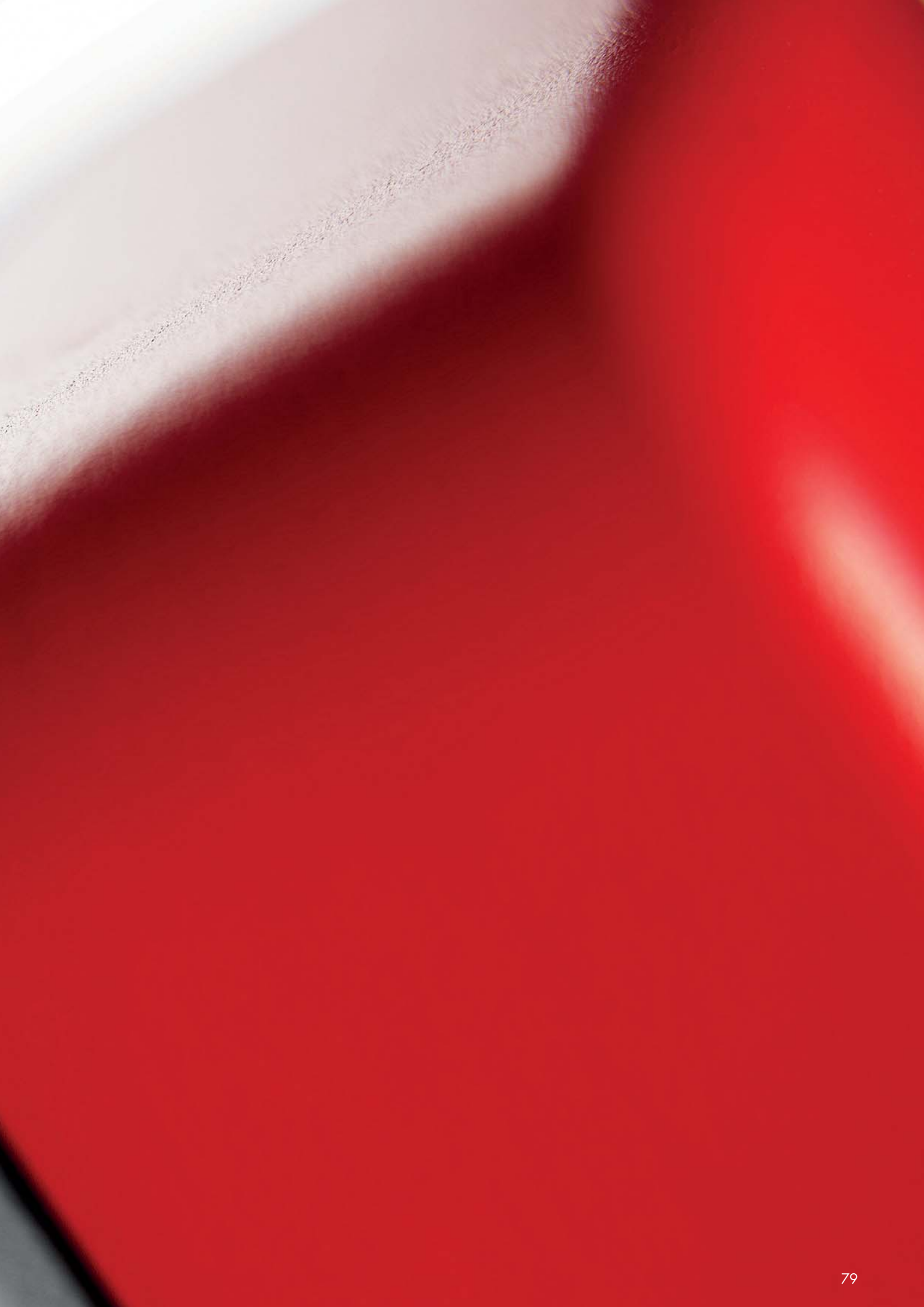
Accessories

RS485 interface of type 485USPB-NR

● Standard features ○ Optional features – Not available
Data at nominal conditions

Technical Data	Sunny Boy 700-US 150 V	Sunny Boy 700-US 200 V	Sunny Boy 700-US 250 V
Input (DC)			
Recommended max. PV power (@ module STC)	575 W	750 W	875 W
Max. DC power (@ cos φ=1)	510 W	670 W	780 W
Max. input voltage	150 V	200 V	250 V
MPP voltage range / rated input voltage	77 V – 120 V / 95 V	100 V – 160 V / 125 V	125 V – 200 V / 150 V
Min. input voltage / initial input voltage	75 V / 95 V	100 V / 125 V	125 V / 150 V
Max. input current	7 A	7 A	7 A
Max. input current per string	7 A	7 A	7 A
Number of independent MPP inputs	1	1	1
Strings per MPP input	2	2	2
Output (AC)			
Rated output power / max. apparent AC power	460 W / 460 VA		
nominal AC voltage / nominal AC voltage range	120 V / 106 V – 132 V	120 V / 106 V – 132 V	120 V / 106 V – 132 V
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz		
Max. output current	4.4 A	5.7 A	6.6 A
Power factor at rated output power	1		
Feed-in phases / connection phases	1 / 2	1 / 2	1 / 2
Efficiency			
CEC efficiency / max. efficiency	91.5 % / 92.4 %	91.5 % / 93.3 %	91.5 % / 93.6 %
Protection			
DC reverse-polarity protection	●		
AC short-circuit current capability	●		
Galvanically isolated	●		
All-pole sensitive residual current monitoring unit	–		
Protection class (according to IEC 62103)	NEMA 3X		
Overvoltage category (according to IEC 60664-1)	III		
General Data			
Dimensions (W / H / D)	322 / 290 / 180 mm (12.7 / 12.6 / 7.1 in)		
Weight	23 kg / 51 lb		
Operating temperature range	-25 °C ... +45 °C / -13 °F ... +113 °F		
Noise emission (typical)	No information		
Internal consumption (night)	0.1 W		
Topology	LF transformer		
Cooling concept	Convection		
Degree of protection	NEMA 3X		
Degree of protection of connection area	NEMA 3X		
Climatic category (according to IEC 60721-3-4)	–		
Maximum permissible value for relative humidity (non-condensing)	100 %		
Features			
DC terminal	Screw terminal		
AC terminal	Screw terminal		
Display	Text line		
Interface: RS485 / *Bluetooth*	○ / –		
Warranty: 10 / 15 / 20 years	● / ○ / ○		
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE1547, FCC Part 15 (Class A & B), CAN / CSA C22.2 107.1-1		
Type designation	SB 700U		

SUNNY TOWER



Efficient

- Efficiency up to 98 %
- Low specific price
- Increased yield due to several MPP trackers

Safe

- Integrated ESS DC switch-disconnector

Flexible

- Modular structure
- Sunny Mini Central and Sunny Boy inverters can be combined
- Outdoor installation possible

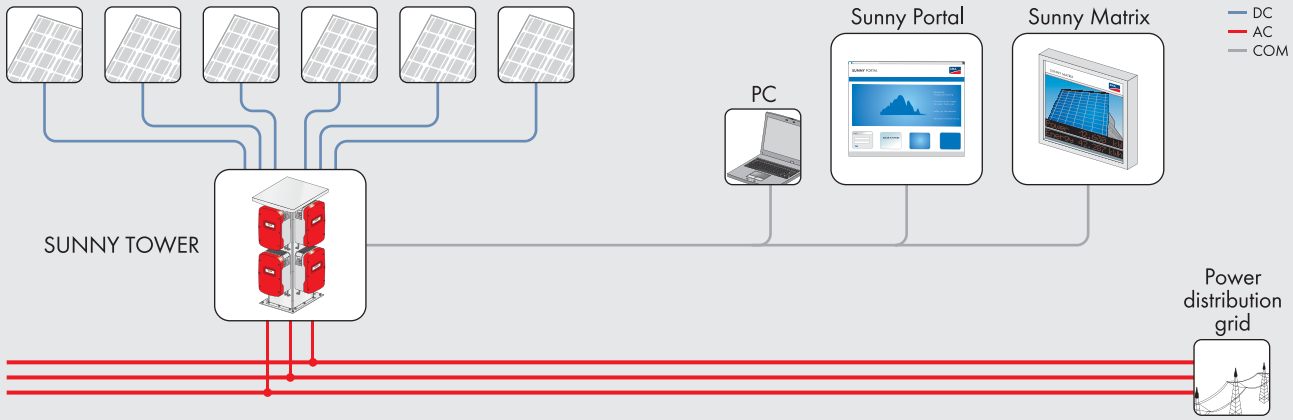
Convenient

- Turnkey delivery
- Simple installation
- Pre-configured data record with the Sunny WebBox (optional)

SUNNY TOWER

Easy installation – maximum yield

The Sunny Tower: As easy to install as a central inverter, as profitable as a Sunny Mini Central. Its exceptional efficiency of up to 98 % and easy installation ensure maximum power yield. The intelligent OptiCool temperature management system makes the Sunny Tower ideal for use at high ambient temperatures. Thanks to the modular design it is possible to combine Sunny Mini Central with Sunny Boy inverters, thus guaranteeing maximum flexibility in plant design and expansion.



Technical Data	Sunny Tower for 6 Sunny Mini Central 8000TL	Sunny Tower for 6 Sunny Mini Central 11000TL
Input (DC)		
Max. DC power (@ cos φ=1)	49.5 W	68.4 W
PV voltage range	333 V – 500 V	333 V – 500 V
Max. input voltage	700 V	700 V
Max. input current	6 x 25 A	6 x 34 A
DC voltage ripple	< 10 %	<10 %
Max. number of strings (parallel)	6 x 4	6 x 5
DC reverse polarity protection	Short-circuit diode	Short-circuit diode
Output (AC)		
Continuous AC power (at 40 °C)	48 kW	66 kW
Nominal AC power	48 kW	66 kW
Max. output current	3 x 70 A	3 x 96 A
THF of grid current	< 4 %	< 4 %
Nominal AC voltage	220 V – 240 V	220 V – 240 V
AC grid frequency	50 Hz, 60 Hz	50 Hz, 60 Hz
Power factor at rated power	1	1
Grid connection	Stud terminal, max. 5 x 95 mm²	Stud terminal, max. 5 x 95 mm²
Efficiency		
Max. efficiency	98 %	98 %
European efficiency	97.7 %	97.5 %
Protection		
Thermally-controlled varistors	●	●
Ground-fault monitoring	●	●
Disconnection input side	●	●
Grid monitoring	●	●
AC short-circuit current capability	●	●
Miniature circuit-breaker	6 x B50	6 x B63
General Data		
Inverter protection class / Sunny Tower (according to IEC 60529)	IP65 / IP44	IP65 / IP44
Cooling concept	OptiCool	OptiCool
Operating temperature range	-25 °C ... +60 °C	-25 °C ... +60 °C
Topology	Transformerless	Transformerless
Phase conductors	3	3
Dimensions (W / H / D)	1100 / 1810 / 990 mm	1100 / 1810 / 990 mm
Weight	320 kg	320 kg
Features		
Warranty: 5 / 10 years	● / ○	● / ○
Plant monitoring (pre-wired)	○ / ○ / ○	○ / ○ / ○
RS485 / Sunny WebBox / SMA Power Balancer		
● Standard ○ Optional – Not available		
Type designation	ST6	ST6

BACKUP SYSTEMS

Sunny Backup System: Solar Power, Even in the Event of Grid Failure

Power outage means: disconnection of the PV plant from the grid

No light, no heating, no computer: today, it is very difficult to do anything without electricity. But how many PV plant operators are aware that in the event of a power outage, the PV plant is disconnected from the grid for safety reasons? From that moment on, it ceases to provide solar power, neither for grid feed-in nor for internal power supply. And this is all the more irritating because, as the experts agree, lengthy blackouts and temporary outages are set to increase.

The SMA Sunny Backup System closes this supply gap. All owners of a personal PV plant can continue to obtain reliable and environmentally friendly power for important loads.

Self-sufficient power supply through energy storage

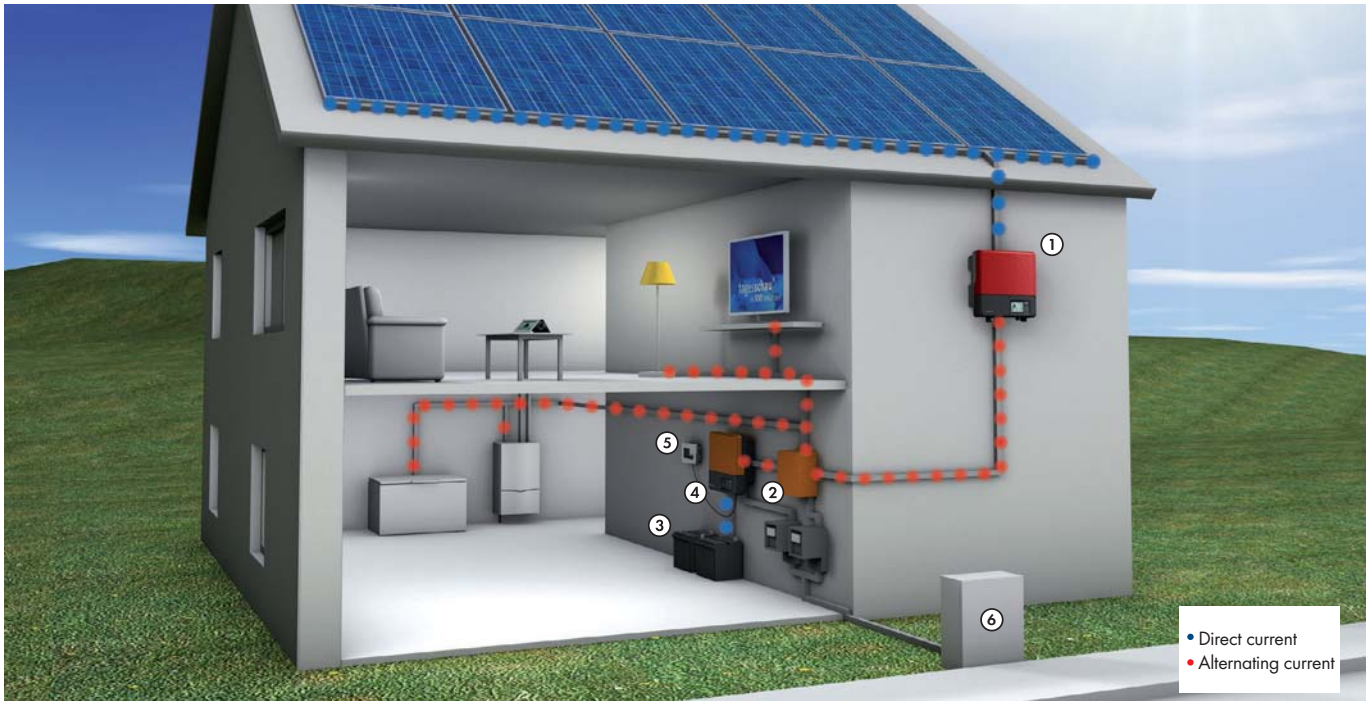
The Sunny Backup System is the result of 30 years' experience in photovoltaic system technology – both for grid-tie PV plants and for stand-alone grids. As a synthesis between grid-tie operation and off-grid technology, it guarantees optimum user safety as well as ease of installation.

The optimum electricity insurance

Power outages can have very serious economic consequences, especially for businesses – unless the PV plant has been equipped with a Sunny Backup System. With a Sunny Backup System, barn ventilation and heating lamps will continue to function in agricultural enterprises. Cold-storage units, hotels, supermarkets and restaurants can remain in operation with no loss of image or expensive disruptions to the cold chain. And heating, cookers, computers and lights will continue to function with no interruption in single-family homes.

For all available grid types

Previously, backup solutions were only allowed in the TN grid due to differences in grounding and protection concepts. Now, Sunny Backup Systems from SMA can be installed in TN and TT grids.



Components: *1. Sunny Boy PV inverter, 2. Sunny Backup automatic transfer switch, 3. Sunny Backup battery set, 4. Sunny Backup 2200, 5. Sunny Remote Control, 6. Grid connection*

- **System M / L for all current grid types**
- **System M with optional phase coupling**

Simple

- Can be integrated into existing and new PV plants
- On-site configuration of grid type

Flexible

- Capacities from 5 kW to 100 kW available

Efficient

- Small battery due to integration of the PV plant
- Consistently high PV efficiency

Reliable

- Certified protection concepts for TN and TT grids
- Automatic switching in approx. just 20 milliseconds

SUNNY BACKUP SYSTEM M / L / XL

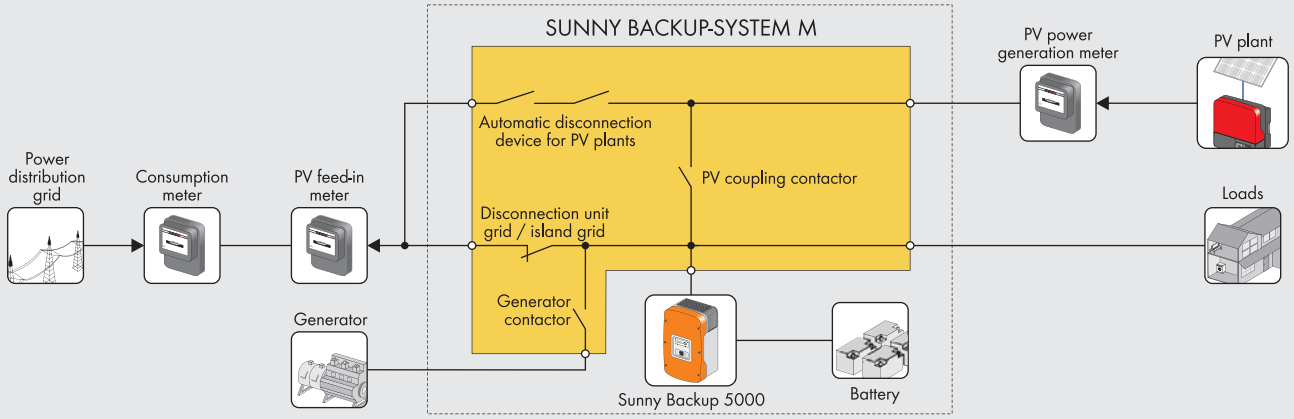
Solar power – even in the event of grid failure

Greatest performance and user benefits along with the lowest investment and operating costs: in comparison with conventional emergency power systems, the Sunny Backup System scores well. As an add-on to the PV plant, the Sunny Backup automatically switches to stand-alone power supply within approximately 20 milliseconds of a grid failure. Both new and existing PV plants can be equipped with a Sunny Backup System – with no effect on PV efficiency. And the best part: due to the integration of the PV plant, a small and therefore low-cost battery can be implemented as it is usually only needed to bridge the night hours.

Wörrstadt, Germany

SUNNY BACKUP SYSTEM M / L / XL

Technical Data	Sunny Backup System M	Sunny Backup System L
Output: Loads		
Nominal power / current during grid operation	7.4 kW / 32 A at 35°C	35 kW / 3 x 50 A at 35°C
Max. power / current in grid operation for 30 min	8.9 kW / 38 A at 35°C	41 kW / 3 x 60 A at 35°C
Maximum fuse link	40 A	63 A
Backup power (duration / 30 min / 1 min)	5 kW / 6.5 kW / 8.4 kW	15 kW / 19.5 kW / 25.2 kW
Number of phases (grid operation / backup operation)	3 / 3 x 1~	3 / 3
Voltage (range)	230 V (187 V – 253 V)	230 V (187 V – 253 V)
Frequency (range)	50 Hz (45 Hz ... 55 Hz)	50 Hz (45 Hz ... 55 Hz)
Permissible grid structure	TN / TT	TN / TT
Typical interruption time during grid failure	20 ms	20 ms
Input PV Plant		
Nominal AC-PV power / current	5.7 kW / 25 A at 35°C	28 kW / 3 x 40 A at 35°C
Maximum size of fuse link	32 A	50 A
Compatible PV inverter	all SB and SMC-A	all SB, SMC and Tripower
Input Battery		
Nominal voltage	48 V	48 V
Battery type	VRLA / FLA / NiCd	VRLA / FLA / NiCd
Efficiency / Self-consumption		
Max. efficiency in backup operation	94 %	95 %
Self-consumption day / night (silent mode)	48 W / 32 W	103 W / 69 W
Protection		
DC reverse polarity protection / deep discharge protection	● / ●	● / ●
AC short circuit / AC overload	● / ●	● / ●
Grid monitoring (SMA Grid Guard) / galvanic isolation	● / ●	● / ●
Protection class (according to IEC 62103)	I	I
Overvoltage category (according to IEC 60664)	III	III
General Data		
SBU dimensions (W / H / D)	467 / 612 / 235 mm	467 / 612 / 235 mm
AS-Box dimensions (W / H / D)	550 / 950 / 225 mm	800 / 950 / 225 mm
SBU / AS-Box weight	63 kg / 50 kg	63 kg / 70 kg
Operating temperature range	-25°C ... +50°C	-25°C ... +50°C
Climatic class (according to IEC 60721-2-1)	4K4H	4K4H
SBU / AS-Box degree of protection (IP) (according to IEC 60529)	IP30 / IP54	IP30 / IP54
Features / Function		
Integrated bypass in case of fault / test operation	● / ●	● / ●
State of charge calculation	●	●
Communication line	5 m	5 m
Array input (nominal power)	Optional (32 A at 35°C)	Optional (40 A at 35°C)
SBU / AS-Box warranty (5 / 10 / 15 / 20 / 25 years)	● / ○ / ○ / ○ / ○	● / ○ / ○ / ○ / ○
240 V voltage range (192.5 – 260.0 V)	○	○
Certificate and approvals (further approvals on request)	CE, VDE 0126-1-1	CE, VDE 0126-1-1
Accessories		
Battery cables	○	○
Battery fuse "BATFUSE"	○	○
Interfaces (RS485 PB) / Multicluster PB	○ / ○	○ / ○
● Standard equipment ○ Optional – Not available		
Type designation	SBU5000 and AS-Box-M-20	3 x SBU5000 and AS-Box-L-20



Technical Data	Sunny Backup System XL (only for TN)	
Output: Loads		
Nominal power / current during grid operation	110 kW / 3 x 160 A at 25°C	
Max. power / current in grid operation for 30 min	– / –	
Maximum fuse link	160 A	
Backup power (duration / 30 min / 1 min)	60 kW / 78 kW / 100 kW	
Number of phases (grid operation / backup operation)	3 / 3	
Voltage (range)	230 V (187 V – 253 V)	
Frequency (range)	50 Hz (45 Hz ... 55 Hz)	
Permissible grid structure	TN	
Typical interruption time during grid failure	20 ms	
Input PV Plant		
Nominal AC-PV power / current	110 kW / 3 x 160 A at 25°C	
Maximum size of fuse link	160	
Compatible PV inverter	all SB, SMC and Tripower	
Input Battery		
Nominal voltage	48 V	
Battery type	VRLA / FLA / NiCd	
Efficiency / Self-consumption		
Max. efficiency in backup operation	95 %	
Self-consumption day / night (silent mode)	360 W / 230 W	
Protection		
DC reverse polarity protection / deep discharge protection	● / ●	
AC short circuit / AC overload	● / ●	
Grid monitoring (SMA Grid Guard) / galvanic isolation	● / ●	
Protection class (according to IEC 62103)	I	
Overvoltage category (according to IEC 60664)	III	
General Data		
SBU dimensions (W / H / D)	467 / 612 / 235 mm	
AS-Box dimensions (W / H / D)	1000 / 1600 / 300 mm	
SBU / AS-Box weight	63 kg / 180 kg	
Operating temperature range	-25°C ... +50°C	
Climatic class (according to IEC 60721-2-1)	4K4H	
SBU / AS-Box degree of protection (IP) (according to IEC 60529)	IP30 / IP65	
Features / Function		
Integrated bypass in case of fault / test operation	● / ●	
State of charge calculation	●	
Communication line	5 m	
Array input (nominal power)	Optional (160 A at 25°C)	
SBU / AS-Box warranty (5 / 10 / 15 / 20 / 25 years)	● / o / o / o / o	
240 V voltage range (192.5 – 260.0 V)	o	
Certificate and approvals (further approvals on request)	CE, VDE 0126-1-1	
Accessories		
Battery cables	o	
Battery fuse "BATFUSE"	o	
Interfaces (RS485 PB) / Multicluster PB	● / o	
● Standard equipment o Optional – Not available		
Type designation	12 X SBU 5000 and AS-Box-XL	

Simple

- Can be integrated into existing and new PV plants
- Pre-configured set

Efficient

- Energy supply and battery charging via the grid
- Same high PV efficiency
- Compact and affordable automatic transfer switch
- Smaller battery dimensioning due to integration of the PV plant

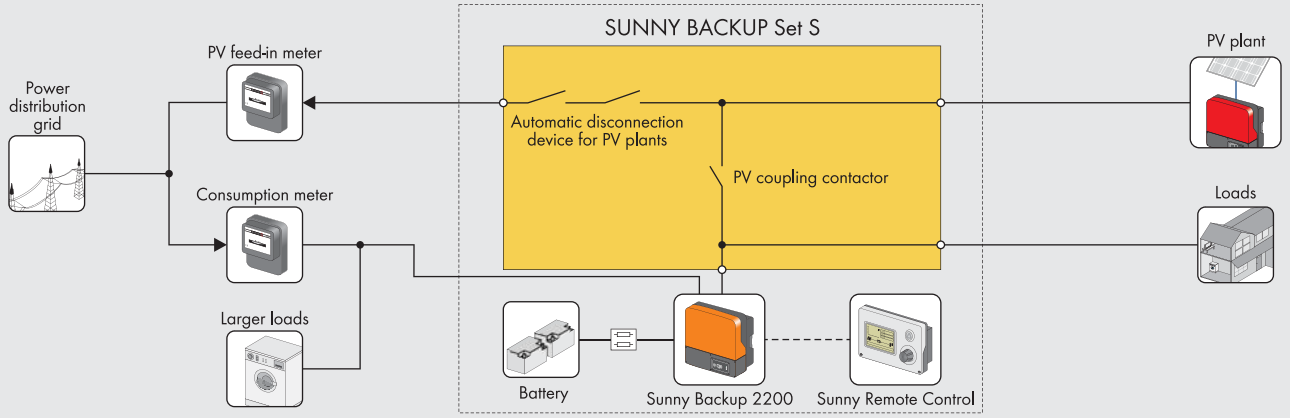
Reliable

- Automatic switching to backup supply in only approx. 50 milliseconds

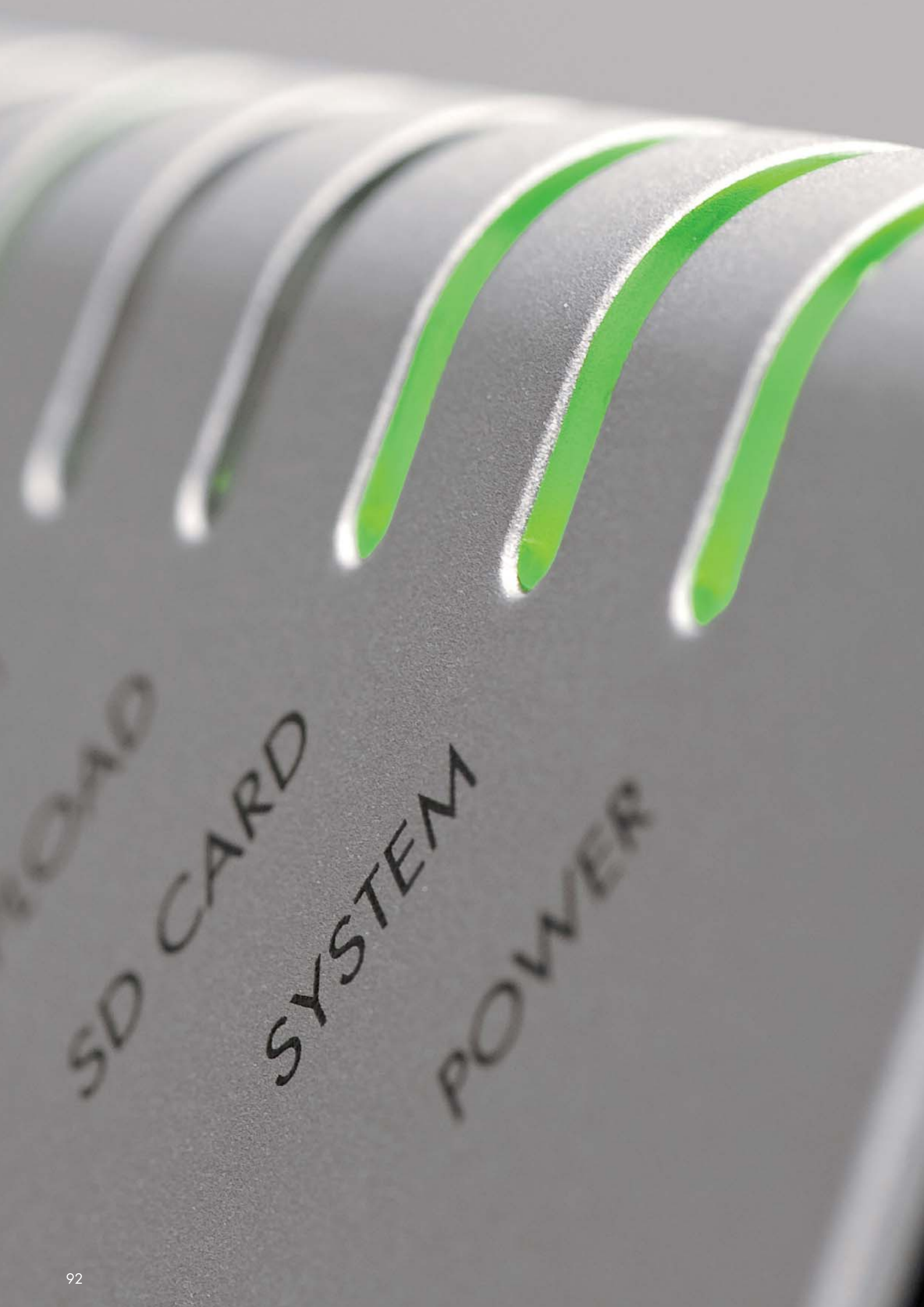
SUNNY BACKUP SET S

Reliable back-up electricity supply for single-family homes

Innovative power backup for private homes: as an add-on to the PV plant, the Sunny Backup Set S switches automatically to off-grid mode within 50 milliseconds in the event of grid failure. Whether in summer or winter, if the power goes out, owners of small to medium-sized PV plants and inverters from SMA can supply their most important consumer loads themselves. Our affordable complete solution is not only suited to new PV plants; existing PV plants can also be retrofitted with this certified Sunny Backup Set S without problems.



Technical Data	Sunny Backup Set S	
Output: Loads		
Nominal power / current during grid operation	5.7 kW / 25 W	
Backup power (duration / 30 min / 1 min)	2.2 kW / 2.9 kW / 3.8 kW	
Number of phases (grid operation / backup operation)	1 / 1	
Voltage (range)	230 V (172.5 V – 264.5 V)	
Frequency (range)	50 Hz (45 Hz ... 65 Hz)	
Acceptable grid types	TN	
Typical duration of interruption in case of a grid failure	50 ms	
Input PV Plant		
Nominal AC-PV power / current	4.6 kW / 20	
Compatible PV inverters	All Sunny Boy inverters*	
Input Battery		
Nominal voltage / number of blocks	24 V / 2 x 12 V	
Battery type, energy / capacity per block	AGM, 3.4 kWh / 142 Ah	
Efficiency / Self-consumption		
Maximum efficiency of backup operation	93.6 %	
Self-consumption day / night (silent mode)	40 W / 6 W	
Service life (according to Eurobat)	Service life (according to Eurobat)	
Protection		
DC reverse polarity protection / deep discharge protection	– / ●	
AC short circuit / AC overload	● / ●	
Grid monitoring (SMA Grid Guard) / galvanic isolation	● / ●	
General Data		
SBU dimensions (W / H / D)	470 / 445 / 180 mm	
AS-Box dimensions (W / H / D)	200 / 300 / 120 mm	
Battery dimensions per block (W / H / D)	498 / 230 / 177 mm	
SBU weight / AS-Box / battery block	19 kg / 4.5 kg / 54.5 kg	
Operating temperature range	-25°C ... +60°C	
Degree of protection of SBU / AS-Box (according to IEC 60529)	IP54 / IP65	
Features / Function		
Integrated bypass in case of fault / test operation	● / ●	
State of charge calculation / communication line	● / 5 m	
Array input (nominal power)	–	
SBU 2200 / AS-Box warranty (5 / 10 / 15 / 20 / 25 years)	● / ○ / ○ / ○ / ○	
Battery warranty (2 years)	●	
AS-Box warranty (5 years)	● / ○ / ○ / ○ / ○	
Certificate and approvals (further approvals on request)	CE, VDE 0126-1-1	
Accessories		
Battery cables	4 m	
Battery fuse "BATFUSE"	●	
Interfaces (RS485 PB)	○	
Additional battery parallel / other battery	○ / ○	
External control unit "SRC-1"	●	
* SB 2500, SB 2800, SB 3000 model May 2005 or later		
● Standard features ○ Optional – Not available		
Type designation	SBU-Set-S.1	


SD CARD
SYSTEM
POWER

MONITORING SYSTEMS


25.05.10
16:58
Power today
kW
5.0
4.0
3.0
2.0
1.0
0
8
11
14
17
20
Power
2.250 kW
24.063
E-Today
kWh
1178.23
E-Total
kWh
SUNNY BEAM

Monitoring, Informing, Presenting – Yield Maintenance for PV Plants

It's Sunday afternoon at the garden fence and the sun is shining. Two neighbors are talking. One neighbor points to the PV plant on the other's roof. "So, how much is it generating right now?" The system operator takes a quick look at the Sunny Beam. The neighbor is impressed with the answer. It's a good feeling. The PV plant is doing what it should – feeding solar power into the power distribution grid and securing valuable yields. And best of all, the plant (practically) takes care of itself, thanks to intelligent monitoring solutions from SMA.

Everything under control

Comprehensive management is the key to profits for both small PV plants and large PV farms. By choosing a PV plant, operators are investing in an environmentally friendly technology as well as long-term profits. This means that the plant must run smoothly at all times. If reductions in output go unnoticed over longer periods, substantial loss of profits can occur. Continuous plant monitoring entails not only staying up-to-date on the amount of solar power being produced, but being able to react quickly to changes and problems.

Simple maintenance and configuration

SMA plant monitoring also provides many benefits to solar power professionals. In the event of a problem, installers have quick access to all plant data. This information allows contractors to draw conclusions about a specific event and troubleshoot problems remotely. This can sometimes save on the need for long distance service visits. SMA products are also useful for plant maintenance and configuration. With Sunny Explorer, for example, you can access an inverter with a laptop equipped with a *Bluetooth* interface.

Reliable and simple – everywhere in the world

Modern PV plant monitoring is much more than simple control. It provides information regarding plant operation in an easy-to-read manner and, thanks to the Internet and e-mail, is accessible from any location in the world. Plant performance data is presented continuously in a simple, clear and professional format. PV plant monitoring can also be used for display purposes, such as demonstrating a company's ecological commitment to the public.

PV plant monitoring can be accomplished in a number of ways and SMA offers a variety of options, including wireless or cabled connections, compact or complex, simple or extensive. Whether it is a residential system or a commercial system, monitoring is an essential component of any PV plant. And, to match the expected 20 year lifespan of SMA inverters, plant monitoring devices are also designed and manufactured using the highest quality standards.

RESIDENTIAL SYSTEM

COMMERCIAL SYSTEM

INDUSTRIAL SYSTEM

Comfortable, Modular and Reliable Monitoring: The Right Solution for Every PV Plant

Every PV plant is unique and the monitoring solution should be tailored to each plant's specific requirements. The following three scenarios demonstrate some of the different options available for our customers.

Simple monitoring, control and intelligent optimization of self-consumption for residential systems

For PV plants on single-family homes, SMA recommends the Sunny Home Manager, Sunny Beam or the Sunny Explorer software. With our user-friendly and compact products, the operators can easily keep an eye on yields, around the clock. In addition, the Sunny Home Manager allows you to analyze and optimize your energy consumption.

Modular plant monitoring for commercial systems

For larger PV plants, a variety of components can be used to create a customized monitoring solution. Combined with SMA inverters, operators and solar power professionals benefit from a perfectly coordinated system. The product range includes, among others, Sunny WebBox, Sunny Portal and Flashview.

Reliable monitoring for PV power stations

The larger the PV plant, the faster small reductions in power negatively affect yields – if they remain undiscovered. With our solutions designed especially for PV farms, even megawatt plants can be accurately and comprehensively monitored.

Easy to Use

- Free PC software for wireless monitoring of the PV plant via *Bluetooth*
- Quick overview of yields and plant status

User-friendly

- Intuitive operation
- Graphic presentation of key PV plant data

Reliable

- Long-term archiving via data export in CSV format
- Rapid diagnosis via access to measured values and event memory

SUNNY EXPLORER

The free PC software solution

Switch on your PC, activate the *Bluetooth* interface, and start Sunny Explorer. That's all that's needed to give operators and installers an overview of their PV plant. The free software is the optimum addition to inverters with *Bluetooth*.Key plant data can be visualized on a PC. Sunny Explorer also provides support during inverter configuration. Since no complicated cabling is needed, plant maintenance is convenient and fast.


Quick overview of PV plant status


Visualization of essential plant data


Configuration of individual devices or an entire device class


Communication with the inverters via *Bluetooth*


Easy diagnostics due to event log display


Safe data transmission through new password system


Long-term archiving via data export in CSV format

Technical Data	Sunny Explorer
Languages	
Available languages	German, English, Italian, Spanish, French, Dutch, Portuguese, Greek, Korean, Czech
System Requirements	
Supported operating systems	Windows XP SP2, Windows Vista (32-bit and 64-bit), Windows 7 (32-bit and 64-bit)
Supported *Bluetooth* stacks	Microsoft, Toshiba, BlueSoleil, Broadcom
Hardware (Minimum Requirements)	
Processor	PIII 800 MHz (XP), P4 1 GHz (Vista, Windows 7)
Main memory	512 MB (XP), 1 GB (Vista, Windows 7)
Free hard drive space	265 MB (240 MB .NET / 25 MB application)
Resolution	1024 x 768 pixels
Communication	
Inverter communication	*Bluetooth*
Max. number of devices	1 master: 50 / 2 masters: 25
Plant Information	
Plant overview	Ideally suited for an overview of the entire PV plant by presentation of the most important data
Plant settings	Simple parameter setting for an entire device class
Current plant values	Summary of current device data. The display of minimum and maximum values, sums and averages (depicted for every device class) provides the operator with detailed information about the current status of their PV plant.
Device Information	
Device overview	Most important device information at a glance
Device settings	Individual parameter adjustment for each device
Current device values	Detailed information on the current values of the selected device
Events	Rapid event analysis with use of the device analysis functions and direct viewing of recorded events
Data Export	
Daily files	Overview of the PV plant performance data stored every 5 minutes, with daily storage of a file containing the values for all inverters
Monthly files	Long-term overview of the PV plant's daily yields, with monthly storage of a file containing the values for all inverters
Events	Rapid overview of all events written to a file for a selected time frame
Type designation	Sunny Explorer

User-friendly

- Wireless tabletop device with large, easy-to-read display
- USB interface for data transfer to PC

Innovative

- Automatic monitoring of up to 12 inverters via *Bluetooth*
- Power supply via integrated PV cell

Simple

- Intuitive operation via rotary push button
- Easy-to-understand display of all key plant data

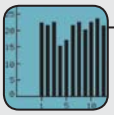
Reliable

- Audio alarm in the event of faults
- Data archiving for at least 90 days in daily files and up to 12 monthly files in CSV format

SUNNY BEAM with *Bluetooth® Wireless Technology*
The all-in-one service package for at home

Informative, compact and easy to operate, the Sunny Beam with *Bluetooth* doesn't just look good; it's an innovative monitoring solution. Key data is visible on its large graphic display, including a daily profile, current output, as well as daily and total energy yield. The performance of up to 12 inverters, the monthly overview, the energy yield in euros, and the CO_2 savings can all be accessed with one hand. The Sunny Beam can also be set up to emit an audio signal to notify operators of potential errors.

Wireless communication with inverters via *Bluetooth*



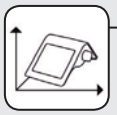
Large, easy-to-read LC display

Acoustic alarm system

USB interface for data transmission to a PC and charging the batteries

Simple and intuitive operation via the rotary push button

Power supply via PV cell and battery



Compact and lightweight
Dimensions:
127 x 75 x 195 mm
Weight: approx. 350 g

Technical Data	Sunny Beam with *Bluetooth*®	
Communication		
Inverter communication	*Bluetooth*	
PC communication	USB 2.0	
Max. Communication Range		
Bluetooth in free-field conditions	up to 100 m	
Max. Number of SMA Devices		
Sunny WebBox	max. 12	
Power supply		
Power supply	Integrated PV cell, USB cable	
Number of batteries	2	
Battery type	ENEKEEP (Mignon AA), NiMH (1.2 Vdc)	
Environmental Conditions in Operation		
Ambient temperature	0 °C ... 40 °C	
Degree of protection (according to EN IEC 60529)	IP20	
General Data		
Dimensions (W / H / D)	127 / 75 / 195 mm	
Weight (kg)	0.35 kg	
Mounting location	Indoors	
Installation options	Tabletop device	
Status display	LCD	
Software language	German, English, Italian, Spanish, French, Dutch, Portuguese, Greek, Czech	
Language versions (manual)	German, English, Italian, Spanish, French, Dutch, Portuguese, Greek, Czech	
Features		
Display	LCD	
Operation	Rotary push button	
Warranty	5 years	
Certificates and approvals	www.SMA-Solar.com	
Information Displayed		
General information	Date, time	
Plant data	Current output, daily yield, total yield, specific annual yield, CO_2 savings, remuneration	
USB cable	●	
USB plug-in power supply	O	
Replacement batteries	O	
SMA *Bluetooth* Repeater	For extending the maximum *Bluetooth* communication range	
● Standard features O Optional features – Not available		
Type designation	Sunny Beam *Bluetooth*	

Innovative

- Increased yields thanks to optimization of self-consumption
- Management of devices depending on weather forecasts and learned consumption behavior

Simple

- Convenient integration into the home grid
- Automatic activation of home appliances at suitable times
- Convenient plant monitoring via Sunny Portal
- Simple operation from PCs or mobile devices

Flexible

- Consideration of variable electricity tariffs
- Several standardized meter interfaces
- Individual presets for controllable devices

SUNNY HOME MANAGER

Intelligently optimizing your self-consumption

Sunny Home Manager is a solution for analyzing and optimizing self-consumption – in conjunction with convenient plant monitoring via Sunny Portal. Up to ten standard home appliances can be controlled intelligently through radio-controlled sockets. The device will learn the household's typical consumption behavior and connect this information to PV forecast data and variable electricity tariffs in order to facilitate financially and environmentally optimized consumption. The device can be configured and operated conveniently via Sunny Portal. Real-time self-consumption data can be tracked additionally. When operating the device through the web interface, the data can be accessed through a PC or a smartphone anywhere in the world.

Precise determination of generation, consumption and self-consumption

Energy data displayed live in Sunny Portal

Consideration of PV forecast data and variable electricity tariffs

Info page with recommendations for optimizing load management

Presentation and management of home consumption – even from remote locations

Analysis of power consumed by individual devices through radio-controlled sockets

Safe transmission of energy data

Technical Data	Sunny Home Manager	
Communication		
Inverter communication	*Bluetooth*	
Sunny Portal communication	Ethernet	
Terminals		
Inverter	See inverter communication	
Ethernet	10 / 100 Mbit, RJ45	
Energy meter	3*terminal for connecting S0 cable or D0 reader heads	
Max. Number of SMA Devices		
Bluetooth	16	
Max. communication range		
Bluetooth in free-field conditions	up to 100 m (can be extended with an SMA *Bluetooth* Repeater)	
Power Supply		
Power supply	External plug-in power supply	
Input voltage	100 V – 240 V AC; 50 / 60 Hz	
Power consumption	< 6 W (max. 14.3 W)	
Environmental Conditions in Operation		
Ambient temperature	-25 °C ... +60 °C	
Degree of protection (according to EN IEC 60529)	IP20	
Maximum permissible value for relative humidity (non-condensing)	5 % ... 95 %	
Memory		
Internal	Up to 5 days portal buffer	
Daily energy values	Up to 5 days	
General Data		
Dimensions (W / H / D)	170 / 124.5 / 41.5 mm	
Weight	0.22 kg	
Mounting location	Indoors	
Installation options	Top-hat rail mounting, wall mounting	
Status display	LEDs	
Language versions (manual)	German, English, Italian, Spanish, French, Dutch, Portuguese, Greek, Czech	
Features		
Operation	Via Sunny Portal	
Warranty	5 years	
Certificates and approvals	www.SMA-Solar.com	
Accessories		
SMA radio-controlled socket with *Bluetooth* Wireless Technology	For automated management of loads	
SMA *Bluetooth* Repeater	For extending the maximum *Bluetooth* communication range	
Type designation	Sunny Home Manager	

Reliable

- Remote monitoring, diagnosis and configuration of the PV plant
- Data logger for all key plant data
- Rapid detection of operation failures

Simple

- Automatic monitoring of up to 50 inverters via *Bluetooth* or RS485
- Quick set-up thanks to the Sunny WebBox Assistant and quick reference guide

User-friendly

- Includes free standard access to Sunny Portal for the entire service life of the plant
- Flexible display, evaluation, yield and event reports via Sunny Portal

SUNNY WEBBOX

Remote monitoring and maintenance of large PV plants

The Sunny WebBox is the ideal monitoring solution for medium-sized and large PV plants. It receives and stores current measured values and transmits data via *Bluetooth* or RS485, keeping you informed of plant performance 24 hours per day. In the event of a problem, you can react quickly and secure your yields. Parameters can be changed and a variety of measured values can be depicted, analyzed and downloaded via a web browser. All data from the connected devices is stored and, if desired, automatically transmitted to the Sunny Portal. The Sunny WebBox allows you to place your plant online at Sunny Portal for central access.

Communication with the inverters via RS485 or *Bluetooth*

Presentation of plant data with Sunny Matrix or Flashview

Free, automatic visualization of the measured values in Sunny Portal

SD card slot for optional memory expansion and data transmission to a PC

Integrated web server enables online remote data access from any web-enabled PC in the world

Integrated FTP server for data transmission and storage on a PC

Quick set-up thanks to Sunny WebBox Assistant and the quick reference guide

Flexible data transfer to a selectable FTP server parallel to Sunny Portal

Technical Data	Sunny WebBox	Sunny WebBox with *Bluetooth*
Communication		
Inverter communication	RS485, 10 / 100 Mbit Ethernet (only for Sunny Central)	*Bluetooth*
PC communication	10 / 100 Mbit Ethernet	10 / 100 Mbit Ethernet
Modem	Analog (optional), GSM (optional)	Analog (optional), GSM (optional)
Data interface	Modbus TCP, RPC	Modbus TCP, RPC
Terminals		
Ethernet	10 / 100 Mbit, RJ45	10 / 100 Mbit, RJ45
Inverter	1 x SMACOM	–
Max. Number of SMA Devices		
RS485, Ethernet	50 / 50	– / –
Bluetooth	–	50
Max. Communication Range		
RS485	1 200 m	–
Ethernet	100 m	–
Bluetooth in free-field conditions	–	Up to 100 m (can be extended with an SMA *Bluetooth* Repeater)
Power Supply		
Power supply	External plug-in power supply	External plug-in power supply
Input voltage	100 V – 240 V AC; 50 / 60 Hz	100 V – 240 V AC; 50 / 60 Hz
Power consumption	typ. 4 W / max. 12 W	typ. 4 W / max. 12 W
Environmental Conditions in Operation		
Ambient temperature	-20 °C ... +65 °C	-20 °C ... +65 °C
Maximum permissible value for relative humidity (non-condensing)	5 % ... 95 %	5 % ... 95 %
Memory		
Internal	8 MB in a ring buffer configuration	12.5 MB in a ring buffer configuration
External	SD card 1 GB / 2 GB (optional)	SD card 1 GB / 2 GB (optional)
General Data		
Dimensions (W / H / D)	255 / 130 / 57 mm	255 / 130 / 57 mm
Weight	0.75 kg	0.75 kg
Mounting location	indoors	indoors
Installation options	Top-hat rail mounting, wall mounting, tabletop device	
Status display	LEDs	
Language versions (software, manual)	German, English, Italian, Spanish, French, Dutch, Portuguese, Greek, Korean, Czech	
Features		
Operation	Integrated web server (Internet browser)	
Warranty	5 years	
Certificates and approvals	www.SMA-Solar.com	
Accessories		
SMA *Bluetooth* Repeater for extending the max. communication range	–	o
Sunny SensorBox	Connection via RS485 Power Injector	Connection via SMA Power Injector with *Bluetooth*
Sunny Matrix	o	o
SD card 1 GB / 2 GB (optional)	o	o
Outdoor GSM antenna, GSM data card	o / o	– / –
RS485 communication cable	o	–
Plug-in power supply with adapters	●	●
● Standard features o Optional features – Not available		
Type designation	Sunny WebBox	*Sunny WebBox with Bluetooth*

User-friendly

- Central management of all customer and plant data
- Easy to understand reporting
- World-wide access via the Internet – via PC and mobile phones

Personalization

- Personalized configuration of pages and diagrams
- Individual yield and event reports sent via e-mail

Informative

- Fully automatic yield comparison of plant devices
- Professional integration into personal website

SUNNY PORTAL

Professional management, monitoring and presentation of PV plants

Whether for small residential systems or a large PV farm, centralized management and system monitoring save time and money. Through the Sunny Portal, plant operators and installers have access to key data at any time. Pre-configured standard pages can be easily customized or supplemented. Whether as a data table or as a diagram: SMA solutions allow almost infinite options for analyzing measured data or visualizing yields. The yields of all inverters in a plant are compared automatically, allowing for the detection of even the smallest deviations. The powerful reporting functions also provide regular updates via e-mail to help ensure yields.


Management of several PV plants from one central location


Monitoring without having to be on-site

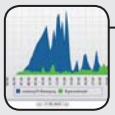

Quick overview of measured and yield values of the PV plant


Easy diagnostics through display of measured values and event log


High-performance reporting to help safeguardyields


Personalized access to screen options and functions


Flexible page design for individual presentation of the PV plant


Standard pages for the most common display options

Technical Data	Sunny Portal
Languages	
Available languages	German, English, Italian, Spanish, French, Dutch, Portuguese, Greek, Korean, Czech, Chinese
System Requirements	
Supported operating systems	All / optimized access for mobile devices
Plant Information	
Plant description	Overview of the key properties of the PV plant
Annual comparison	Quick yield overview of the entire operating period
Energy balance	Overview of purchased and fed in power and self-consumption, if applicable (power meter integration via Meter Connection Box or Sunny Home Manager required)
Plant log book	Access to messages regarding plant events
Device overview	Properties and parameters of the devices in the PV plant
Software	
Recommended browsers	Firefox, Internet Explorer, version 7 and later, Safari
Other	JavaScript and cookies enabled
Supported data logger	Sunny WebBox, Sunny Home Manager
Access	
Website	www.sunnyportal.com
Smartphone	www.sunnyportal.mobi, Sunny Portal App for iPhone and Android
Plant Management	
Sunny Portal Account	One password for all your plants in Sunny Portal
Page design	
Standard pages	Automatic standard pages for the most common plant monitoring and presentation needs
Personalized pages	A variety of templates for page construction
Page modules	Tables, diagrams, custom images, free text, plant overview (CO_2, remuneration, energy)
Visualization of Yield and Measured Values	
Diagram types	Selection of six diagram types for optimum presentation of yield & measured values, bar graphs, area charts, and line charts (with, without, or only tags), as well as XY diagrams
Tables	Individual configuration of charts for all yield and measured values
Time periods	From 5 minutes to 1 year, various time intervals selectable (depending on provided data)
Monitoring	
Inverter comparison	Fully automatic and ongoing inverter yield comparison and e-mail alarms
Communication monitoring	Ongoing monitoring and, when necessary, alarms for the connection between Sunny Portal and Sunny WebBox, the Sunny Home Manager and the Power Reducer Box
Status Reports	
Information reports	Daily or monthly reports on energy yield, maximum output, remuneration, CO_2 reduction via e-mail; a self-defined page can also be sent from Sunny Portal
Event reports	Hourly or daily reports on information, warnings, faults and errors, with personalized content and recipients
Report format	Text, PDF, HTML
Individual Access	
Publication of specific pages	Access via the public area on Sunny Portal by all Internet users, ideal for personalized presentations on personal Web sites
User roles	Assign roles of “guest”, “standard user”, “installer” and “plant administrator” to easily determine who has which viewing and configuration rights
Type designation	Sunny Portal

Reliable

- Rapid error detection via continuous target-actual comparison of plant performance

Informative

- Precise measurement of irradiation intensity, module temperature, ambient temperature and wind speed

Convenient

- Easy to install on the PV array
- Simple integration into existing PV plants via RS485 or *Bluetooth* (via SMA Power Injector with *Bluetooth*)
- Data analysis on any PC or in Sunny Portal

SUNNY SENSORBOX

The weather station for PV plants

The Sunny SensorBox is installed directly onto the modules and measures solar irradiation and, optionally, wind speed and ambient temperatures. Combined with Sunny WebBox and Sunny Portal, it provides continuous target-actual comparison of the plant performance. This makes it possible to detect shading, dirt, and a gradually declining array performance, thus maximizing yield security.

Communication with the Sunny WebBox via RS485 or wireless via *Bluetooth*

Continuous monitoring of PV array performance in Sunny Portal

Measurement of irradiation intensity and module temperature (plus optional measurement of ambient temperature and wind speed)

Easy installation, data transmission and energy supply via a common cable

Technical Data	Sunny SensorBox	
Communication		
Data logger	RS485 to Sunny WebBox, *Bluetooth* to Sunny WebBox with *Bluetooth*	
Terminals		
Sunny WebBox and Power Injector	Spring-type terminals	
Max. Communication Range		
RS485	1 200 m	
Bluetooth in free-field conditions	up to 100 m (can be extended with an SMA *Bluetooth* Repeater)	
Power Supply		
Power supply	RS485 Power Injector or SMA Power Injector with *Bluetooth*	
Input voltage	100 V – 240 V AC; 50 / 60 Hz	
Power consumption	< 1 W	
Environmental Conditions in Operation		
Ambient temperature	-25 °C ... +70 °C	
Degree of protection according to EN IEC 60529	IP65	
General Data		
Dimensions (W / H / D)	120 / 50 / 90 mm	
Weight	0.5 kg	
Mounting location	Outdoor	
Installation options	Mounting plate, roof bracket	
Language versions (manual)	German, English, Italian, Spanish, French, Dutch, Portuguese, Greek, Korean, Czech	
General Data		
Operation	Via the Sunny WebBox interface	
Warranty	5 years	
Certificates and approvals	www.SMA-Solar.com	
Accessories		
SMA *Bluetooth* Repeater	O	
Mounting plate	O	
Roof bracket	O	
Wind sensor	O	
Wall-mounting bracket for wind sensor	O	
PT100 ambient temperature sensor	O	
PT100 module temperature sensor	●	
RS485 Power Injector or SMA Power Injector with *Bluetooth*	●	
● Standard features O Optional features – Not available		
Type designation	Sunny SensorBox	

User-friendly

- Recording of grid consumption, feed-in and self-consumption
- Clear presentation for analysis in Sunny Portal

Simple

- Convenient installation with SMA communication products
- Simple integration into existing PV plant monitoring

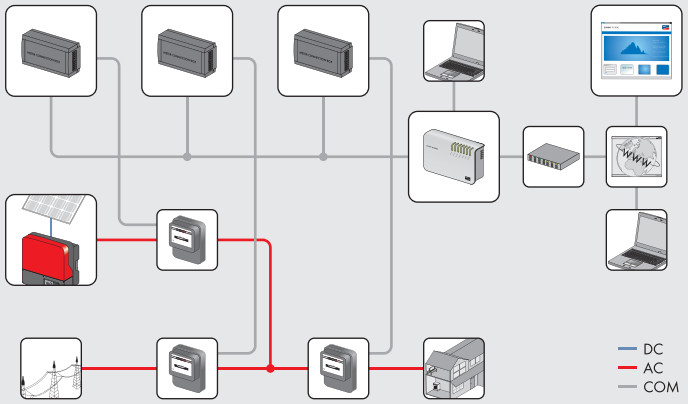
Flexible

- Compatible with standard energy meters with an S0 impulse output

METER CONNECTION BOX

Analysis of energy consumption made easy

The ideal tool for optimizing energy consumption: The Meter Connection Box makes it easy to integrate energy meters into your plant monitoring system. It is connected directly to the S0 output of an energy meter, where it reads the meter changes. In combination with the Sunny WebBox and Sunny Portal, this allows you to conveniently and transparently view and analyze your personal energy balance. Depending on the constellation of connected energy meters, the device allows you to visually compare your purchased and generated energy as well as your PV self-consumption.



Please note that the meter seal has to be removed in order to connect the Meter Connection Box. This process must be approved by your electric utility company.

Technical Data	Meter Connection Box	
Communication		
Data logger	RS485 to Sunny WebBox	
Energy meter	S0 impulses	
Terminals		
Sunny WebBox	4-pole spring-type terminal	
Energy meter	2-pole spring-type terminal	
Max. Communication Range		
S0 pulses	3 m	
RS485	1 200 m	
Power Supply		
Power supply	External plug-in power supply	
Input voltage	12 V ... 24 V DC ± 10 %	
Power consumption	1 W	
Environmental Conditions in Operation		
Ambient temperature	-20 °C ... +65 °C	
Relative humidity	5 % ... 95 %	
Degree of protection (according to IEC 60529)	IP20	
Altitude above mean sea level (MSL)	0 m ... 2 000 m	
General Data		
Dimensions (W / H / D)	102 / 30 / 54 mm	
Weight	80 g	
Mounting location	Indoors	
Installation options	Top-hat rail / wall mounting bracket	
Status display	LEDs	
Language versions (manual)	German, English	
Operation	Via the Sunny WebBox interface	
Features		
Warranty	5 years	
Requirements for the Energy Meter		
S0 impulse output	DIN EN 62053-31	
Type designation	Meter Connection Box	

Durable

- Large, weather-proof display for effective plant presentation

Flexible

- Multiple sizes for any application
- Customizable front panel label
- Flexible display
- Customizable text and content

User-friendly

- Easy set-up and operation via a web browser
- Automatic brightness control

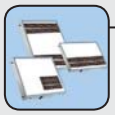
SUNNY MATRIX

Attractive large-scale display

All representative plant data at a glance: The Sunny Matrix is a weatherproof large-scale display that visualizes yield, performance and CO_2 reduction of PV plants in large, luminous figures. It derives the display data from up to 50 WebBoxes via an Ethernet interface, either through the local network or the Internet. The Sunny Matrix is available in various formats and has no restriction on the text layout. Variable numbers of lines and characters make the Sunny Matrix an eye-catching, versatile display for viewing solar power production quickly and publicly.

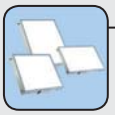
Presentation of plant performance with high public appeal for indoor or outdoor application

Automatic data synchronization with up to 50 Sunny WebBoxes or Sunny WebBoxes with *Bluetooth*



Practically unlimited choice of position and length of text modules

Integrated web server for set-up, operation and remote maintenance from any web-enabled PC in the world



Three different enclosure sizes

Display of wind, temperature and irradiation data in combination with the Sunny SensorBox

Individual design of front panel label according to your specifications

Changing displays, freely editable and ticker text, automatic night switching

Technical Data	Sunny Matrix
Communication	
Data logger communication	Ethernet
Terminals	
Ethernet	10 / 100 Mbit
Max. Number of Devices	
Ethernet	50
Max. Communication Range	
Ethernet	–
Power supply	
Input voltage	100 V – 240 V AC; 50 / 60 Hz
Power consumption	normally 20 W + 5 W per 4-character display module
Max. current input	1.3 A
Environmental Conditions in Operation	
Ambient temperature	-25 °C ... +60 °C
Degree of protection	IP54
General Data	
Dimensions (W / H / D)	800 x 400 x 120 mm, 800 x 800 x 120 mm, 800 x 1000 x 120 mm
Weight	15 kg, 20 kg, 25 kg
Mounting location	Outdoor
Installation options	Wall mounting
Character height	51 mm
Length of lines	4, 8, 12 or 16 characters
Number of lines	max. 2 lines on 400 mm model, max. 4 lines on 800 / 1000 mm model
Line layout	Positioning to customer specification
Front panel design	According to customer specification
Software language	German, English, Italian, Spanish, French, Dutch, Portuguese
Language versions (manual)	German, English, Italian, Spanish, French, Dutch, Portuguese
Features	
Operation	Integrated web server (Internet browser)
Warranty	5 years
Certificates and approvals	www.SMA-Solar.com
Information Displayed	
General information	Date, time, personal text, personal web text
Plant data	Current output, daily yield, total yield, CO_2 savings
SensorBox data	Ambient temperature, module temperature, internal solar irradiation, wind speed
Sunny Island data	Battery state of charge
Accessories	
Optional software	Sunny Matrix Admin Tool
Available languages	German, English, Italian, Spanish, French, Dutch, Portuguese
Type designation	Sunny Matrix

Informative

- Attractive presentation on standard displays
- Continuous display of the most important plant data
- Presentation of output, yield, environmental and local data

Easy to Use

- Customizable images and logos
- Easy set-up and operation
- Free download

FLASHVIEW

Professional plant presentation at no cost

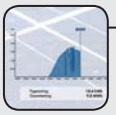
Yields, current output and ambient data: Flashview presents all of this for PV plants on any connected monitor. Various display views either switch automatically or can be manually selected. Flashview queries the plant data from Sunny WebBox via an existing network connection – optionally via the Internet from any location in the world. It is also customizable: integrate plant images, as well as link to external RSS feeds.

Easy to operate

Automatic data synchronization with Sunny WebBox or Sunny WebBox with *Bluetooth*

Flexible set-up options

Free download



Display of key **performance parameters**

News ticker with **RSS feed**

Individual design with personal wallpaper

Attractive visual **presentation**

Technical Data	Flashview
Languages	
Available languages	German, English, Italian, Spanish, French, Dutch, Portuguese, Greek, Korean, Czech, Chinese
System Requirements	
Supported operating systems	Windows XP SP2, Windows Vista (32-bit und 64-bit), Apple Macintosh OS X
Required SMA devices	Sunny WebBox or Sunny WebBox with *Bluetooth*
Communication	
Type	IP address, URL (e.g., DynDNS)
Data logger communication	Ethernet
Software	
Other	WinZip
Hardware (Minimum Requirements)	
Processor	1 GHz
Main memory	256 MB
Free hard drive space	24 MB
Resolution	1280 x 1024 pixels
Color depth	256 colors
Max. Number of Devices	
Ethernet	10
Features	
Operation	PC keyboard, automatic switching of slide show after 5, 10, 20 or 30 seconds
Individual Set-up Options	
Values	CO_2 factor, vehicle CO_2 emissions, number format, length unit, weight unit, temperature unit, remuneration
Other	Name of plant, personal wallpaper, other images
Information Displayed	
General information	Time
Plant data	Current output, daily yield, total yield, CO_2 savings
Sunny SensorBox data	Ambient temperature, module temperature, internal solar irradiation, wind speed
Other information	CO_2 offset in kilometers driven, remuneration
Additional pages	Partner page for personal advertising campaigns, RSS feed news ticker
Type designation	Flashview

Reliable

- Complies with the German EEG* amendment on feed-in management
- Logging of all events and status changes
- Meets the requirements of the German Medium-Voltage Directive (BDEW)** for grid safety management

Flexible

- Active power limitation and reactive power setpoint
- Reliably controls up to 2500 inverters

Simple

- Straightforward integration into existing plants
- Easy installation
- Free support from the SMA Serviceline
- Integrated web server

POWER REDUCER BOX

Feed-in management for large-scale PV plants

With the Power Reducer Box, SMA delivers a solution for large PV plants that must take part in feed-in management. It allows the network operator to remotely control the plant performance. It achieves this by translating the transmitted setpoint values into control commands for the Sunny WebBox, which forwards them to the inverters. During this process, each change of status is logged twice, once in the Power Reducer Box and once in the Sunny WebBox. In addition, the network operator's requirements are visualized in Sunny Portal, informing the plant operator immediately.

* German Renewable Energy Sources Act
** Guideline established by the German Federal Association for Energy and Water

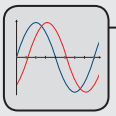
Suitable for large-scale PV plants with up to 2500 inverters

Compliance with legislation **(§6 EEG 2009)**

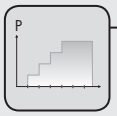
Rapid and easy commissioning

Double logging of all switching operations

Plant status can be accessed **online at any time via Sunny Portal**



Default setting of **reactive power or cos φ**



Gentle gradual reconnection of plant in compliance with the Medium-Voltage Directive**

Integrated web server for **remote online access** from any PC

Technical Data	Power Reducer Box
Communication	
PC communication	Ethernet
Communication with Sunny WebBox	Ethernet
Terminals	
Ethernet	10 / 100 Mbit, RJ45
Radio ripple control receiver (AUX-COM)	4 digital inputs
Max. Number of SMA Devices	
Sunny WebBox (not Sunny WebBox with *Bluetooth*)	50
Max. communication range	
Ethernet	100 m
Power Supply	
Power supply	External plug-in power supply
Input voltage	100 V – 240 V AC; 50 / 60 Hz
Power consumption	typ. 4 W / max. 12 W
Environmental Conditions in Operation	
Ambient temperature	-20 °C ... +60 °C
Relative humidity	5 % ... 95 %
Memory	
Internal	16 MB in a ring buffer configuration
External	SD card 1 GB / 2 GB (optional)
General Data	
Dimensions (W / H / D)	255 / 130 / 57 mm
Weight	0.75 kg
Mounting location	Indoors
Installation options	Top-hat rail mounting, wall mounting
Status display	LEDs
Software language	German, English, Spanish, French, Czech
Language versions (manual)	German, English, Spanish, French, Czech
Features	
Operation	Integrated web server (Internet browser)
Warranty	5 years
Certificates and approvals	www.SMA-Solar.com
Accessories	
SD card	o
Plug-in power supply with adapters	●
● Standard features o Optional features – Not available	
Type designation	Power Reducer Box

Professional

- Control and monitoring of large-scale PV plants
- Simple integration into professional control room technology such as HMI, SCADA or BM systems

Innovative

- One data interface for up to 2500 SMA devices
- Data interface in accordance with the OPC-DA/OPC-XML-DA communication standard

Simple

- One data interface for 50 Sunny WebBox devices, even at different locations
- Compatible with WinCC, InTouch, WEBfactory, etc.

Flexible

- Simple installation and innovative configuration
- Quick and simple integration into existing control systems, e.g., for wind turbine systems or biogas plants

SMA OPC SERVER

The standardized data interface for large-scale PV plants

Large-scale PV plants require customized monitoring solutions and need to link systems and components supplied by different manufacturers into one joint control system. OPC, the international communication standard in the field of automation technology, enables simple and reliable data exchange between products and applications supplied by different vendors.

Visualize
PV power stations professionally

International
OPC standard

Simple installation
and intuitive configuration

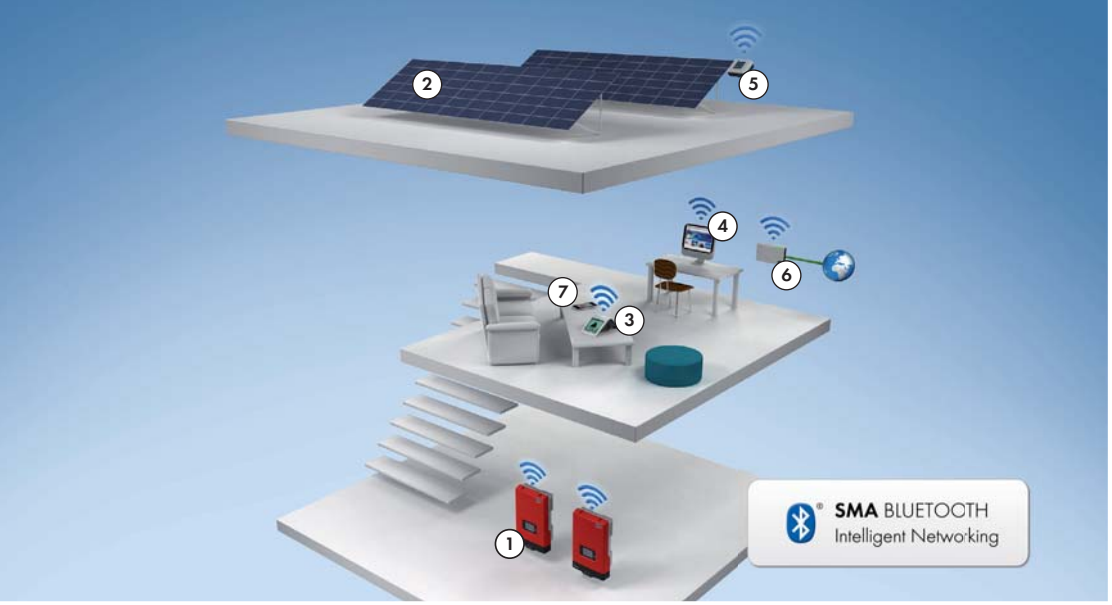
Standardized
interface to the PV plant

Simple integration
of the PV plant into existing visualization systems

Real-time plant data
for monitoring and controlling the PV plant

Monitoring of multiple plants from a central point

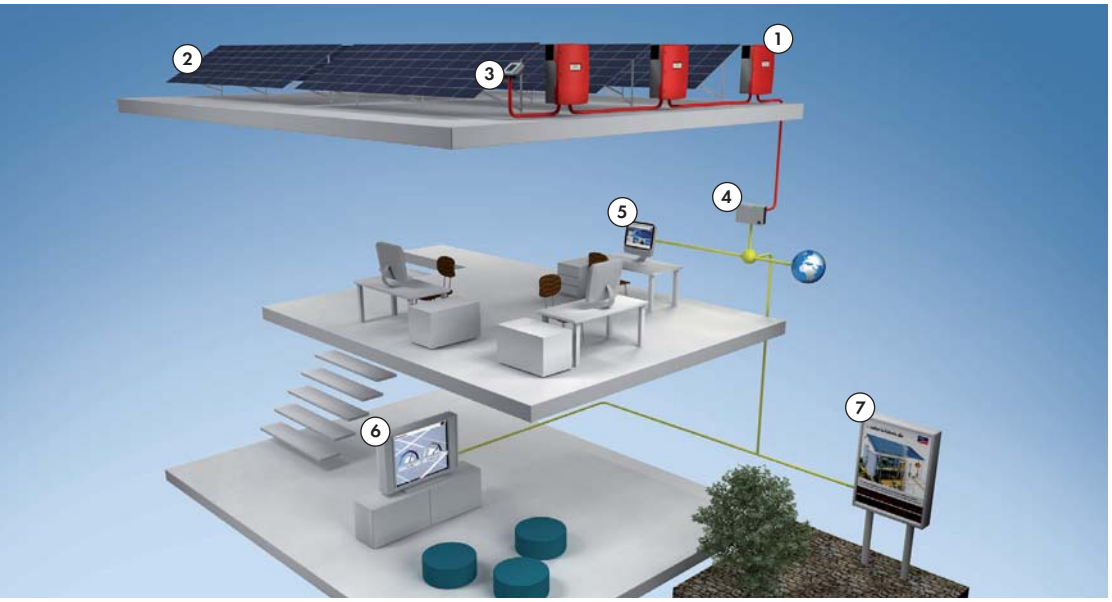
Technical Data	SMA OPC Server	
Languages		
Available languages	German, English, French	
System Requirements		
Required SMA devices	Sunny WebBox	
Supported operating systems	Windows XP Pro (SP2), Windows Server 2003 (recommended)	
Hardware (Minimum requirements)		
Processor	2 GHz	
Main memory	2 GB	
Free hard drive space	10 MB	
Communication		
Sunny WebBox communication	Ethernet	
OPC communication	OPC-DA, OPC-XML-DA	
Max. Number of Devices		
Ethernet	50 Sunny WebBox devices	
Software		
Requirements	Microsoft .NET Framework 2.0, OPC core components	
Supports the Following Systems		
OPC client	Wonderware InTouch, Siemens WinCC, National Instruments LabVIEW, WEBfactory	
Scope of delivery		
Contents	CD-ROM, documentation	
Functionality		
Data update	Up to 10 seconds	
Unidirectional data exchange	Inverter measured values	
Bidirectional data exchange	Inverter parameters	
Other		
Legal notice	Operation with valid license contract only	
Type designation	SMA OPC server	



Typical plant design – wireless transmission

Electricity generation
① SUNNY BOY
② PV ARRAY

Plant monitoring
③ SUNNY BEAM with BT
④ SUNNY EXPLORER
SUNNY PORTAL
⑤ SUNNY SENSORBOX with BT*
⑥ SUNNY WEBBOX with BT
⑦ Mobile access



Typical plant design – cable transmission

Electricity generation
① SUNNY MINI CENTRAL
② PV ARRAY

Plant monitoring
③ SUNNY SENSORBOX
④ SUNNY WEBBOX
⑤ SUNNY PORTAL
⑥ FLASHVIEW
⑦ SUNNY MATRIX

RS485
Local network / Internet

Bluetooth

- Automatic networking of up to 50 devices
- Range of up to 100 m in free-field conditions

RS485

- Reliable data transmission, even in interference-prone areas
- Various accessories available (radio links, fiber optic converters)

Wireless or Cable

Secure connection with and without cable

To monitor PV plants, data has to be transmitted. For the communication between the PV inverter and monitoring devices, SMA provides two basic choices: wireless and wired variants. Both have advantages and are used with different sized plants. Let SMA help you decide which method of communication best suits your PV plant.

* In connection with SMA Power Injector with *Bluetooth*

	***Bluetooth* (radio connection)**	**RS485 wiring**
Typical application	Especially for small and medium-sized PV plants	For medium-sized and large PV plants
Advantages	Reduced costs and effort	High speed and reliability
Number of nodes (PV plant monitoring and inverters)	Up to 50 per *Bluetooth* network	Up to 50 per RS485 bus
Range	Up to 100 m in free-field conditions between individual devices	1 200 m per RS485 bus
Number of data retrieval devices (for example, Sunny Beam or Sunny WebBox)	Up to four per network (depending on number of nodes)	One per RS485 bus
Feed-in and grid management option	None	SMA Power Reducer Box*

Wireless success – intelligently networked with SMA *Bluetooth*

With SMA *Bluetooth,* wireless networks can be created simply and quickly – without the additional effort of having to lay cables in walls, re-plastering or painting, making it perfectly suited to your residential rooftop plant.

Bluetooth, the international wireless standard, makes monitoring flexible and extendable. Solar power professionals and plant operators save time and money. Thanks to *Bluetooth,* all new inverters are recognized quickly and automatically integrated into the plant. With the SMA intelligent networking concept, up to 50 devices can be integrated in a network. *Bluetooth* Class 1 is the standard used and it enables communication over longer distances. If that's not enough because walls or ceilings are in the way, you can also use the SMA *Bluetooth* Repeater to strengthen the signal and extend the range.

Bluetooth is also reliable. Thanks to constant frequency changes and the transmission of data packages in small units, the radio connection is extremely stable. By the way: the password protection built in to all devices secures your data against unauthorized access.

Robust and secure – powerful across long distances with proven RS485 wiring

The RS485 fieldbus is a veteran in the area of cable-connected communication technology. It has been used by SMA for many years and has proven itself in a nearly endless number of plants. All devices are connected to each other in a chain (a so-called data bus). At the end of this chain, the Sunny WebBox collects all the data and reliably informs you of the status of the PV plant. The advantage of RS485 wiring is that functional lengths of up to 1 200 m and reliable data transmission can be achieved even in interference-prone areas. It is also appropriate for larger PV plants, where operators require maximum security and reliability.

* Information on regulations for feed-in and grid management in your country can be obtained from your network operator.

SERVICE

Customer-oriented

- Professional commissioning, maintenance and repair
- Telephone support at the SMA Serviceline

Optimum availability

- Fast and simple device replacement
- Complete warranty for one year on every replacement device

Assured returns

- Five-year warranty on Sunny Boy, Sunny Mini Central and Sunny Tripower inverters

Flexible

- Warranty extensions to 10, 15, 20 or 25 years

SMA Service for decentralized inverter solutions

Comprehensive service for all customer requirements

All those who opt for a PV plant are banking on long-term earnings. In order to achieve these benefits, the PV inverter must not only be durable and highly efficient, the service partner must also provide reliable, flexible and competent support. SMA provides the highest level technology and expert service from a single source. Whether the SMA Serviceline, on-site service, or our replacement service: our flexible services are individually tailored to the needs of solar power professionals – worldwide.

Expert advice over the telephone via the SMA Serviceline

Our Serviceline supports solar power professionals during the installation and commissioning of PV plants, advises on technical issues, and provides tips on PV plant monitoring. Specially trained expert teams are available at various telephone numbers for all inquiries regarding inverters and communication products.

SMA service on-site

Solar power professionals can rely on our support: we have a well-developed service network with numerous access points, currently in 14 countries. In the event of a service requirement, SMA can be on-site quickly. Thus, we are ready to support our customers around the world, from on-site diagnosis to device replacement.

Device replacement for highest security of return

Should a failure occur, our device replacement program minimizes downtimes. After a call is received, the replacement inverter is generally shipped on the same day. To replace the defective inverter, the customer will receive a comparable device with state-of-the-art technology, including all updates and alterations. If a device is replaced within the warranty period, the remaining warranty period is transferred to the replacement device. In any event, we provide one year full warranty on all replacement parts both within and outside the warranty period. And that's not all: our service technicians can take care of the installation of the replacement device upon request.

More security with long-term warranties

SMA products meet the highest quality standards and come with a standard five-year warranty. We also offer an extended warranty for an additional five, ten, fifteen or twenty years, with which operators can assure themselves of the right to free repair or a replacement device.

Interested?

Both operators and solar power professionals are equally well served with the SMA service concept. Additional information on our services is available on the corresponding SMA website, where you may also download or order a free copy of our service data sheet.

SMA SERVICELINES

SMA Solar Technology AG,
Germany
> INVERTER +49 561 9522-1499
> COMMUNICATION +49 561 9522-2499
> SMS CALL-BACK +49 176 888 222 44

SMA America, LLC
Tel. +1 916 625 0870
Tel. 877 MY SMATech (877-697-6283)

SMA Technology Australia Pty. Ltd.
Tel. +61 2 9669 2889
Tel. 1800 SMA AUS (1800 762 287)

SMA Beijing Commercial Company Ltd.
Tel. +86 10 5150 1685-602

SMA Benelux BVBA/SPRL
Tel: +32 15 286730

SMA Czech Republic s. r. o.
Tel. +420 235 010 417

SMA France S.A.S.
Sunny Boy / Sunny Mini Central
Tel. +33 (0)4 72 09 04 40
Surveillance et Communication
Tel. +33 (0)4 72 09 04 41

SMA Hellas AE
Tel. +30 210 9856 666

SMA Ibérica Tecnología Solar, S.L.
Tel. +34 900 14 22 22

SMA Italia S.r.l.
Tel. +39 02 8934 7299

SMA Technology Korea Co., Ltd.
Tel. +82 2 508 8599

SMA Portugal, Niestetal Services
Tel. +351 21 2387860

SMA Middle East LLC
Tel. +971 2 698 5080
Masdar City, Abu Dhabi (AE)

SMA SOLAR TECHNOLOGY AG WWW.SMA-SOLAR.COM

SUNNY PRO Club

Making Strong Partners Stronger


SMA
NY PRO Club
ng Strong Partners Stronger
Sunlab
10587 Berlin
Peter Mertens
Membership Number SPC1236547

Profitable

- Active sales support with a wide range of professional and affordable marketing measures
- Joint web profile for solar professional partners of SMA with the market leader
- Acquire new customers by having your solar professional company listed on the end customer website "Solar is Future" and on the SMA website

Time-saving

- Direct access to the latest product information
- Valuable time and cost savings for solar professionals

The Sunny PRO Club

Professional marketing for solar power professionals

PV plants need not only to be designed and installed, but also to be sold. The SMA partner program for solar power professionals offers its members active marketing support to tap into their regional solar markets. This not only saves time, but also helps attract new customers.

Professional marketing support

All promotional measures are specially tailored to meet the individual requirements of the solar trade. Whether with sample devices, personalized brochures or advertizing templates, members receive practical support for all their marketing needs. A popular benefit is the opportunity to have your company named in the "Solar is Future" end-user portal and on your local SMA website. The solar professional search function helps club members to increase public awareness of their company in the region and to acquire new customers.

The knowledge advantage

The best way of gaining knowledge has always been through personal contact and sharing expertise. If you have any questions or comments, our club hotline staff will be happy to help. Sunny PRO Club members also benefit from exclusive technology and sales seminars which are organized by the SMA Solar Academy.

A partnership that pays off

The principle of give and take: SMA's solar power professional partners not only receive professional marketing solutions on attractive terms. As the world's largest manufacturer of solar inverters, SMA is also a strong partner for all Sunny PRO Club members. Just as solar power professionals can use the marketing power of the SMA brand to improve their image, they in turn also help to further increase awareness of the brand.

Interested?

Becoming a member of the Sunny PRO Club is easy! For a small annual charge, each member receives a start package, a selection of attractive marketing measures, invitations to selected seminars and events, and is also registered in the online solar power professional search function. Please visit the Sunny PRO Club website on the Internet. There, you can find out all about registration and the available services.

Sunny PRO Club Germany
Tel. +49 561 9522-4774
SunnyPROClub@SMA.de
www.SunnyPROClub.de

Sunny PRO Club America
Tel. +1 916 625 0870
SunnyPROClub@SMA-America.com
www.SunnyPROClub.com

Sunny PRO Club Italy
Tel. +39 02 8934 7264
SunnyPROClub@SMA-Italia.com
www.SunnyPROClub.it

Sunny PRO Club France
Tel. +33 (0) 4 72 22 92 90
SunnyPROClub@SMA-France.com
www.SunnyPROClub.fr

SMA SOLAR | ACADEMY

Be a solar expert


SMA SOLAR | ACADEMY

Comprehensive

- Expertise on SMA inverter technology and photovoltaics
- Several hundred seminars per year worldwide for newcomers and experienced users

Targeted

- Training courses tailored to the specific needs of contractors, sales staff, plant designers and solar installers
- Seminars on specific products or topics

Hands-on

- Specially trained team of instructors
- Networking between SMA developers and seminar participants
- Hands-on exercises on real products

Cooperative

- Comprehensive seminar documentation
- Networking over lunch

SMA SOLAR ACADEMY

Sharing knowledge. Giving you the competitive edge.

Greater success through added know-how: the SMA Solar Academy provides expertise and targeted training in the area of photovoltaics. It helps you keep on top of the latest trends, new developments and topics in the field. Adding competence with a hands-on approach.

Targeted seminar offers

All product seminars are structured according to subject and take into account the participants' prior level of knowledge. We offer modular courses for novices (basic seminars), advanced users (intensive seminars) and experts (expert seminars). Our compact seminars on specific topics are designed for special target groups such as sales staff.

Modular technical training courses*

(All seminars are one-day events and can be booked separately)

» **Basic & Intensive Seminar "Inverters"**
The seminars provide up-to-date information on photovoltaics, inverter technology, plant design, installation and protection, and lightning protection.

» **Basic Seminar "Plant Communication"**
How does communication via *Bluetooth* work? Experts on plant communication explain the advantages of the new SMA radio standard and direct communication between PC and inverters.

» **Basic Seminar "Plant Monitoring"**
The seminar introduces the SMA products Sunny Beam and Sunny WebBox and demonstrates how to use them. How do you establish a communication connection? What do you need to keep in mind when configuring the WebBox? How do you read out data with a PC? These questions and more are answered with hands-on exercises on training devices, performed in small groups.

» **Basic & Intensive Seminars "Large-scale PV Plants with SUNNY CENTRAL"**
High-tech for PV power stations: the seminars focus on how central inverters such as the Sunny Central work. Further topics include: installation of large-scale PV plants, the requirements of the "Medium-Voltage Directive", comparison of a central and a decentralized plant design, and plant communication.

» **Intensive Seminar "Plant Monitoring"**
In-depth instruction for all participants who have already completed the "Plant Monitoring" basic seminar. Seminar participants will learn not only how to expand the configuration of the Sunny WebBox and Sunny Portal and the basics of network technology, but will also be taught how to use SMA communication devices to generate complex web pages in Sunny Portal for comprehensive PV plant monitoring.

» **Basic, Intensive & Expert Seminar "Off-Grid Supply with SUNNY ISLAND"**
In-depth training on the various off-grid "Sunny Island" inverters, including installation, flexibility of use, single-phase/three-phase stand-alone grid, battery, load and system management, and plant configuration.

» **Basic Seminar "Small Energy Systems with Windy Boy"**
From functionality and technology through to the variety of SMA inverter products – this seminar explains all you need to know about small wind turbine systems.

Compact seminars on specific subject areas or products*

» **Planning and Designing (one-day seminar)**
Plant design made easy: the seminar explains how planners can use Sunny Design to determine the optimum plant configuration in an instant.

» **"User Forum" (one-day seminar)**
Networking between "pros" and "PV newcomers": active and aspiring plant operators exchange key information on solar power and SMA products.

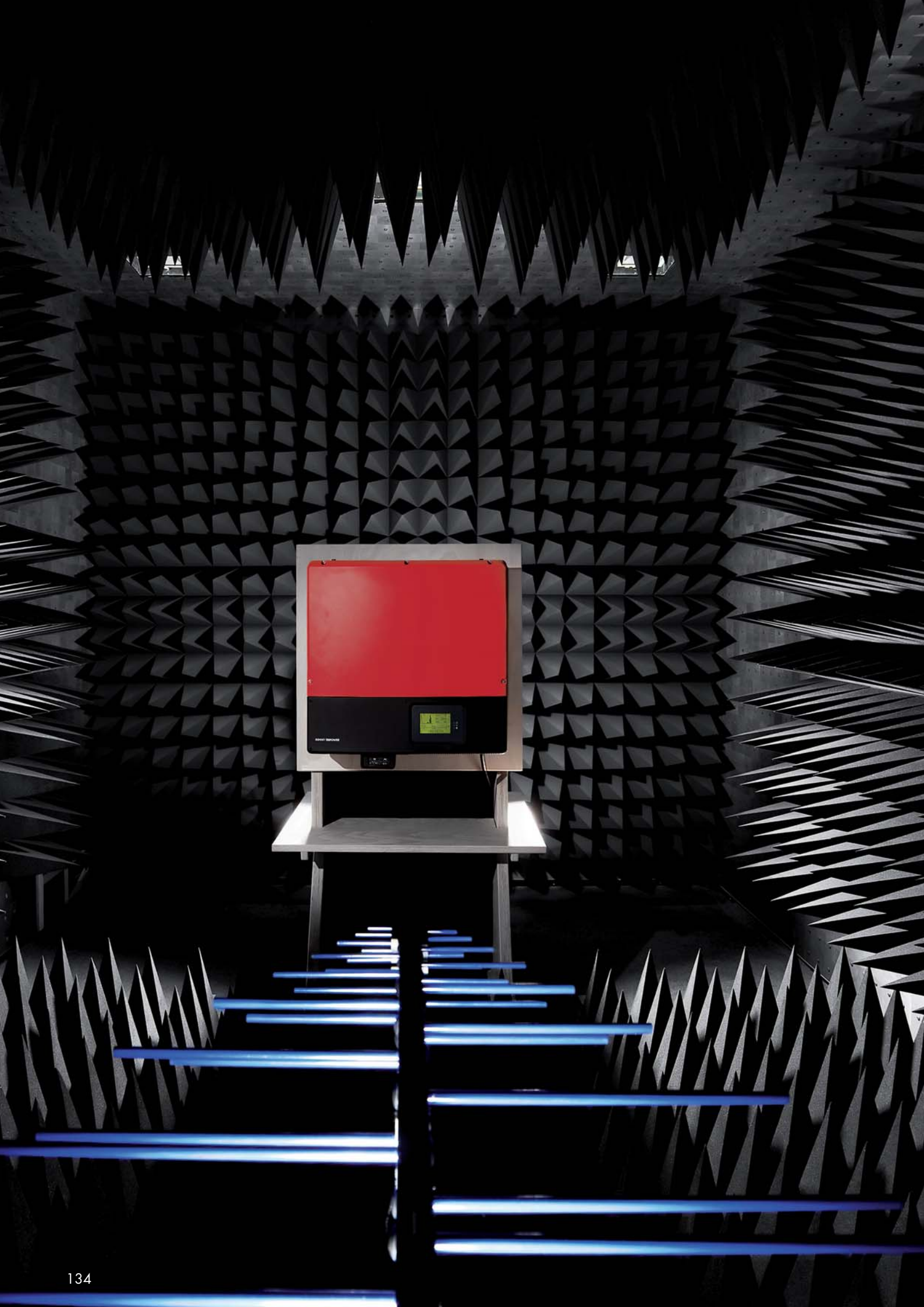
» **"Backup Electricity Supply with Sunny Backup" (one-day seminar)**
Solar power during a blackout: the seminar presents the SMA backup systems. Further topics include the integration of various additional energy sources (PV, generator) and plant configuration.

» **"Marketing PV Plants" (two-day seminar)**
How should customers decide whether to install a Sunny Boy or a Sunny Mini Central? The essential (selling) points and information on all products or groups of products in one compact seminar.

» **Interested in the seminars offered by SMA Solar Academy?**
Simply choose your seminar on the SMA website and register by telephone or e-mail. We look forward to welcoming you as a participant!

Seminar titles and contents may vary from country to country.

* You will find specific information on the seminars offered by the various SMA subsidiaries, the exact training dates, as well as contact information on the respective SMA web sites.



THE FUTURE OF SOLAR TECHNOLOGY

New technologies that make the worldwide deployment of photovoltaics increasingly economical. A tremendous rate of innovation. And a unique and diverse product range. SMA Solar Technology AG has been among the most successful companies in the field of solar technology for 30 years. Our team of over 600 engineers develops state-of-the-art PV inverters and monitoring systems for PV plants.

The right inverter for every application

Since every PV plant has to be individually designed, SMA already has a wide product range. We are the only manufacturer worldwide to offer the appropriate inverter for every requirement – whether for grid connection, off-grid supply or back-up operation. From the kilowatt to the megawatt range. For all module types – whether thin-film, crystalline or concentrator technology.

SMA inverters as intelligent system managers

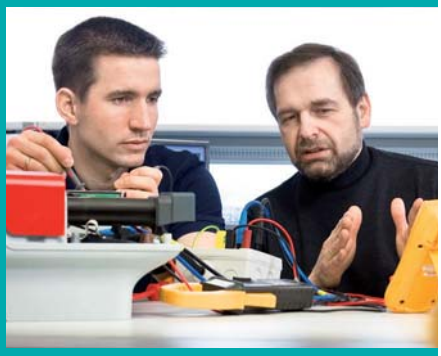
The inverter is the most important component in any PV plant because it converts the direct current generated in photovoltaic cells into alternating current suitable for the grid. In addition, it functions as an intelligent system manager that is responsible for yield monitoring and grid management. SMA's PV inverters are especially efficient: the Sunny Tripower already features an efficiency of over 98 percent and thus ensures increased power generation.

Worldwide customer proximity and international experience

SMA is the market and technology leader in the PV inverter sector and is represented internationally by dedicated sales and service subsidiaries. Our strategy: proximity to the customer in all major solar markets. SMA customers do not just benefit from our internationally oriented processes, but also from our many years of experience in dealing with country-specific certification and grid compliance regulations.

SMA in figures

SMA Solar Technology AG is headquartered in Niestetal near Kassel in Germany and is currently represented by 17 international subsidiaries on four continents. The group consists of more than 5 000 employees (including temporary staff), and has been distinguished several times in previous years with awards for its outstanding performance as an employer. The company has been listed on the Prime Standard of the Frankfurt Stock Exchange (S92) since June 27, 2008; since September 22, 2008 the company's shares have been listed on the TecDAX. In 2010, SMA generated sales of EUR 1920.1 million.



Glossary

Explanations on Solar Technology

Dump load
Here: load which can be spontaneously activated in the event of an energy surplus; can also be used to balance out strong load fluctuations. Loads with storage capability (pumps, cooling units, boilers) are the most energy-sensible. However, for the actual technical function, appropriately cooled load resistors are sufficient.

Automatic disconnection device
Part of an "automatic disconnection device between a generator and the public low-voltage grid". This is a mandatory safety device which prevents power from a solar energy system from being fed into an external power grid when the power distribution grid is not functioning. This function is taken over by the Sunny Boy and Sunny Mini Central using SMA Grid Guard, thus making a regular test unnecessary due to their single fault characteristics.

ESS (Electronic Solar Switch)
The ESS is a DC switch-disconnector integrated into the inverter to safely disconnect a PV array from the inverter. The ESS has a pull handle for ease of operation. After pulling down the handle, the DC plugs can be accessed and disconnected with no risk of an electrical arc. Disconnecting the plug means that the disconnection from the live PV array is immediately apparent.

H5 Topology
The bridge of inverters with H5 topology has a fifth semiconductor switch. This ensures very high efficiency in the conversion of current, at a factor of 98 %.

HF
HF stands for High Frequency and also designates the new Sunny Boy series with high frequency transformers. The compact, galvanically isolating inverters provide very high efficiency for devices with transformers.

Low-Voltage Ride Through (LVRT)
Grid management function from the field of dynamic grid support: when there is a short disruption in line voltage, the inverter does not switch off, as has been required until now, but supports the grid with reactive power. After the disturbance, it immediately resumes feeding. In Germany, for example, LVRT is required as of January 2011 for plants at the medium-voltage level.

Maximum Power Point MPP
The operating point (current/voltage) where the PV array provides the highest possible power under the prevailing conditions. The actual MPP changes constantly depending, for example, on the level of irradiation and the temperature.

MPP Tracker
A device that adjusts the voltage and current of a PV array so that it operates at its "Maximum Power Point".

Multi-String Inverter
An inverter which, to a great extent, combines the advantages of several string inverters (separate MPP tracking of individual strings) and a central inverter (low specific costs).

OptiCool
A patented enclosure concept by SMA, in which the interior of the enclosure is divided into two compartments. The chamber with the sensitive electronics is dustproof and waterproof. The second chamber contains transformers and chokes as well as other unsusceptible components, and can be actively cooled when necessary.

Optiflex
The innovative and highly flexible design of the Sunny Tripower: the Sunny Tripower features an asymmetric multi-string input with two MPP trackers for custom-fit installation with virtually unlimited numbers of modules and maximum system efficiency.

Optiprotect
The Sunny Tripower features a completely new and comprehensive safety concept: its electronic string fuses, automatic string failure detection and overvoltage protection that can be integrated into the enclosure monitor and optimally secure the PV plant and thus also your energy output.

OptiTrac Global Peak
Another advance in our time-tested OptiTrac MPP tracker for operation in partially shaded PV plants. This specialized operation management system ensures that the modules are constantly operated at the point of maximum power even when there are multiple maximum power points, without causing measurable yield loss (loss < 0.2 percent).

Power Balancer
The Power Balancer is a Sunny Mini Central inverter standard function that prevents the formation of an unbalanced load during three-phase grid feed-in. This is accomplished by connecting three inverters to a three-phase feeding unit via a control line.

Quick Module
A removable communication and configuration module for the new Sunny Boy HF series. There is a rotary switch inside to set the country and the *Bluetooth* NetID as well as the SD card slot. The optionally available Quick Module RS485 also features an RS485 interface and a multifunction relay.

SMA Grid Guard
The SMA Grid Guard concept monitors, for instance, the voltage and frequency of the connected power distribution grid according to predefined parameters. This serves to prevent the formation of islanding in the event of grid disconnection (see also "Automatic disconnection device"). Grid Guard enables simple and reliable operation of SMA inverters on nearly all electrical power grids worldwide.

SMA Plug-in Grounding
A grounding set for the new Sunny Boy HF series. Grounding is quick and simple – an easy plug-in without opening the enclosure. The polarity is defined by the orientation in which the grounding is attached.

String Inverter
In string technology, the PV array is divided into separate module surfaces and each of these "strings" is assigned to a separate string inverter. This technology reduces system costs while at the same time substantially simplifying installation and increasing the energy output and plant availability.

SUNCLIX
A DC plug-in system for all SMA inverters, developed in cooperation with Phoenix Contact. The field plugs can be connected to almost any line without tools, and are included with inverters free of charge.

Central Inverters
Central inverters are particularly well suited for use in PV plants with a homogenous structure (modules of the same kind with identical orientation and tilt). They are used for plants starting at 100 kW and, in most cases, are designed for outdoor installation.

» SMA Innovations

2011

Sunny Home Manager

Intelligently optimize self-consumption

The product solution for analyzing and optimizing self-consumption of PV power with an interface to the Sunny Portal online platform for monitoring and managing PV plants

2010

Sunny Central 800CP

High performance as standard

Compact, weatherproof enclosure and intelligent power management: the new Sunny Central series does not need a heavy concrete substation and thus decreases system costs

2010

Sunny Boy 3000HF

Simply efficient.

The new generation of galvanically isolating inverters: highest yields in its performance class
and easiest installation thanks to the SMA Plug-in Grounding, SUNCLIX and Quick Module

2008

Sunny Boy 5000TL

Perfection Plus. Simple.
The new Sunny Boy generation.

Bluetooth technology, graphic display, suitable for worldwide use and easy to install: leading-edge technology meets user convenience

2007

Sunny Backup System

PV power even in case of grid failure

Awarded the 2007 innovation prize for the most innovative solar product

2006

ESS

Electronic Solar Switch

Our first device-integrated DC switch-disconnector for safely disconnecting the PV array from the inverter

2010

Sunny Tripower 17000TL

The three-phase inverter
for easy system planning

Packed full of pioneering technology: with Optiprotect as multi-level security concept and Optiflex for flexible plant configuration

2009

Sunny Central 630HE

Grid management included

Optimum future prospects: more power with lower specific system costs, high flexibility for plant design and compliance with the "Medium-Voltage Directive"

2009

Sunny Island 2012

Compact design and high performance with peak efficiency

Bidirectional HF inverter, galvanic isolation, reduced weight, high efficiency

2006

Sunny Mini Central 8000TL

The world champion of amortization

H5 topology, record efficiency of 98 %, low specific price: no other pays off faster

2005

Sunny Boy 3300

The test winner

Powerful Sunny Boy with OptiCool, galvanic isolation and maximum efficiency, for the first time in a die-cast aluminum enclosure

2005

Sunny Portal

Internet portal to present plant data

Customized PV plant monitoring and individual visualization at www.SunnyPortal.com

» SMA Innovations

2004

Sunny WebBox

Data logger of the new generation

Innovative monitoring and communication with the PV plant via Internet (Sunny Portal)

2003

Sunny Beam

The simplest PV plant monitoring via radio

Attractive design for the living area, power supply via integrated PV cell

2002

Sunny Central

Central inverter for construction of larger PV power stations

With string monitoring, Sunny Central Team, and optimum service, Sunny Central is the large-scale solution

2001

Sunny Island

The system solution for off-grid supply

User-friendly connection of all components on the AC side, easy installation and extension of the plant

1995

Sunny Boy 700

The first string inverter

Cost reductions thanks to minimized DC wiring, easier installation and increased efficiency

1991

PV-WR

The first PV inverter designed for series production

User display, communication and visualization with a PC

Publication Information

Published by
SMA Solar Technology AG

Photos
Stefanie Aumiller
Andreas Berthel
Stephan Daub
Lucidmedia
Constantin Meyer
Joan Carles Milà


SMA Solar Technology

www.SMA-Solar.com

SMA Solar Technology AG
www.SMA.de
SMA America, LLC
www.SMA-America.com
SMA Technology Australia Pty., Ltd.
www.SMA-Australia.com.au
SMA Benelux SPRL
www.SMA-Benelux.com
SMA Beijing Commercial Co., Ltd.
www.SMA-China.com
SMA Canada, Inc.
www.SMA-Canada.ca
SMA Czech Republic s.r.o.
www.SMA-Czech.com
SMA France S.A.S.
www.SMA-France.com
SMA Solar UK Ltd.
www.SMA-UK.com
SMA Hellas AE
www.SMA-Hellas.com
SMA Ibérica Tecnología Solar, S.L.
www.SMA-Iberica.com
SMA Solar India Pvt. Ltd.
www.SMA-India.com
SMA Italia S.r.l.
www.SMA-Italia.com
SMA Technology Korea Co., Ltd.
www.SMA-Korea.com

SMA