Installation Manual

SUNNY HOME MANAGER

HoMan-IA-en-17 | Version 1.7

ENGLISH

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1 Information on this Document

Validity

This document is valid for the following device types:

- HM-BT-10.GR2 (Sunny Home Manager) from firmware version 1.10
- BT-SOCKET-10 (SMA radio-controlled socket) from firmware version 12.12.111.R

You can find the latest version of this document, matching the current software version of the products, at www.SMA-Solar.com.

Target Group

This document is intended for qualified persons. Only persons with the appropriate skills are allowed to perform the activities described in this document (see Section 2.3 "Skills of Qualified Persons", page 13).

Further Information

Links to additional information can be found at www.SMA-Solar.com:

Document title	Document type
SMA Bluetooth - SMA Bluetooth® Wireless Technology in Practice	Technical information
SMA BLUETOOTH® Wireless Technology	Technical description
SMA SMART HOME - The System Solution for More Independence	Planning guidelines
SMA FLEXIBLE STORAGE SYSTEM - Increased Self-Consumption with SUNNY ISLAND and SUNNY HOME MANAGER	Quick reference guide
Power Reducer Box - Compatibility List	Planning guidelines

Symbols

Symbol	Explanation
⚠ DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury
⚠ WARNING	Indicates a hazardous situation which, if not avoided, can result in death or serious injury
⚠ CAUTION	Indicates a hazardous situation which, if not avoided, can result in minor or moderate injury
NOTICE	Indicates a situation which, if not avoided, can result in property damage
i	Information that is important for a specific topic or goal, but is not safety-relevant
☐	Indicates a requirement for meeting a specific goal
☑	Desired result
✖	A problem that could occur.

Typographies

Typography	Use	Example
bold	• Display texts • Elements on a user interface • Terminals • Elements to be selected or entered	• The value can be found in the field **Energy**. • Select **Settings**. • Enter the value **10** in the field **Minutes**.
>	• Connects several elements to be selected	• Select **Settings > Date**.
[**Button/Key**]	• Button or key to be selected or pressed	• Select [**Next**].

Nomenclature

Complete designation	Designation in this manual
SMA BLUETOOTH® Piggy-Back, SMA BLUETOOTH® Piggy-Back Plus	BLUETOOTH Piggy-Back
SMA BLUETOOTH® Piggy-Back Off-Grid	BLUETOOTH Piggy-Back Off-Grid
SMA BLUETOOTH® Repeater, SMA BLUETOOTH® Repeater Outdoor	BLUETOOTH Repeater
Sunny WebBox, Sunny WebBox mit BLUETOOTH® Wireless Technology	Sunny WebBox
SMA BLUETOOTH® Wireless Technology	BLUETOOTH
SMA radio-controlled socket with BLUETOOTH® Wireless Technology	SMA Radio-Controlled Socket

2 Safety

2.1 Intended Use

Sunny Home Manager

The Sunny Home Manager is a device for monitoring PV systems and for controlling loads in households with PV systems.

The product is not splash-proof.

The product is designed for indoor use only.

Use this product only in accordance with the information provided in the enclosed documentation and with the locally applicable standards and directives. Any other application may cause personal injury or property damage.

Do not use the Sunny Home Manager in systems which include a Sunny WebBox.

For safety reasons, it is not permitted to modify the product or install components that are not explicitly recommended or distributed by SMA Solar Technology AG for the product. Unauthorized changes and modifications will void all warranty claims and the operating permission.

Any use of the product other than described in the Intended Use section does not qualify as appropriate.

The enclosed documentation is an integral part of this product. Keep the documentation in a convenient place for future reference and observe all instructions contained therein.

The type label must remain permanently attached to the product.

SMA Radio-Controlled Socket

The SMA radio-controlled socket supports load control in households with the Sunny Home Manager.

The product is not splash-proof.

The product is designed for indoor use only.

The product is approved for use in all EU member states.

Use this product only in accordance with the information provided in the enclosed documentation and with the locally applicable standards and directives. Any other application may cause personal injury or property damage.

Do not connect any medical devices to the product.

Do not connect any loads to the product if they require a continuous supply of electric current (e.g. refrigerator, freezer).

Do not connect any loads to the product if they can cause injuries or fires if unintentionally switched on (e.g. iron).

Only connect loads to the product if they are suitable for the voltage and power range of the wall outlet and the product (see Section 11.2 "SMA Radio-Controlled Socket", page 70).

Only connect the product to properly installed outlets with a protective contact.

For safety reasons, it is not permitted to modify the product or install components that are not explicitly recommended or distributed by SMA Solar Technology AG for this product. Unauthorized changes and modifications will void all warranty claims and the operating permission.

Any use of the product other than described in the Intended Use section does not qualify as appropriate.

The enclosed documentation is an integral part of this product. Keep the documentation in a convenient place for future reference and observe all instructions contained therein.

The type label must remain permanently attached to the product.

2.2 Supported Devices

2.2.1 SMA Devices

The Sunny Home Manager supports a maximum of 16 SMA devices. Of the 16 devices, the Sunny Home Manager supports a maximum of twelve SMA inverters or ten SMA radio-controlled sockets.

SMA Inverters

- Sunny Boy (SB):
  - SB 3600SE-10/SB 5000SE-10 from firmware version 2.3.35.R
  - SB 3000TL-20 from firmware version 3.01.00.R*
  - SB 4000TL-20/SB 5000TL-20 from firmware version 3.01.02.R*
  - SB 3600TL-20 from firmware version 3.25.01.R*
  - SB 3000TL-21/SB 4000TL-21/SB 5000TL-21/SB 3600TL-21 from firmware version 2.00.00.R*
  - SB 2500TLST-21/SB 3000TLST-21 from firmware version 2.00.27.R*
  - SB 2000HF/SB 2500HF/SB 3000HF from firmware version 2.30.06.R*
- Sunny Tripower (STP):
  - STP 8000TL-10/STP 10000TL-10/STP 12000TL-10/STP 15000TL-10/ STP 17000TL-10 from firmware version 2.33.02.R*
  - STP 15000TLEE-10/20000TLEE-10/STP 15000TLHE-10/STP 20000TLHE-10 from firmware version 2.10.20.R*
  - STP 5000TL-20/STP 6000TL-20/STP 7000TL-20/STP 8000TL-20/STP 9000TL-20 from firmware version 2.00.15.R*
- Inverters with BLUETOOTH Piggy-Back from firmware version 02.00.06.R** , excluding inverters of type WB (Windy Boy)
- Inverters with SMA Speedwire/Webconnect data module from firmware version 1.00.00.R.**, excluding inverters of type WB (Windy Boy)
- Inverters with SMA Speedwire/Webconnect Piggy-Back from firmware version 1.00.00.R.**, excluding inverters of type WB (Windy Boy)
- Sunny Island 6.0H-11/ Sunny Island 8.0H-11/Sunny Island 3.0M-11/ Sunny Island 4.4M-11 with SMA Speedwire data module Sunny Island from firmware version 1.00.00.R
- Sunny Backup 2200 with BLUETOOTH Piggy-Back Off-Grid from firmware version 01.01.4.R

* This firmware version is the minimum requirement for the function **Limitation of active power feed-in**.

** A list of these inverters can be found in the BLUETOOTH Piggy-Back manual. To learn which inverters support the function "Limitation of active power feed-in", see the planning guidelines "Power Reducer Box - Compatibility List".

Other SMA Devices

- SMA Radio-Controlled Socket
- SMA Energy Meter
- SMA BLUETOOTH Repeater
- SMA BLUETOOTH Repeater Outdoor
- Sunny SensorBox with SMA Power Injector with BLUETOOTH

2.2.2 Devices from Other Manufacturers

Inverters

Inverters from other manufacturers can be integrated in PV systems with Sunny Home Manager provided that the following requirements are met:

- ☐ The power output of the inverters must be captured via a separate SMA Energy Meter.
- ☐ The SMA Energy Meter must be configured in Sunny Portal as a PV production meter (for information on how to configure the energy meters, see the user manual of the Sunny Home Manager).
- ☐ In hybrid systems with SMA inverters and inverters from other manufacturers, the PV production meter must measure the joint power of all inverters taken together. As soon as you have registered and configured a PV production meter in the Sunny Home Manager system, the Sunny Home Manager will no longer query the power data of the SMA inverters directly from the inverters via BLUETOOTH or Speedwire, but will receive the power data from the PV production meter.

Monitoring of the PV system and the dynamic limitation of the active power fed into the utility grid are not possible with inverters from other manufacturers. In this case, verify whether operation of the PV system without dynamic active power limitation is permitted in the given country, or whether dynamic active power limitation can be performed independently by the inverter itself.

Energy Meters

The Sunny Home Manager supports the following energy meter types:

- Energy meters with D0 interface* :

  You can find a list of supported energy meters with D0 interface in the planning guidelines "SMA SMART HOME - The System Solution for more Independence" at www.SMA-Solar.com.

  Recommended resolution: at least 10 Wh

  Information: for the function **Limitation of active power feed-in**, the energy meters with D0 interface must have a resolution of at least 1 Wh.

* D0 interface in accordance with IEC 62056-21, part 4.3

- Energy meters with S0 interface* :

  Energy meters with an S0 interface must output values netted across the line phases at the S0 interface. If necessary, contact the manufacturer of the energy meter.

  Bidirectional meters with an S0 interface must be equipped with two S0 interfaces.

  Recommended pulse length: at least 20 ms

  Recommended pulse rate: 1,000 pulses per kWh

  Information: for the function **Limitation of active power feed-in**, energy meters with an S0 interface must have the following minimum pulse rates:
  - At a maximum allowed grid feed-in of more than 1,500 W: at least 250 pulses per kWh
  - At a maximum allowed grid feed-in of less than 1,500 W: at least 500 pulses per kWh

Routers

SMA Solar Technology AG recommends the use of a router that supports DHCP.

Other Devices:

- Heat pump Stiebel Eltron WWK 300
- Heat pump Tecalor TTA 300
- Miele@home devices (e.g. washing machines, dryers) with Miele@home Gateway from firmware version 4.0.x
- Devices which receive control commands directly from the Sunny Home Manager, or forward such commands to connected loads, via a data exchange protocol defined by SMA Solar Technology AG
  - Air/heat pump Stiebel Eltron LWZ with Internet service gateway
  - Air/heat pump Tecalor THZ with Internet service gateway

2.3 Skills of Qualified Persons

The tasks described in this manual must be performed by qualified persons only. Qualified persons must have the following skills:

- Training in the installation and commissioning of electrical devices
- Knowledge of all applicable standards and directives

* S0 interface in accordance with DIN EN 62053-31, class A

2.4 Safety Precautions

This section contains safety precautions that must be observed at all times when working on or with the product.

To prevent personal injury and property damage and to ensure long-term operation of the product, read this section carefully and follow all safety precautions at all times.

Sunny Home Manager

⚠ WARNING

Danger to life due to electric shock

Lethal voltages are present in the conductive parts of the plug-in power supply and the top-hat rail power supply.

- Only use the Sunny Home Manager indoors and in a dry environment, keeping it away from liquids.
- Do not open the plug-in power supply.

⚠ CAUTION

Risk of injury due to incorrect cable routing

Incorrectly routed cables may cause a tripping hazard.

- Ensure that the cables are routed so that no one can step on or trip over them.

NOTICE

Damage to the Sunny Home Manager due to moisture penetration

The Sunny Home Manager is not splash-proof.

- Only use the Sunny Home Manager indoors and in a dry environment.

Damage to the Sunny Home Manager due to condensation

If the Sunny Home Manager is taken from a cold environment into a warm environment, condensation water may form in the Sunny Home Manager.

- In the event of large temperature differences, only supply the Sunny Home Manager with voltage once it has reached room temperature.

SMA Radio-Controlled Socket

⚠ WARNING

Danger to life due to electric shock

Lethal voltages are present in the live components.

- Only use the SMA radio-controlled socket indoors and in a dry environment (e.g. not in damp rooms) and keep away from liquids.
- Only insert suitable plugs into the SMA radio-controlled socket.
- Unplug the SMA radio-controlled socket from the outlet prior to cleaning and clean with a dry cloth only.

The SMA radio-controlled socket is equipped with a relay with μ contact.

- To ensure safe disconnection from the utility grid, pull the SMA radio-controlled socket out of the wall outlet.

Risk of injury and fire due to unintentional and unattended switching on of loads

Loads that are activated via an SMA radio-controlled socket unintentionally and while unattended can cause injuries and fires (e.g. iron).

- Do not connect any loads to the SMA radio-controlled socket that could endanger persons or cause damage if unintentionally switched on.

NOTICE

Damage to the SMA radio-controlled socket

If the SMA radio-controlled socket is not operated properly, it could be damaged.

- Do not operate SMA radio-controlled sockets plugged into each other.

Damage to the wall outlet

If the SMA radio-controlled socket is operated in a wall outlet that is not suitable for the power of the connected load, damage to the wall outlet could result.

- Only operate the SMA radio-controlled socket in wall outlets that are suitable for the power of the connected load.

3 Scope of Delivery

Scope of Delivery of the Sunny Home Manager

Check the scope of delivery for completeness and any visible external damage. Contact your distributor if the delivery is incomplete or damaged.

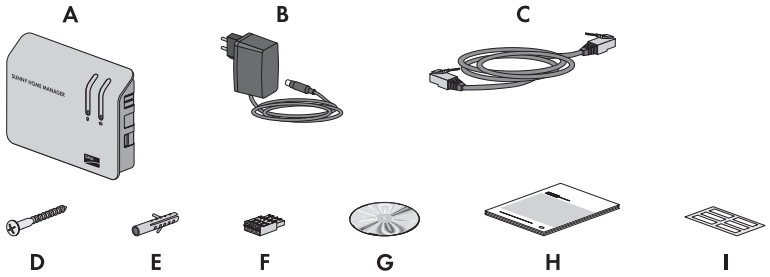


Figure 1: Components included in the scope of delivery

Position	Quantity	Designation
A	1	Sunny Home Manager
B	1	Plug-in power supply
C	1	Network cable
D	2	Screw
E	2	Screw anchor
F	3	4-pole plug
G	1	CD with product documentation and Sunny Home Manager Assistant
H	1	Quick reference guide for commissioning
I	6	Label

Scope of Delivery of SMA Radio-Controlled Socket

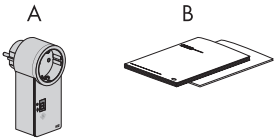


Figure 2: Components included in the scope of delivery

Position	Quantity	Designation
A	1	SMA radio-controlled socket
B	1	Installation manual and supplementary sheet

4 Product Description

4.1 Sunny Home Manager

4.1.1 Functions

The Sunny Home Manager is a device for monitoring PV systems and for controlling loads in households with PV systems. The Sunny Home Manager carries out the following tasks:

- Read-out of energy meter data and data from SMA devices with BLUETOOTH or Speedwire communication interface
- Transmission of data to Sunny Portal
- Support for increased self-consumption
- Limitation of active power feed-in
- Implementation of grid management services via Ethernet-based communication

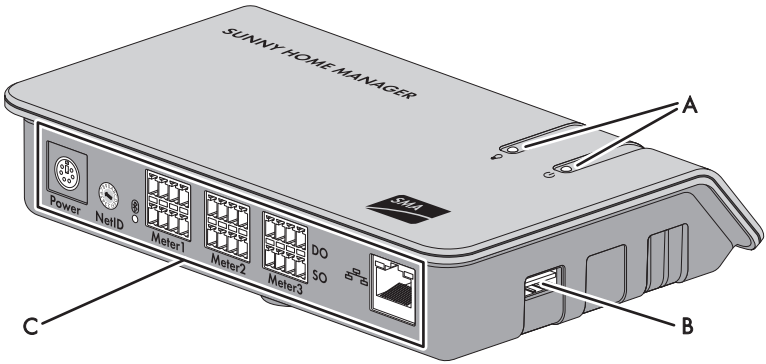


Figure 3: Sunny Home Manager

Position	Designation
A	Status LED and energy consumption LED
B	USB port*
C	Connection area with BLUETOOTH LED

* The USB ports on the right-hand and left-hand sides of the enclosure currently have no function.

Reading Out Energy Meter Data and Data from SMA Devices with BLUETOOTH or Speedwire Communication Interface

The Sunny Home Manager reads out the data of the connected energy meters and SMA devices.

The Sunny Home Manager is connected to the energy meters via network cables.

The Sunny Home Manager establishes the wireless connection to the BLUETOOTH devices (e.g. SMA radio-controlled sockets) via BLUETOOTH.

The communication between the Sunny Home Manager and an SMA inverter is possible either via BLUETOOTH or via Speedwire. It is not necessary for all inverters in a PV system to use the same interface. The Sunny Home Manager can manage and regulate inverters with BLUETOOTH and inverters with Speedwire as one PV system.

The Sunny Home Manager establishes the connection to Speedwire devices via a router/network switch in the local network.

SMA inverters are either available fitted with Speedwire or BLUETOOTH ex works, or they can be retrofitted accordingly (see product page of the respective inverter at www.SMA-Solar.com).

PV System Monitoring and Parameterization via Sunny Portal

Sunny Portal serves as the user interface of the Sunny Home Manager. The Sunny Home Manager establishes the Internet connection to Sunny Portal and sends the read-out data to Sunny Portal via a router.

Using Sunny Portal, the Sunny Home Manager enables monitoring of the system, a display of the PV energy available over the course of the day, and a live display of all energy flows in the household. Taking the different electricity prices into account, the Sunny Home Manager derives from this recommendations for the prudent use of electrical energy.

Support for Increased Self-Consumption

Self-consumption means that the PV power is consumed at the site where it is generated.

In every household, there is "natural" self-consumption, because loads (e.g. oven) are in operation while PV power is being produced and because certain loads continuously consume current (e.g. refrigerator, devices in standby mode). If the PV system produces a lot of PV power, it is possible that only a part of that PV power will be self-consumed. The excess PV power is fed into the utility grid.

A higher self-consumption quota can be achieved if loads are specifically switched on when excess PV power is available.

The following functions of the Sunny Home Manager make it possible to increase the self-consumption quota:

Function	Explanation
Creation of a PV yield forecast	The Sunny Home Manager continuously logs the energy generated by the PV system. It also receives location-based weather forecasts via the Internet* . Based on this information, the Sunny Home Manager creates a PV yield forecast for the PV system.

Function	Explanation
Creation of a load profile	The Sunny Home Manager logs the PV generation, the grid feed-in, and the purchased electricity. Based on PV generation, grid feed-in and purchased electricity, the Sunny Home Manager determines how much energy is typically consumed at certain times and uses this to create a load profile for the household. This load profile can be different for each day of the week. The Sunny Home Manager obtains the PV generation data from the connected SMA inverters, from an SMA Energy Meter, or from another energy meter. The Sunny Home Manager receives the data on grid feed-in and purchased electricity from an SMA Energy Meter or at least one other energy meter.
Control of SMA radio-controlled sockets	Specific loads connected to SMA radio-controlled sockets can be switched on and off by the Sunny Home Manager. The Sunny Home Manager uses the PV yield forecast and the load profile to determine favorable time periods for optimization of internal power supply and self-consumption. In accordance with the PV system operator's specifications and taking the determined time periods into account, the Sunny Home Manager controls switch-on and switch-off of the loads. Also, SMA radio-controlled sockets provide the facility to individually monitor and record the consumption of loads.
Control of Miele devices via the Miele@home system	The Sunny Home Manager can control supported devices from Miele & Cie KG via a Miele@home gateway** . The Sunny Home Manager uses the PV yield forecast and the load profile to determine favorable time periods for optimization of internal power supply and self-consumption. In accordance with the PV system operator's specifications and taking the determined time periods into account, the Sunny Home Manager controls switch-on and switch-off of the loads.
Control of devices via a data exchange protocol	The Sunny Home Manager can control devices using a data exchange protocol defined by SMA Solar Technology AG by communicating with the devices either directly or via an appropriate gateway using Ethernet. The device reports its energy demand to the Sunny Home Manager and the Sunny Home Manager allocates the available energy to the device taking the PV yield forecast and the consumption forecast into account.

Function	Explanation
When used with SMA battery inverters: Prevention of derating losses	The Sunny Home Manager prevents derating losses which can arise due to the limitation of active power feed-in. Taking the PV yield forecast and the consumption forecast into account, the timing and duration of battery charging are controlled and the battery charge is optimized according to the available energy supply, if excess PV energy cannot otherwise be used.
When used with SMA battery inverters: Optimized discharge of lead-acid batteries	The Sunny Home Manager uses the calculated load profile and the PV yield forecast to control battery discharge. The battery is discharged when the following criteria are met: • It is possible for the battery to be discharged to a point where sufficient storage capacity is free to absorb the amount of PV energy forecast for the next battery charge. • The discharged lead-acid battery can then promptly be charged with excess PV energy. The use of these criteria ensures that the lead-acid battery is conserved while making optimum use of the battery capacity.
Transmission of SMA Energy Meter data to Sunny Island systems	If an SMA Speedwire Sunny Island data module is installed in the Sunny Island, the Sunny Home Manager can send SMA Energy Meter data to the Sunny Island system.
Transmission of energy meter data to Sunny Backup systems	If a BLUETOOTH Piggy-Back Off-Grid is installed in the Sunny Backup, the Sunny Home Manager can transfer the energy meter data to the Sunny Backup system.

* Data is not available in all countries

** This function is not available in all countries.

Limitation of Active Power Feed-In

Local regulations, for example, the Renewable Energy Sources Act (EEG) in Germany, can call for permanent limitation of active power feed-in for your PV system, that is, a limitation of the active power fed into the utility grid to a fixed amount or a percentage share of the installed nominal PV system power. If required, ask your grid operator whether a permanent limitation of the active power feed-in is necessary and whether you are allowed to use the Sunny Home Manager for this purpose (see the Manufacturer's Declaration "Feed-In Management In Accordance with the Renewable Energy Sources Act (EEG) 2012 with SMA Sunny Home Manager (SHM) from SMA" available at www.SMA-Solar.com). Using an SMA Energy Meter or a suitable feed-in meter, the Sunny Home Manager monitors the active power that is fed into the utility grid. If the active power feed-in exceeds the prescribed limit, the Sunny Home Manager limits the PV generation of the inverters accordingly.

The Sunny Home Manager avoids derating losses due to limitation of PV power generation by taking the current self-consumption of the household into account. Sunny Home Manager helps to use excess PV power in households directly and increases the self-consumption quota as a result. For PV systems with SMA battery inverters, the Sunny Home Manager preferentially uses the derated active power to charge the battery.

Example: Limitation of the active power feed-in to 70% of the nominal PV system power

Due to high levels of solar irradiation, the system can currently produce 90% of the nominal PV system power.

- At this time, 20% of the nominal PV system power is being consumed by loads in the household. The remaining 70% of the nominal PV system power is being fed into the utility grid.
  ☑ No limitation of PV generation is required.
- A load is switched off and only 10% of the nominal PV system power is consumed in the household. As a result, 80% of the nominal system power is available for feed-in to the utility grid – more than allowed.
  ☑ The Sunny Home Manager reduces PV generation from the theoretically possible 90% of nominal PV system power to 80%. 70% of the nominal PV system power continues to be fed into the utility grid.

Implementation of Grid Management Services via Ethernet-Based Communication

As part of grid management services, it may be necessary to implement grid operator specifications for active power limitation and for reactive power feed-in (e.g. the active power feed-in of your PV system will be reduced in the event of grid overloads).

The Sunny Home Manager can implement requirements for grid management services that the grid operator sends to the Sunny Home Manager via Ethernet-based communication.

If applicable, ask your grid operator whether your PV system is required to implement grid management services.

4.1.2 Type Label

The type label clearly identifies the product. The type label is located on the back of the product. You can read off the following data from the type label:

- Serial number
- Registration ID
- Assembly name (type)
- Hardware version (version)

You will require the information on the type label to use the product safely and when seeking customer support from the SMA Service Line.

Symbols on the Type Label

Symbol	Designation	Explanation
N23114	C-Tick	The product complies with the requirements of the applicable Australian EMC standards.
FC	FCC marking	The product complies with the requirements of the applicable FCC standards.
®	BLUETOOTH Wireless Technology	The product has a BLUETOOTH interface.
	Data matrix code	2D code for device-specific characteristics

4.1.3 LEDs

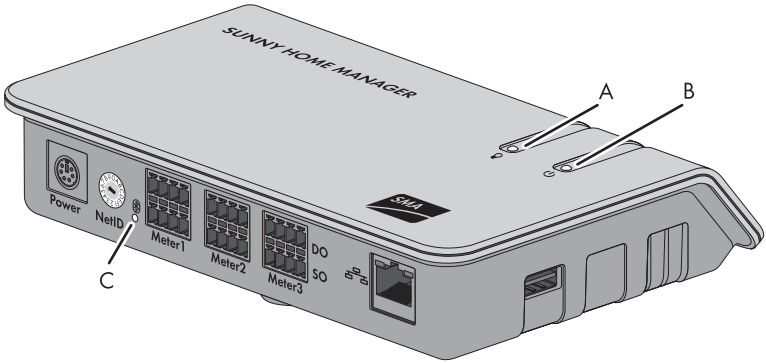


Figure 4: LEDs of the Sunny Home Manager

Position	Designation	Explanation
A	Energy consumption LED	Displays the current electricity consumption
B	Status LED	Displays the current status of the Sunny Home Manager
C	BLUETOOTH LED	Displays the status of the BLUETOOTH connection.

Energy Consumption LED

The energy consumption LED is only active if either the bidirectional meter for grid feed-in and purchased electricity is connected or one feed-in meter and one purchased electricity meter are connected.

LED status	Explanation
Glowing green	The household is being supplied with energy from the PV system only.
Flashing green and orange intermittently	The household is being supplied with energy from the PV system and from the utility grid.
Glowing orange	The household is being supplied with energy from the utility grid only.

Status LED

LED status	Explanation
Glowing green	The Sunny Home Manager is connected to the devices of the PV system and Sunny Portal.

Further states of the status LED are described in the Section "Troubleshooting" (see Section 9.1.2 "States of the Status LED", page 52).

BLUETOOTH LED

LED status	Explanation
Glowing blue	The BLUETOOTH connection to the devices of the PV system is good.

Further states of the BLUETOOTH LED are described in the Section "Troubleshooting" (see Section 9.1.3 "States of the BLUETOOTH LED", page 54).

LEDs on the Network Terminal

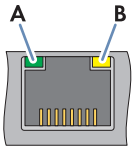


Figure 5: LEDs on the network terminal

Position	LED	LED status	Explanation
A	Link/Activity LED (green)	Glowing	Network connection established
		Flashing	Network connection established. Data is being sent or received.
		Off	No network connection established
B	Speed LED (yellow)	Glowing	The data transfer rate is up to 100 Mbit/s.
		Off	The data transfer rate is up to 10 Mbit/s.

4.1.4 System Requirements

Operating systems supported by the Sunny Home Manager Assistant:

- Microsoft Windows 8
- Microsoft Windows 7
- Microsoft Windows Vista
- Microsoft Windows XP Service Pack 2
- Linux with kernel from version 2.6.12, with Oracle Java Runtime Environment from version 6
- MAC OS from version 10.6, with Java Runtime Environment from version 6

Internet access requirements:

- Permanent Internet access. Recommended: DSL access with flat rate

Supported web browsers:

- Google Chrome from version 14.0
- Microsoft Internet Explorer from version 8
- Mozilla Firefox from version 5
- Opera from version 11.0
- Safari from version 5.0

Recommended display resolution:

- Minimum 1,024 pixels x 768 pixels

Energy meters:

Minimum energy meter types recommended by SMA Solar Technology AG for connection to the Sunny Home Manager:

- Feed-in meter and purchased electricity meter

  or

- Bidirectional meter for grid feed-in and purchased electricity

At least one feed-in meter is required for the function **Limitation of active power feed-in** (recommended: SMA Energy Meter).

The Sunny Home Manager receives the PV generation data via the connected SMA inverters or via an optionally connected PV production meter.

Network cable requirements:

- Cable length between two nodes: max. 50 m with patch cable, max. 100 m with installation cable
- Cross-section: at least 2 x 2 x 0.22 mm^2 or at least 2 x 2 x 24 AWG
- Cable category: Cat5, Cat5e, Cat6, Cat6a, Cat7
- Cable shield: SF/UTP, S/UTP, SF/FTP, S/FTP
- Plug type: RJ45 for Cat5, Cat5e, Cat6, Cat6a

4.2 SMA Radio-Controlled Socket

4.2.1 Functions

The SMA radio-controlled socket supports load control in households with the Sunny Home Manager. The SMA radio-controlled socket carries out the following tasks:

- Implementing control commands issued by the Sunny Home Manager
- Measuring the energy consumption of the connected loads
- Improving the wireless connection between BLUETOOTH devices

Implementing Control Commands of the Sunny Home Manager

The Sunny Home Manager can switch the SMA radio-controlled socket on and off. As a result, specific electrical devices can be switched on if e.g. a lot of PV power is available.

The times at which the Sunny Home Manager switches the radio-controlled socket on or off depend on the configuration of the SMA radio-controlled socket and the scheduling of the Sunny Home Manager (see the user manual "SUNNY HOME MANAGER in Sunny Portal").

Measuring the Energy Consumption of the Connected Loads

The SMA radio-controlled socket measures the energy consumption of the connected loads and transmits the measured values via the Sunny Home Manager to Sunny Portal.

Improving the Wireless Connection between BLUETOOTH Devices

If the distance between BLUETOOTH devices is too great or obstructions interfere with the BLUETOOTH connection, the SMA radio-controlled socket can be used as a repeater to bridge the dead zone.

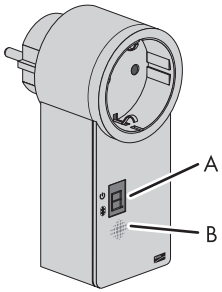


Figure 6: SMA radio-controlled socket

Position	Designation	Explanation
A	LED display	Displays status, operating modes, and NetIDs
B	Touch key	Operation of the SMA radio-controlled socket

4.2.2 LED Display

Upper Horizontal LED

Figure 7: Upper horizontal LED of the LED display

LED status	Operating mode/status of the SMA radio-controlled socket
Glowing green	**Manually switched on** No control of the SMA radio-controlled socket by the Sunny Home Manager
Glowing orange	**Manually switched off** No control of the SMA radio-controlled socket by the Sunny Home Manager
Flashing green	**Automatically switched on** Control of the SMA radio-controlled socket by the Sunny Home Manager
Flashing orange	**Automatically switched off** Control of the SMA radio-controlled socket by the Sunny Home Manager

LED status	Operating mode/status of the SMA radio-controlled socket
Glowing red	System is starting. **or** Update process is running. In this status, do not unplug the SMA radio-controlled socket from the outlet. Otherwise, the SMA radio-controlled socket could be damaged.

Lower Horizontal LED

Figure 8: Lower horizontal LED of the LED display

LED status	Explanation
Glowing blue	The BLUETOOTH connection to the Sunny Home Manager is good.

Further states of the lower horizontal LED are described in the Section "Troubleshooting" (see Section 9.2 "Errors in the SMA Radio-Controlled Socket", page 55).

Vertical LEDs

Figure 9: Vertical LEDs of the LED display

LED status	Operating mode/status of the SMA radio-controlled socket
Glowing green	The touch key is ready for operation. In this status, the SMA radio-controlled socket can be reset to the default settings (see Section 9.8, page 65).
Flashing green	The SMA radio-controlled socket is initializing.

All LEDs of the LED Display

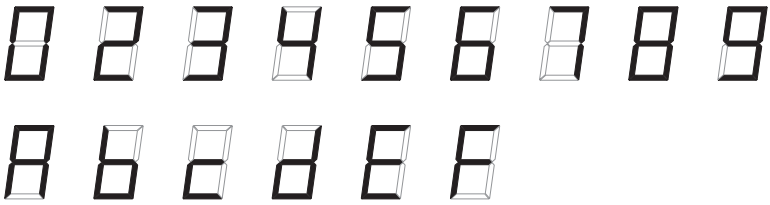


Figure 10: Display of NetIDs

LED status	Operating mode/status of the SMA radio-controlled socket
0; 2 to 9; A to F	NetID configuration mode and display of the configured NetID

5 Preparing for Mounting and Commissioning of the Sunny Home Manager

5.1 Preparing for BLUETOOTH Communication

If the Sunny Home Manager is to communicate with other SMA devices via BLUETOOTH, e.g. with SMA radio-controlled sockets, you must carry out the following preparatory steps.

5.1.1 Commissioning a BLUETOOTH PV System

All devices must be set to the same NetID so that the SMA BLUETOOTH devices in a PV system can communicate with each other. The NetID is used to distinguish between PV systems using SMA BLUETOOTH located in close proximity to one another.

The NetID can be a number from 1 to 9 or a letter from A to F.

To make sure that you do not set a NetID which is already being used by another BLUETOOTH PV system in the vicinity, you need to determine a free NetID prior to commissioning your BLUETOOTH PV system.

Requirement for detecting a free NetID

You can only detect a free NetID using a computer with integrated BLUETOOTH or with a BLUETOOTH stick (BLUETOOTH class 1) and the software Sunny Explorer (see Sunny Explorer help). You can obtain Sunny Explorer free of charge from the download area at www.SMA-Solar.com.

Requirement for selecting NetID "1" as the NetID of the PV system

For BLUETOOTH devices, NetID **1** is preset at the factory. If NetID **1** is set in the Sunny Home Manager, it can connect to a maximum of one other device via BLUETOOTH or Speedwire.

- If you would like to connect more SMA devices than one inverter and one Sunny Home Manager, select a NetID other than NetID **1**.

Procedure

1. If another system with BLUETOOTH is located within 500 m of your system, determine a free NetID at the planned mounting location of every BLUETOOTH device and make a note of this (see Sunny Explorer manual).
2. For all devices that are to communicate with the Sunny Home Manager via BLUETOOTH, set the previously noted free NetID and commission the devices (see manual of BLUETOOTH device or BLUETOOTH Piggy-Back).
3. Note the serial numbers of the Sunny Home Manager and all other SMA devices. For the SMA radio-controlled sockets, also note the load that you wish to assign to the respective SMA radio-controlled socket.

4. Note the registration ID of the Sunny Home Manager.

   Reading off the serial number and registration ID

   You can read off the serial number and the registration ID of the Sunny Home Manager at the following locations:

   - On the type label on the back of the Sunny Home Manager
   - On the cover of the supplied CD

5. With the exception of the Sunny Home Manager and the SMA radio-controlled socket, commission all BLUETOOTH devices (see BLUETOOTH device manuals).

5.1.2 Configuring the NetID on the Sunny Home Manager

Requirement:

☐ The BLUETOOTH PV system must be commissioned (see Section 5.1.1 "Commissioning a BLUETOOTH PV System", page 28).

Procedure

- Use a screwdriver to turn the arrow of the rotary switch **NetID** to the desired NetID (blade width of the screwdriver: 2.5 mm).

5.1.3 Configuring the NetID on the SMA Radio-Controlled Socket

Configuring the NetID for the First Time

1. Insert the SMA radio-controlled socket into an outlet.
   ☑ The upper horizontal LED glows red for approximately ten seconds, then the vertical LEDs glow green for approximately four seconds.
2. As soon as the LED display shows **0**, keep tapping the touch key until the LED display shows the desired NetID.
3. To adopt the NetID, wait five seconds. During this time, do not tap the touch key.

Changing the NetID

Requirements:

☐ The SMA radio-controlled socket must be inserted in an outlet.

☐ The upper horizontal LED must be glowing orange or green.

Procedure

1. Hold the touch key down for approximately two seconds.
   ☑ The LED display shows the last configured NetID.
2. Keep tapping the touch key until the desired NetID is displayed.
3. To adopt the NetID, wait five seconds. During this time, do not tap the touch key.

5.2 Preparing for Speedwire Communication

If the Sunny Home Manager is to communicate with other SMA devices via Speedwire, the Sunny Home Manager and the Speedwire devices must be in the same local network. Perform the following preparatory steps.

Inverters with Webconnect function

If an inverter is already registered in Sunny Portal with the Webconnect function, the inverter cannot be added to the Sunny Home Manager system.

- Delete the inverter with Webconnect function from the Webconnect system or deactivate data reception for the inverter in the Webconnect system.

Requirements:

- ☐ A NetID other than NetID **1** must be set on the Sunny Home Manager (see Section 5.1.2 "Configuring the NetID on the Sunny Home Manager", page 29). This enables the Sunny Home Manager to connect to several devices simultaneously via Speedwire or BLUETOOTH.
- ☐ DHCP must be activated on the router (see router manual). If your router does not support DHCP, you can configure the static network settings on the Speedwire device using SMA Connection Assist* .
- ☐ All UDP ports > 1024 on the router or modem must be open for outgoing connections. If there is a firewall installed on the router or modem, you might have to adjust the firewall rules.
- ☐ It must be possible for the outgoing router or modem connections to reach all Internet destinations (target IP, target port). If there is a firewall installed on the router or modem, you might have to adjust the firewall rules.
- ☐ On a router or modem with NAT (Network Address Translation), no port forwarding should be set up. This will help prevent potential communication problems.
- ☐ There must be no packet filtering or manipulation for SIP packets installed on the router or modem.

Procedure

1. **Deactivating the BLUETOOTH communication of the inverters**

   If an inverter communicates with the Sunny Home Manager simultaneously via Speedwire and BLUETOOTH, data recording errors will result.

   - For inverters with BLUETOOTH interface, set NetID **0** (see inverter or Bluetooth Piggy-Back manual). This deactivates communication via BLUETOOTH.

2. Connect the Speedwire devices to the router/network switch (see Speedwire device manual). Make sure that the distance to the mounting location of the Sunny Home Manager is not too great, as the Sunny Home Manager must later be connected to the same router/network switch.

* You can obtain the SMA Connection Assist software free of charge from the download area at www.SMA-Solar.com.

6 Installation

6.1 Requirements for the Mounting Location of the Sunny Home Manager

- ☐ The mounting location must be indoors.
- ☐ The mounting location must be protected against dust, moisture and corrosive substances.
- ☐ The cable route from the mounting location to the router must not exceed a maximum length of 100 m.
- ☐ The cable route from the mounting location of the Sunny Home Manager to the energy meters with D0 interface must not exceed a maximum length of 15 m.
- ☐ The cable route from the mounting location of the Sunny Home Manager to the energy meters with S0 interface must not exceed a maximum length of 30 m.
- ☐ A minimum distance of of 1 m must be maintained from devices using the 2.4 GHz radio spectrum (e.g. WLAN devices, microwave ovens). This will prevent reduced connection quality and data transmission speed.
- ☐ The Sunny Home Manager must not have radio shielding (e.g. in a metal cabinet).

Minimum Clearances:

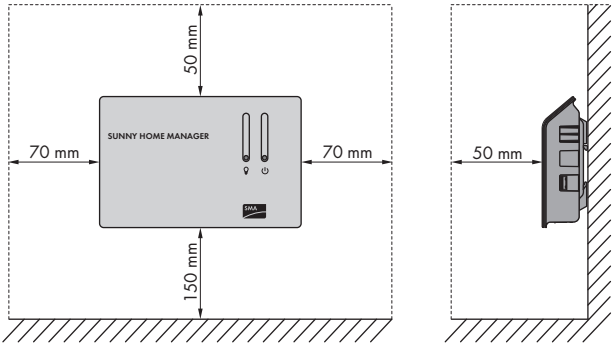


Figure 11: Minimum clearances

- Observe minimum clearances to walls, other communication products, inverters, or objects.

6.2 Requirements for the Mounting Location of the SMA Radio-Controlled Socket

- ☐ The SMA radio-controlled socket must only be operated in wall outlets that are suitable for the power of the connected load.
- ☐ A minimum distance of of 1 m must be maintained from devices using the 2.4 GHz radio spectrum (e.g. WLAN devices, microwave ovens). This will prevent reduced connection quality and data transmission speed.

6.3 Checking the BLUETOOTH Connection at the Designated Mounting Location

If the Sunny Home Manager is to communicate with other SMA devices via BLUETOOTH, e.g. with SMA radio-controlled sockets, you must check the BLUETOOTH connection at the designated mounting location.

Requirements:

☐ The same NetID must be configured for all BLUETOOTH devices and on the Sunny Home Manager (see Section 5 "Preparing for Mounting and Commissioning of the Sunny Home Manager", page 28).

☐ The BLUETOOTH PV system must be commissioned (see Section 5.1 "Preparing for BLUETOOTH Communication", page 28).

Procedure

1. Supply the Sunny Home Manager with voltage via the plug-in power supply (see Section 7.6.1).

   ☑ After approx. two minutes, the BLUETOOTH LED is glowing blue. The connection to the BLUETOOTH devices is good.

   ✖ The BLUETOOTH LED is flashing blue?

   The BLUETOOTH connection is critical.

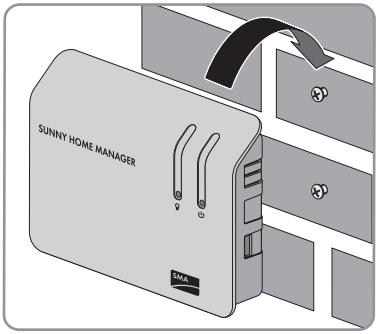
   - If possible, select a different mounting location and check the connection.
   - If no other mounting location is possible, use a BLUETOOTH Repeater or an SMA radio-controlled socket. This will extend the wireless range of your BLUETOOTH network.

2. Pull the plug-in power supply out of the outlet.
3. Unplug the DC plug of the plug-in power supply from the **Power** terminal of the Sunny Home Manager.

6.4 Mounting the Sunny Home Manager

6.4.1 Mounting the Sunny Home Manager on the Wall

1. Define the position of the Sunny Home Manager on the wall.
2. Mark the position of the drill holes on the wall (distance between drill holes: 58 mm).
3. Drill the holes (diameter: 6 mm).
4. Insert the screw anchors into the holes.
5. Screw in the screws leaving approximately 6 mm protruding from the wall.
6. Hook the Sunny Home Manager onto the screws. Ensure that the heads of the screws are engaged in the holes at the back of the Sunny Home Manager.



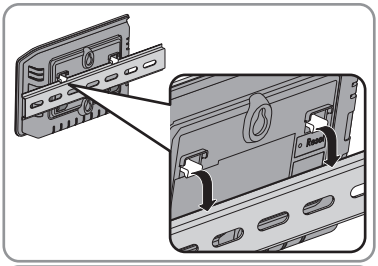
6.4.2 Mounting the Sunny Home Manager on the Top-Hat Rail

Requirement:

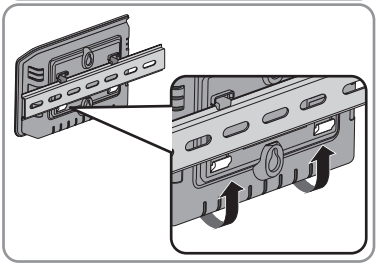
☐ The top-hat rail must be firmly installed on the wall.

Procedure

1. Press the Sunny Home Manager with the upper retainers into the upper edge of the top-hat rail.



2. Hook the lower retainers into the lower edge of the top-hat rail.



7 Connection

7.1 Connection Area

Bottom of Enclosure

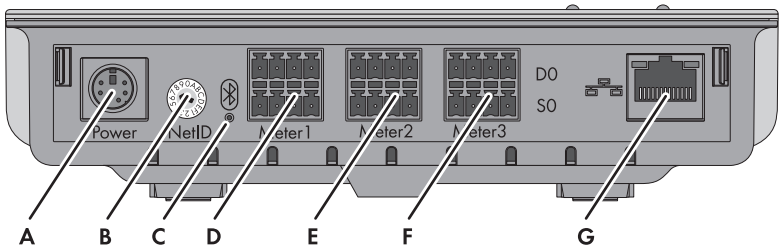


Figure 12: Terminals on the bottom of the enclosure

Position	Designation	Explanation
A	Power	Pin connector for plug-in power supply
B	NetID	Rotary switch for configuring the NetID
C	BLUETOOTH LED	Status display of BLUETOOTH connection
D	Meter 1	Pin connector for: • 1 purchased electricity meter with D0 or S0 interface **or** • 1 bidirectional meter with D0 interface for grid feed-in and purchased electricity
E	Meter 2	Pin connector for 1 feed-in meter with D0 or S0 interface*
F	Meter 3	Pin connector for 1 PV production meter with D0 or S0 interface
G	Network terminal	RJ45 pin connector for the network cable

* If a bidirectional meter is connected to the pin connector **Meter 1**, the pin connector **Meter 2** has no function.

Right Side of Enclosure

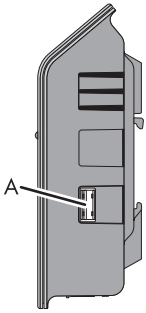


Figure 13: Terminal on the right side of the enclosure

Position	Designation	Explanation
A	USB port	Currently without function

Left Side of Enclosure

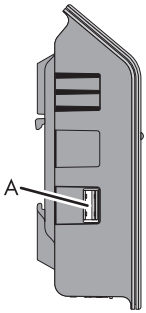


Figure 14: Terminal on the left side of the enclosure

Position	Designation	Explanation
A	USB port	Currently without function

Contact Pin Assignment of the Pin Connector

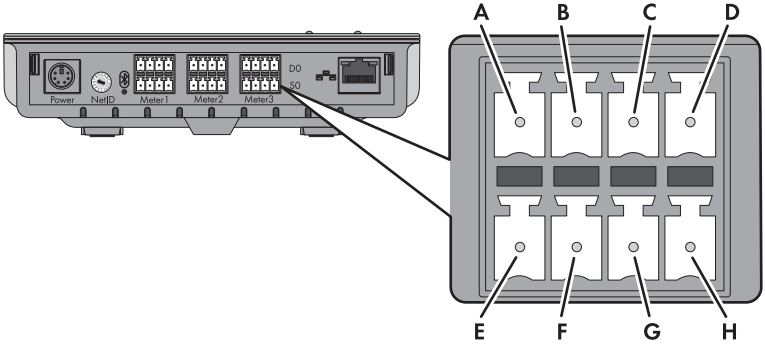


Figure 15: Contact pin assignment of the pin connectors at the bottom of the Sunny Home Manager enclosure

Upper contact pin row for D0:

Pin	Signal	Specification	Description
A	GND	Voltage supply	Ground
B	TX	Transmitter output	Transmit D0
C	RX	Receiver input	Receive D0
D	VCC_D0, +8 Volt	Voltage supply output	Voltage supply for the optical probe

Lower contact pin row for S0:

Pin	Signal	Specification	Description
E	S0-	Input and output	S0 signal
F	S0+	Input and output	S0 signal
G	GND	Voltage supply	Ground of the external voltage supply when supplied via top-hat rail power supply
H	+12 Volt, DC	Voltage supply input	External voltage supply when supplied via top-hat rail power supply

7.2 Connecting the Sunny Home Manager to Energy Meters

7.2.1 Connecting the Sunny Home Manager to the SMA Energy Meter

The SMA Energy Meter and the Sunny Home Manager must be connected to the same router.

Additionally required material (not included in the scope of delivery):

☐ 1 network cable (for cable requirements, see Section 4.1.4)

Procedure

1. Connect the SMA Energy Meter to the router (see installation manual of the SMA Energy Meter).
2. Connect the Sunny Home Manager to the router (see Section 7.4, page 41).

7.2.2 Connecting the Sunny Home Manager to Energy Meters with D0 Interface

Additionally required material (not included in the scope of delivery):

☐ Cable with optical probe and 4-pole plug (see Section 12 "Accessories", page 73).

Requirements for energy meters with D0 interface:

☐ D0 interface in accordance with IEC 62056-21, part 4.3

☐ Recommended resolution: at least 10 Wh.
Energy meters with a D0 interface must have a resolution of at least 1 Wh for the function **Limitation of active power feed-in**.

List of recommended energy meters

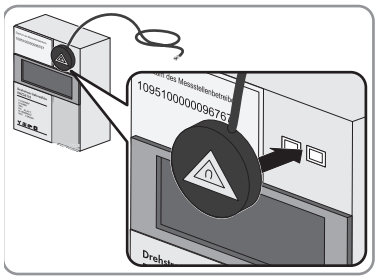
You can find a list of recommended energy meters with D0 interfaces in the Planning Guidelines "SMA SMART HOME - The System Solution for more Independence" at www.SMA-Solar.com.

Activation of the D0 interface by the grid operator

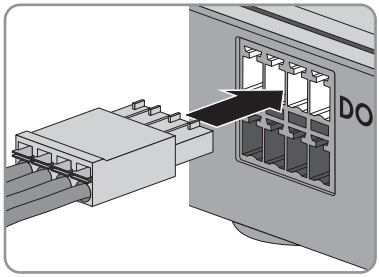
It is possible that the D0 interface will need to be cleared by the grid operator. If necessary, contact your grid operator.

Procedure

1. Position the magnet retainer of the optical probe at the front upper right-hand corner of the energy meter. The infrared interfaces on the optical probe and on the energy meter must be perfectly aligned.



2. Connect the plug of the optical probe to the pin connector to which the corresponding energy meter is assigned. Insert the four-pole plug into the upper contact pin row:
   - For purchased electricity meters, insert the four-pole plug into the pin connector **Meter 1**.
   - For feed-in meters, insert the four-pole plug into the pin connector **Meter 2**.
   - For PV production meters, insert the four-pole plug into the pin connector **Meter 3**.
   - For bidirectional meters for grid feed-in and purchased electricity, insert the four-pole plug into the pin connector **Meter 1**.



3. Use the labels provided to mark each cable with the pin connector and energy meter to which it is assigned.

7.2.3 Connecting the Sunny Home Manager to Energy Meters with S0 Interface

Additionally required material (not included in the scope of delivery):

☐ 1 cable with at least 2 insulated conductors

Cable requirements:

☐ Conductor cross-section: 0.2 mm^2 to 1.5 mm^2

☐ Maximum cable length: 30 m

Requirements for energy meters with an S0 interface:

☐ S0 interface in accordance with DIN EN 62053-31, class A

☐ Bidirectional meters with an S0 interface must be equipped with two S0 interfaces.

☐ Energy meters with an S0 interface must output values netted across the line phases at the S0 interface. If necessary, contact the manufacturer of the energy meter.

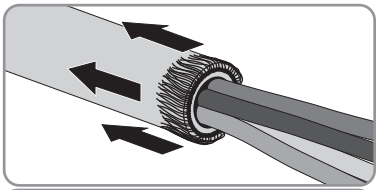
☐ Recommended pulse length: at least 20 ms

☐ Recommended pulse length: 1,000 pulses per kWh
For the function **Limitation of active power feed-in**, energy meters with an S0 interface must have the following pulse rates:

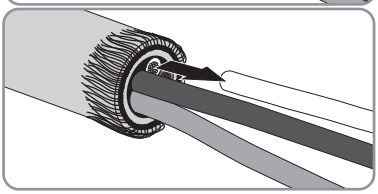
- For systems with maximum permitted grid feed-in of more than 1,500 W: at least 250 pulses per kWh
- For systems with maximum permitted grid feed-in of less than 1,500 W: at least 500 pulses per kWh

Procedure

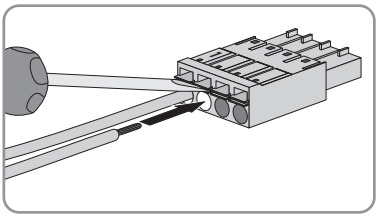
1. Remove 4 cm of cable sheath.
2. Shorten the cable shield to approximately 5 mm. Fold the surplus cable shield back onto the cable sheath.



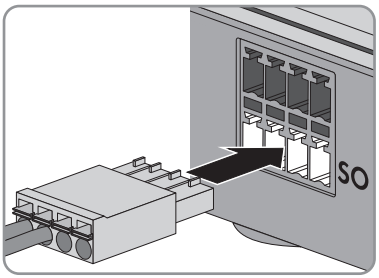
3. Shorten unused insulated conductors flush with the cable sheath.



4. Strip the insulated conductors by 6 mm.
5. Release the pin connectors of the four-pole plug with a screwdriver. Insert the insulated conductors into the contact pins 1 and 2 of the four-pole plug.



6. Write down the color of the insulated conductors.
7. Connect the four-pole plug to the pin connector assigned to the corresponding energy meter. Insert the four-pole plug into the lower contact pin row:
   - For purchased electricity meters, insert the four-pole plug into the pin connector **Meter 1**.
   - For feed-in meters, insert the four-pole plug into the pin connector **Meter 2**.
   - For PV production meters, insert the four-pole plug into the pin connector **Meter 3**.



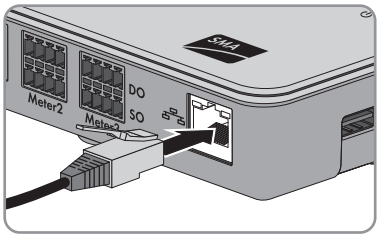
   - For bidirectional meters for grid feed-in and purchased electricity, insert the connection plug of the cable for purchased electricity into the pin connector **Meter 1**. Insert the connection plug of the cable for grid feed-in into the pin connector **Meter 2**.
8. Connect the end of the cable to the energy meter. Observe the polarity of the insulated conductors.
9. Use the labels provided to mark each cable with the pin connector and energy meter to which it is assigned.
10. Note the S0 pulses per kWh of each energy meter. This will facilitate the meter configuration in Sunny Portal.

7.3 Replacing Energy Meters

1. Decommission the energy meter to be replaced (see energy meter manual).
2. If the SMA Energy Meter is replaced, note the serial number of the new SMA Energy Meter. The serial number is to be found on the type label of the SMA Energy Meter.
3. When replacing the SMA Energy Meter, or if the new energy meter with S0 interface has a different pulse rate from the old energy meter with S0 interface, configure the new energy meter in Sunny Portal (see user manual of the Sunny Home Manager).

7.4 Connecting the Sunny Home Manager to the Router

1. Connect the network cable to the network terminal of the Sunny Home Manager. If using a different network cable to that supplied with the delivery, the cable must be suitable for connection to the Sunny Home Manager (for cable requirements, see Section 4.1.4).



2. Connect the other end of the network cable to the router.

7.5 Connecting a Device to be Controlled via a Data Exchange Protocol

Devices controlled by the Sunny Home Manager via a data exchange protocol are not connected to SMA radio-controlled sockets, but are connected to the Sunny Home Manager via the local network. The Sunny Home Manager communicates with the devices either directly or via a corresponding gateway. For the purposes of load control, the Sunny Home Manager sends the devices recommendations on their power requirement or operating mode.

Requirements:

☐ The device must support the data exchange protocol defined by SMA Solar Technology AG.

☐ The Sunny Home Manager must be located in the same local network as the device.

Additionally required material (not included in the scope of delivery):

☐ 1 network cable (for cable requirements, see Section 4.1.4)

Procedure

1. Connect the network cable to the device (see device manual).
2. Connect the other end of the network cable to the router or network switch.

☑ The device is automatically recognized by the Sunny Home Manager. Once you have added the device to the Sunny Home Manager system via the configuration wizard in Sunny Portal, the Sunny Home Manager will control the device automatically via the defined data exchange protocol.

7.6 Supplying the Sunny Home Manager with Voltage

7.6.1 Supplying the Sunny Home Manager with Voltage via the Plug-In Power Supply

1. Connect the DC plug of the plug-in power supply to the **Power** connector of the Sunny Home Manager.
2. Plug the plug-in power supply into the outlet.

   ☑ The status LED of the Sunny Home Manager first glows red, and then flashes red. After approximately two minutes, the status LED intermittently flashes green and orange. The Sunny Home Manager is connected to Sunny Portal.

   ✖ The status LED is not intermittently flashing green and orange?

   It is possible that the Sunny Home Manager is not correctly connected to the router.

   - Ensure that the Sunny Home Manager is correctly connected to the router (see Section 7.4).

7.6.2 Supplying the Sunny Home Manager with Voltage via the Top-Hat Rail Power Supply

As an alternative to the plug-in power supply, you can supply the Sunny Home Manager with voltage using a top-hat rail power supply.

Additionally required accessories (not included in scope of delivery):

- ☐ Top-hat rail power supply
- ☐ 1 AC connection cable
- ☐ 1 cable for connecting the top-hat rail power supply to the Sunny Home Manager

Requirements for the top-hat rail power supply:

- ☐ Output voltage DC: 12 V (tolerance: ± 10%)
- ☐ Nominal current: 1.5 A

Requirements for the cable used for connection of the top-hat rail power supply to the Sunny Home Manager:

- ☐ Conductor cross-section: 0.2 mm^2 to 1.5 mm^2
- ☐ Cable with at least 2 insulated conductors

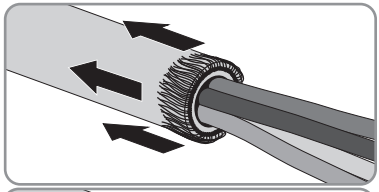
Procedure

1. Mount the top-hat rail power supply on the top-hat rail (see manual of the top-hat rail power supply).
2. Connect the cable for the Sunny Home Manager to the top-hat rail power supply (see manual of the top-hat rail power supply). Shorten the unused insulated conductors flush with the cable shield.

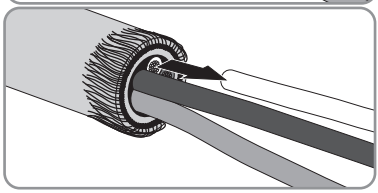
3. Write down the color of the insulated conductors:

Terminals on the top-hat rail power supply	Insulated conductor color
DC+	
DC −	

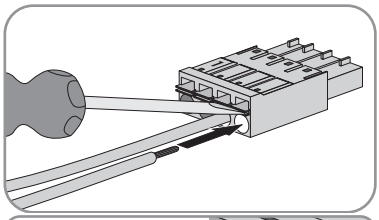
4. Remove 4 cm of the cable sheath at the other end of the cable.
5. Shorten the cable shield to approximately 5 mm. Fold the surplus cable shield back onto the cable sheath.



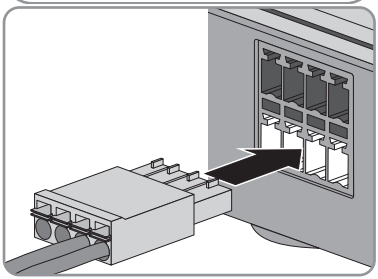
6. Shorten unused insulated conductors flush with the cable sheath.



7. Strip the insulated conductors by 6 mm.
8. Release the pin connectors of the four-pole plug with a screwdriver. Insert the DC − insulated conductor into contact pin 3 and the DC+ insulated conductor into contact pin 4 of the four-pole plug.



9. If no energy meter is connected to the four-pole plug, insert the four-pole plug into the lower contact pin row of any one of the pin connectors on the Sunny Home Manager.
10. If an energy meter is connected to the four-pole plug, insert the four-pole plug into the lower contact pin row of the pin connector assigned to the given energy meter (see Section 7.1 "Connection Area", page 34).



11. Connect the AC connection cable to the top-hat rail power supply (see manual of the top-hat rail power supply).

12. ⚠ DANGER

Danger to life due to electric shock

Lethal voltages are present at the connection point of the utility grid.

- Disconnect the connection point from the utility grid via the disconnector (e.g. in the distribution board).

13. Connect the other end of the AC connection cable to the electricity supply.
14. Connect the connection point to the utility grid.

☑ The status LED first glows red and then flashes red. After approximately two minutes, the status LED intermittently flashes green and orange.

✖ The status LED is not intermittently flashing green and orange?

It is possible that the Sunny Home Manager is not correctly connected to the router.

- Ensure that the Sunny Home Manager is correctly connected to the router (see Section 7.4).

8 Commissioning

8.1 Establishing a Connection to Sunny Portal

Requirements:

- ☐ DHCP must be activated on the router (see router manual). If your router does not support DHCP, you can configure the static network settings on the Sunny Home Manager using the Sunny Home Manager Assistant (see Section 9.4, page 62).
- ☐ The Sunny Home Manager must be connected to the router (see Section 7.4, page 41).
- ☐ The Sunny Home Manager must be supplied with voltage (see Section 7.6, page 42).

The Sunny Home Manager automatically establishes a connection to Sunny Portal. As soon as the status LED is intermittently flashing green and orange (after approximately two minutes), you can register the Sunny Home Manager in Sunny Portal (see Section 8.2, page 45).

If the status LED is continuously flashing red, the Sunny Home Manager cannot automatically establish the connection to Sunny Portal. This is the case, for example, if there is a proxy server in your network or if your router does not support DHCP.

- If the status LED is continuously flashing red or you have to manually configure the IP address in your network, use the Sunny Home Manager Assistant (see Section 9.4, page 62).

8.2 Registering in Sunny Portal

Sunny Portal is the user interface of the Sunny Home Manager. Therefore, you must register the Sunny Home Manager in Sunny Portal.

Requirements:

- ☐ The status LED of the Sunny Home Manager must be intermittently flashing green and orange (see Section 8.1 "Establishing a Connection to Sunny Portal", page 45).
- ☐ The PV system must be in operation.
  - The same NetID must be set for all BLUETOOTH devices.
  - The BLUETOOTH PV system must be in operation.
  - The Speedwire devices must be in operation and connected to the Sunny Home Manager via a router/network switch.
  - NetID **0** must be set for Speedwire devices with integrated BLUETOOTH interface.

Procedure

- Start the PV System Setup Assistant.
- Register as a new user in the Sunny Portal.

  or

  Log in to Sunny Portal as an existing user.
- Register Sunny Home Manager system in Sunny Portal.
- Configure the energy meter.
- Enter the PV system data.

Tip: If you have SMA radio-controlled sockets, insert these into outlets and configure the NetID of the PV system (see Section 5.1.3 "Configuring the NetID on the SMA Radio-Controlled Socket", page 29). This will enable you to register the SMA radio-controlled sockets together with the Sunny Home Manager.

Starting the PV System Setup Assistant

The PV System Setup Assistant is a step-by-step guide of the processes required for user registration and the registration of Sunny Home Manager systems in Sunny Portal.

Procedure

1. Open **www.SunnyPortal.com** and select [**PV System Setup Assistant**].

   or

   Go to **www.SunnyPortal.com/Register**.

   ☑ The PV System Setup Assistant opens.
2. Select [**Next**].

☑ The page **User registration** opens.

Registering as a New User in Sunny Portal

1. Activate the field **I am not yet registered** and select [**Next**].
2. Enter the necessary data for registration.
3. Select [**Next**].

   ☑ After a few minutes you will receive an e-mail containing a link and your access data to Sunny Portal.

   ✖ No e-mail received from Sunny Portal?

   The e-mail may have been automatically redirected to your spam mail folder.

   - Check whether the e-mail is in the spam mail folder.

   You may have stated a different e-mail address.

   - Check whether the e-mail was sent to another e-mail address.
   - If the other e-mail address is an unknown address, restart the PV System Setup Assistant and register as a new user again.
4. Follow the link in the confirmation e-mail within 24 hours.

   ☑ Sunny Portal opens a separate window to confirm successful registration.

   - Select [**Next**].
   - The page **Select PV system** opens.

Logging in as an Existing User in Sunny Portal

Requirement:

☐ You must already have one PV system in Sunny Portal.

Procedure

1. Select the field **I am already registered in Sunny Portal**.
2. Enter the e-mail address and the Sunny Portal password in the fields **E-mail address** and **Password**.
3. Select [**Next**].

☑ The page **Select PV system** opens.

Registering a Sunny Home Manager System in Sunny Portal

All devices with an identical password and NetID form a system. Therefore, a uniform password for all devices in a system is called a system password. The system password is the same as the device password for the user group **Installer**.

Requirements:

☐ The BLUETOOTH LED on the inverter or BLUETOOTH Piggy-Back must be glowing blue.

☐ Either a uniform user-defined system password or the factory-set standard password **1111** must be set on all BLUETOOTH and Speedwire devices for the user group **Installer**. If necessary, set a uniform system password for all BLUETOOTH and Speedwire devices (see Sunny Explorer Help).

Procedure

1. Activate the field **Create a new PV system** and enter a system name (e.g. **My Sunny Home Manager system**).
2. In the window for entering the system password, enter the system password of the user role **Installer**:
   - If the standard password **1111** is still set on all devices for the user group **Installer**, enter a new system password.
   - If a different uniform password has already been set on all devices, enter this password as the system password.
   - If a uniform password has not been set on all devices, set a uniform password for the user group **Installer** using the Sunny Explorer software (see Sunny Explorer help) and enter this password in the PV System Setup Assistant as the system password.
3. Enter the system password again in the field **Repeat password**.
4. Select [**Next**].

   ☑ The page **Select devices** opens.
5. Enter the serial number of the Sunny Home Manager in the **PIC** field. Enter the registration ID of the Sunny Home Manager in the **RID** field.

6. Select [**Identify**].
   ☑ Sunny Portal searches for the Sunny Home Manager with the corresponding serial number and registration ID. The PV System Setup Assistant displays the correct Sunny Home Manager with a green tick.
   ✖ The PV System Setup Assistant cannot find any Sunny Home Manager with the entered serial number and registration ID?
   - See troubleshooting (see Section 9 "Troubleshooting", page 52).
7. Select [**Next**].
   ☑ The Sunny Home Manager now searches for BLUETOOTH devices within range and for devices in the local network. After a maximum of ten minutes the PV System Setup Assistant lists the serial numbers of any available BLUETOOTH devices and devices in the local network.
   ✖ The PV System Setup Assistant is unable to establish a connection to the Sunny Home Manager, the BLUETOOTH devices within range or the Speedwire devices?

   or

   ✖ The PV System Setup Assistant lists none or not all of the BLUETOOTH devices or Speedwire devices in your PV system?
   - Select [**Refresh**]. If the PV System Setup Assistant continues to list none or not all of the BLUETOOTH and Speedwire devices, see troubleshooting (see Section 9.3 "Errors during Registration in Sunny Portal", page 56).

   or

   ✖ The PV System Setup Assistant lists own and third-party devices?
   - See troubleshooting (see Section 9.3 "Errors during Registration in Sunny Portal", page 56).
8. Activate the checkboxes of the devices you wish to add to the Sunny Home Manager system. Tip: You can identify devices using the previously noted serial numbers.
9. Select [**Add**] to add the devices to the Sunny Home Manager system immediately.
   ☑ The system password is transferred to the devices. This process can take several minutes. The devices are then shown with a green tick:✔.
   ✖ Some devices are shown with the warning symbol:⚠?

   Sunny Home Manager cannot access the devices. You may have entered an invalid system password or the connection to the devices could not be established.
   - See troubleshooting (see Section 9.3 "Errors during Registration in Sunny Portal", page 56).

   Select [**Next**].
   ☑ The window **Meter configuration** opens.

   or

10. Select [**Skip forward**] to add the devices to the Sunny Home Manager system at a later time and continue with registration. Tip: You can add the devices to the Sunny Home Manager system as new devices after registration (see user manual "SUNNY HOME MANAGER in Sunny Portal").
    ☑ The window **Meter configuration** opens.

Configuring Energy Meters

1. If energy meters are connected to the Sunny Home Manager, select the energy meter type connected to the respective meter input in the drop-down lists **Meter input 1**, **Meter input 2** and **Meter input 3**:

Connected energy meter type	Drop-down list
Energy meter with D0 Interface	• Select **D0**.
Bidirectional meter with D0 interface	• Select **D0**. • Activate the field **Bidirectional meter (consumption and feed-in)**. ☑ The area **Meter input 2** is not available.
Energy meter with S0 interface	• Select **S0**. • In the text field **S0 pulses/kWh**, specify the pulse rate of the energy meter (see energy meter manual).
SMA Energy Meter	• Select **SMA Energy Meter xxx**. The placeholder for the SMA Energy Meter serial number is **xxx**. If there are two SMA Energy Meters in the PV system, select the desired SMA Energy Meter. • Activate the checkbox **Bidirectional meter (consumption and feed-in)**.
No energy meter	• Select **no meter**.

2. Select [**Next**].
   ☑ The page **Extended PV System Properties** opens.

Entering PV System Data

1. Enter the PV system data.
2. Select [**Next**].
   ☑ The PV System Setup Assistant shows a summary of your entered data.
3. Select [**Finish**].
   ☑ Sunny Portal confirms successful registration of the Sunny Home Manager system in a separate window.
4. To change to the Sunny Home Manager system, select [**To the PV system**].
   ☑ The Sunny Home Manager system opens.
5. Enter the system properties (see user manual "Sunny Home Manager in Sunny Portal").

8.3 Setting the Operating Mode of the SMA Radio-Controlled Socket

You can configure the operating mode of the SMA radio-controlled socket via the touch key on the SMA radio-controlled socket or via Sunny Portal (see user manual "SUNNY HOME MANAGER in Sunny Portal").

Operating mode	Explanation
Automatic	The SMA radio-controlled socket is controlled by the Sunny Home Manager. Depending on the current control command of the Sunny Home Manager, the SMA radio-controlled socket is either switched on or off in this mode. • On: The connected load can draw electric current. • Off: The connected load cannot draw electric current.
Manually switched on	The SMA radio-controlled socket is switched on. The connected load can draw electric current. The SMA radio-controlled socket is not controlled by the Sunny Home Manager.
Manually switched off	The SMA radio-controlled socket is switched off. The connected load cannot draw electric current. The SMA radio-controlled socket is not controlled by the Sunny Home Manager.

Requirements:

☐ The SMA radio-controlled socket must be inserted in an outlet.

☐ The upper horizontal LED must be glowing orange or green.

Procedure

1. **Requirement for "Automatic" mode**

   You can only set **Automatic** mode if you have configured the SMA radio-controlled socket for the connected load in Sunny Portal.

   • If the SMA radio-controlled socket was not registered together with the Sunny Home Manager in Sunny Portal, add the SMA radio-controlled socket to the system as a new device (see user manual "SUNNY HOME MANAGER in Sunny Portal").

2. Keep tapping the touch key until the upper horizontal LED displays the desired operating mode:

Operating mode	LED status
Manually switched on	Glowing green
Automatic	Off (subsequently flashing orange)
Manually switched off	Glowing orange

3. To adopt the operating mode, wait approximately one second. Do not tap the touch key.
   ☑ After approximately two seconds, the SMA radio-controlled socket audibly switches to the selected operating mode.

9 Troubleshooting

9.1 Errors in the Sunny Home Manager

9.1.1 States of All LEDs

LED status	Cause and corrective measures
Off	The Sunny Home Manager does not have voltage supply. **Corrective measures:** • Supply the Sunny Home Manager with voltage (see Section 7.6).

9.1.2 States of the Status LED

LED status	Cause and corrective measures
Glowing red	The system is starting. **Corrective measures:** • Do not disconnect the Sunny Home Manager from the voltage supply.
	If the status persists: Error. **Corrective measures:** • Disconnect the Sunny Home Manager from the voltage supply and then reconnect (see Section 7.6). • If the status persists, contact the SMA Service Line.
Flashing red	The Sunny Home Manager cannot establish a connection to Sunny Portal. It is possible that there is a proxy server in your network or DHCP is not activated in your router. **Corrective measures:** • Use the Sunny Home Manager Assistant (see Section 9.4).
	The Sunny Home Manager cannot establish a connection to Sunny Portal. It is possible that the Sunny Home Manager is not correctly connected to the router. **Corrective measures:** • Ensure that the Sunny Home Manager is correctly connected to the router (see Section 7.4). • If the Sunny Home Manager is correctly connected to the router and the status LED continues to flash red, perform a complete reset of the Sunny Home Manager (see Section 9.6).

LED status	Cause and corrective measures
Flashing green and orange intermittently	The Sunny Home Manager is connected to Sunny Portal, but is not yet registered in Sunny Portal. **Corrective measures:** • Register the Sunny Home Manager in Sunny Portal (see Section 8.2).
Flashing green	The Sunny Home Manager is connected to the devices of the PV system and to Sunny Portal. There is an event type **Error** present in at least one device or at least one device is not connected to the Sunny Home Manager (event type **Disturbance**). **Corrective measures:** • Call up the event in the system log book of Sunny Portal (see user manual "Sunny Home Manager in Sunny Portal"). In the case of an event type **Error**, look up the meaning of the error in the manual of the affected device.
Glowing orange	The Sunny Home Manager has not been connected to Sunny Portal for at least ten minutes. There are no new events in the cache of the Sunny Home Manager. **Corrective measures:** • If the status persists, check the connection status using the Sunny Home Manager Assistant (see Section 9.4, page 62).

LED status	Cause and corrective measures

Flashing red and orange intermittently	The Sunny Home Manager has not been connected to Sunny Portal for at least ten minutes.
	There is an event type **Error** present in at least one device or at least one device is not connected to the Sunny Home Manager (event type **Disturbance**).
	The event and the data read out cannot be sent to Sunny Portal. The event and the data are cached in the Sunny Home Manager.
	Corrective measures:
	• Ensure that the Sunny Home Manager is correctly connected to the router (see Section 7.4).
	• Check whether the Internet connection is functioning:
	  • In the web browser address line, enter e.g. **www.SMA-Solar.com** and confirm with the [**Enter**] key.
	  • If the Internet connection is permanently impaired, ensure that the router is functioning correctly. If necessary, contact the Internet service provider and read off the device errors present on the inverter display (see inverter manual).
	• Once the Sunny Home Manager is reconnected to Sunny Portal, call up the event in the Sunny Portal system log book (see user manual "SUNNY HOME MANAGER in Sunny Portal").

9.1.3 States of the BLUETOOTH LED

LED status	Cause and corrective measures
Flashing blue	The BLUETOOTH connection to the devices of the PV system is critical. **Corrective measures:** • If possible, select a different mounting location and check the connection. • If no other mounting location is possible, use an SMA BLUETOOTH Repeater or an SMA radio-controlled socket. This will extend the wireless range of your BLUETOOTH network.

LED status	Cause and corrective measures
Off	There is no BLUETOOTH connection to the devices of the PV system. **Corrective measures:** • Commission the SMA BLUETOOTH devices. • For inverters with BLUETOOTH Piggy-Back: wait until the inverters switch on. It is possible that the NetID configured on the Sunny Home Manager is not identical with that of the PV system devices. **Corrective measures:** • Ensure that the same NetID is configured on the Sunny Home Manager and the devices of the PV system (see Section 5.1.3, page 29). There may already be more than one additional master in your BLUETOOTH network (e.g. Sunny Beam and computer with Sunny Explorer). As a result, the Sunny Home Manager cannot establish a connection to the BLUETOOTH devices. **Corrective measures:** • Together with the Sunny Home Manager, use a maximum of one additional master in the BLUETOOTH network.

9.2 Errors in the SMA Radio-Controlled Socket

States of the Lower Horizontal LED

LED status	Cause and corrective measures
Flashing blue	The BLUETOOTH connection to the Sunny Home Manager is critical. **Corrective measures:** • If possible, select a different mounting location. • If no other mounting location is possible, use an SMA BLUETOOTH Repeater or an additional SMA radio-controlled socket. This will extend the wireless range of your BLUETOOTH network.

LED status	Cause and corrective measures
Off	There is no BLUETOOTH connection between the SMA radio-controlled socket and the Sunny Home Manager. **Corrective measures:** • Ensure that the Sunny Home Manager is supplied with voltage (see Section 7.6). • Ensure that the same NetID is configured on the SMA radio-controlled socket and the Sunny Home Manager (see Section 5.1.3, page 29). • If possible, select a different mounting location. • If no other mounting location is possible, use an SMA BLUETOOTH Repeater or an additional SMA radio-controlled socket. This will extend the wireless range of your BLUETOOTH network.

9.3 Errors during Registration in Sunny Portal

Problem	Cause and corrective measures
The PV System Setup Assistant cannot establish a connection to the Sunny Home Manager.	It is possible that the Sunny Home Manager is not correctly connected to the router. **or** It is possible that the Sunny Home Manager does not have voltage supply. In this case, all LEDs on the Sunny Home Manager will be off. **Corrective measures:** • Ensure that the Sunny Home Manager is correctly connected to the router (see Section 7.4). • Ensure that the Sunny Home Manager is supplied with voltage (see Section 7.6, page 42). • Contact the SMA Service Line if the Sunny Home Manager is correctly connected to the router and is supplied with voltage but all LEDs remain off.
The PV System Setup Assistant lists none or not all of the BLUETOOTH devices in your PV system.	The NetID of the PV system may not be configured on certain devices. **Corrective measures:** • Ensure that the NetID of the system is set on all devices.

Problem	Cause and corrective measures
The PV System Setup Assistant lists none or not all of the BLUETOOTH devices in your PV system.	The wireless connection of several devices may be disturbed by ambient conditions. **Corrective measures:** • Ensure that the connection quality for the BLUETOOTH devices is at least "good" (see BLUETOOTH device manuals). • If the connection quality is not at least "good", use a BLUETOOTH repeater or SMA radio-controlled socket. This will extend the wireless range of your BLUETOOTH network.
	Inverters with BLUETOOTH Piggy-Back shut down overnight. For this reason, the Sunny Home Manager cannot establish a connection to these inverters during this time. **Corrective measures:** • Select [**Skip forward**] and continue with registration. After registration, add devices to the system as new devices when there is sufficient irradiation (see user manual "SUNNY HOME MANAGER in Sunny Portal").
	The devices of your PV system may not be commissioned. In this case, the Sunny Home Manager cannot establish a connection to these devices. **Corrective measures:** • Commission the devices.
	Insufficient radio range of the inverter with BLUETOOTH communication interface. **Corrective measures:** • Use SMA BLUETOOTH Repeater or SMA radio-controlled socket. This will extend the wireless range of your BLUETOOTH network.
	Insufficient transmission power of the inverter with SMA BLUETOOTH Piggy-Back Plus **Corrective measures:** • Use the antenna extension add-on kit "ANTEXTKIT25-10".

Problem	Cause and corrective measures
The PV System Setup Assistant lists none or not all of the BLUETOOTH devices in your PV system.	Sunny Home Manager is too far from your PV system or the BLUETOOTH connection is interrupted. This could be due to walls or ceilings that absorb the radio waves. **Corrective measures:** • Mount the Sunny Home Manager closer to a device in your system. If this is not possible, use SMA BLUETOOTH Repeater, SMA BLUETOOTH Repeater Outdoor or SMA radio-controlled socket with BLUETOOTH. This bridges the dead zone.

Problem	Cause and corrective measures
The PV System Setup Assistant lists none or not all of the new SMA devices that are connected via Speedwire.	It is possible that the SMA device is not correctly connected to the router or is not supplied with voltage. **Corrective measures:** • Ensure that the SMA device is correctly connected to the router and supplied with voltage (see manual of the SMA device).
	The SMA device is already registered in Sunny Portal via Webconnect. **Corrective measures:** • Delete the SMA device from the Webconnect system or deactivate the data reception of the device in the Webconnect system.
	For Speedwire devices with integrated BLUETOOTH interface: It is possible that the communication via BLUETOOTH is not deactivated. **Corrective measures:** • Set NetID **0** on the Speedwire device with BLUETOOTH interface. This deactivates communication via BLUETOOTH.
	The SMA device is no longer in the same local network as the Sunny Home Manager. **Corrective measures:** • Connect the SMA device to the same router/network switch as the Sunny Home Manager.

Problem	Cause and corrective measures
The PV System Setup Assistant lists none or not all of the new SMA devices that are connected via Speedwire.	The network cable that connects the SMA device to the router/ network switch is not suitable for 100 MBit/s. **Corrective measures:** • Use a network cable suitable for Speedwire (for the network cable requirements, see the manual of the Speedwire device).
	DHCP is not activated in your router. **Corrective measures:** • Activate DHCP in the router. • If your router does not support DHCP, configure the static network settings on the Speedwire device using SMA Connection Assist. You can obtain the SMA Connection Assist software free of charge from the download area at www.SMA-Solar.com.
	The router/network switch used in the network deactivates the LAN ports when they appear to be inactive in order to save energy. As a result, it is not possible to establish any connection to the SMA device. **Corrective measures:** • Configure the router/network switch so that the LAN ports are not deactivated.
	The network switch used in the network uses IGMP snooping. This means that the connection to the SMA device is disconnected if it appears to be inactive and cannot be subsequently restored. **Corrective measures:** • Deactivate the IGMP snooping function in the network switch.
	The firewall may not have been set up correctly. **Corrective measures:** • Enable ports 9523 and 3478 in the firewall (see firewall manual).
	The firewall or IP filter may not have been set up correctly. **Corrective measures:** • Adjust firewall or IP filter settings (see firewall or router manual).

Problem	Cause and corrective measures
The PV System Setup Assistant lists own and third-party devices.	A different BLUETOOTH system within radio range of the Sunny Home Manager is using the same NetID as your BLUETOOTH system. **Corrective measures:** • Find a free NetID for your system using Sunny Explorer (see Sunny Explorer help). • Adjust the new NetID in all devices.
The PV System Setup Assistant cannot find a Sunny Home Manager with the serial number and registration ID entered.	The serial number and/or the registration ID may have been entered incorrectly. **Corrective measures:** • Ensure that the entries are correct.
	It is possible that the registration procedure was previously initiated but not completed. **Corrective measures:** • Perform a complete reset of the Sunny Home Manager (see Section 9.6).
	It is possible that the Sunny Home Manager is not correctly connected to the router. **Corrective measures:** • Ensure that the Sunny Home Manager is correctly connected to the router (see Section 7.4).
	DHCP is possibly not activated on your router or there is a proxy server in your network. For this reason, Sunny Home Manager cannot establish a connection to Sunny Portal. **Corrective measures:** • Establish the connection to Sunny Portal using the Sunny Home Manager Assistant (see Section 9.4, page 62).
	The Sunny Home Manager has already been assigned to a system in Sunny Portal with your e-mail address. **Corrective measures:** • Delete the Sunny Home Manager from the system (see user manual "SUNNY HOME MANAGER in Sunny Portal"). **or** • Re-register the Sunny Home Manager with the PV System Setup Assistant (see Section 9.7, page 64).

Problem	Cause and corrective measures
The PV System Setup Assistant cannot find a Sunny Home Manager with the serial number and registration ID entered.	The Sunny Home Manager is assigned to a different system in Sunny Portal, for instance, if you have bought the Sunny Home Manager second-hand. **Corrective measures:** • If possible, contact the previous owners and ask them to delete the Sunny Home Manager system in Sunny Portal. **or** • Contact the SMA Service Line.
After you have entered the system password, some devices are shown with a warning symbol in the PV System Setup Assistant.	The devices with warning symbols are inverters with BLUETOOTH Piggy-Back. These inverters switch off after dark. For this reason, the Sunny Home Manager cannot access the inverters at this time. **Corrective measures:** 1. Select [**Skip forward**] in the PV System Setup Assistant and finish registration without selecting the inverters. 2. Once there is daylight and the inverters are switched on, log in to Sunny Portal and add the inverters as new devices to the Sunny Home Manager system using the configuration wizard (see user manual "SUNNY HOME MANAGER in Sunny Portal").
	There is a different installer password configured in the devices with warning symbols. **Corrective measures:** 1. Select [**Skip forward**] in the PV System Setup Assistant and finish registration without selecting the devices. 2. Set a uniform installer password for all devices using the Sunny Explorer software (see Sunny Explorer help). 3. If you do not know the password set on each device, apply for a Personal Unlocking Key (PUK) for each device from the SMA Service Line. 4. Use Sunny Explorer to enable each device with the corresponding PUK. Then set a uniform installer password in all devices (see Sunny Explorer Help). 5. Log in to Sunny Portal and add the devices to the Sunny Home Manager system as new devices using the configuration wizard (see user manual "SUNNY HOME MANAGER in Sunny Portal").

Problem	Cause and corrective measures
While the PV System Setup Assistant is performing the device search, the status LED of the Sunny Home Manager first flashes red for one to two minutes . After this, the status LED glows green again.	Device detection takes a few minutes longer. **Corrective measures:** • No measures are required.

9.4 Using the Sunny Home Manager Assistant

The Sunny Home Manager Assistant will help you configure the Sunny Home Manager for your network if it does not automatically connect to Sunny Portal.

In addition, you can use the Sunny Home Manager Assistant to display the latest connection status to Sunny Portal, the network settings and the connected BLUETOOTH devices, and save these as a log file. If servicing should be necessary, the SMA Service Line can use this log file to analyze the problem.

Procedure

1. Use a network cable to connect the computer to the router to which the Sunny Home Manager is connected.
2. In the download area at www.SMA-Solar.com, download the Sunny Home Manager Assistant for the operating system of your computer.

   or

   Insert the CD provided into the drive of your computer.
3. Start the Sunny Home Manager Assistant by double-clicking on the file name.
4. Follow the instructions given in the Sunny Home Manager Assistant.

9.5 Error in the Sunny Home Manager Assistant

Problem	Cause and corrective measures
The Sunny Home Manager Assistant does not detect a Sunny Home Manager.	The computer with the Sunny Home Manager Assistant is not connected to the router to which the Sunny Home Manager is connected. **Corrective measures:** • Connect the computer with the Sunny Home Manager Assistant to the router to which the Sunny Home Manager is connected.

9.6 Resetting the Sunny Home Manager

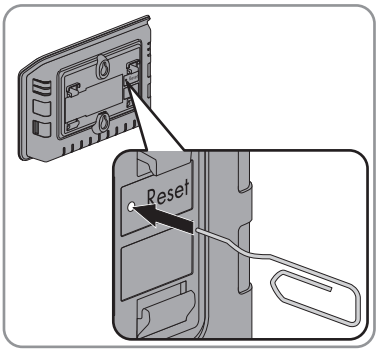
The reset button is located in a small aperture on the bottom of the Sunny Home Manager.

Depending on how long you hold down the reset button, the Sunny Home Manager is partially or completely reset.

Duration	Result	Status of the status LED and the energy consumption LED
1 to 5 seconds	☑ The network settings of the Sunny Home Manager are reset.	Flashing orange intermittently
5 to 10 seconds	The Sunny Home Manager is completely reset: ☑ All settings of the Sunny Home Manager are deleted. ☑ All cached PV system data (energy values, events, etc.) are deleted. ☑ The Sunny Home Manager redetects the BLUETOOTH devices located within range. ☑ The Sunny Home Manager must be re-registered in Sunny Portal (see Section 9.7, page 64).	Flashing red intermittently

Procedure

- Press the reset button with a sharp object (e.g. paper clip) and hold until the desired reset result has been achieved:
  - To reset the network settings of the Sunny Home Manager, press the reset button until the status LED and the energy consumption LED are intermittently flashing orange.
  - To completely reset the Sunny Home Manager, press the reset button until the status LED and the energy consumption LED are intermittently flashing red.



9.7 Reassigning the Sunny Home Manager after Resetting the Sunny Home Manager System

If you have performed a complete reset of the Sunny Home Manager (see Section 9.6), you must reassign the Sunny Home Manager to your Sunny Home Manager system in Sunny Portal. Otherwise, Sunny Portal will not accept any data from the Sunny Home Manager.

You have the following options for reassigning the Sunny Home Manager to your Sunny Home Manager system:

- Reassign the Sunny Home Manager via the PV System Setup Assistant.

  or

- Reassign the Sunny Home Manager via the Sunny Portal access (see user manual "SUNNY HOME MANAGER in Sunny Portal").

Reassigning the Sunny Home Manager to the Sunny Home Manager System via the PV System Setup Assistant

Requirement:

☐ You must be the **PV system administrator** (for user roles and user rights, see user manual "SUNNY HOME MANAGER in Sunny Portal").

Procedure

1. Open **www.SunnyPortal.com** and select the **PV System Setup Assistant**.

   or

   Go to **www.SunnyPortal.com/Register**.

   ☑ The PV System Setup Assistant opens.
2. Select [**Next**].

   ☑ The page **User registration** opens.
3. Activate the checkbox **I am already registered in Sunny Portal**.
4. Enter the e-mail address and the Sunny Portal password in the fields **E-mail address** and **Password**.
5. Select [**Next**].

   ☑ The page **Select PV system** opens.
6. Activate the field **Add or replace devices**.
7. In the line of the Sunny Home Manager system to which you would like to reassign the Sunny Home Manager, select ⇄.
8. Select [**Next**].

   ☑ The page **Select devices** opens.

9. Enter the serial number of the Sunny Home Manager in the **PIC** field. Enter the registration ID of the Sunny Home Manager in the **RID** field.

   Reading off the serial number and registration ID

   You can read off the serial number and the registration ID at the following locations:
   - On the type label at the back of the Sunny Home Manager
   - On the cover of the supplied CD

10. Select [**Identify**].
    ☑ Sunny Portal checks whether the serial number and registration ID correspond to the connected Sunny Home Manager.
    ✖ The PV System Setup Assistant cannot find any Sunny Home Manager with the serial number and registration ID?

    An error has occurred.
    - Rectify the error (see Section 9 "Troubleshooting", page 52).
11. Select [**Next**].
12. Select [**Finish**].

9.8 Resetting the SMA Radio-Controlled Socket to Default Settings

You must reset the SMA radio-controlled socket to default settings in the following cases:
- You wish to operate the SMA radio-controlled socket in a different system.
- You wish to reset the measured values of the SMA radio-controlled socket.

Procedure

1. Unplug the SMA radio-controlled socket from the outlet and then plug it back in.
   ☑ The upper horizontal LED glows red for approximately ten seconds.
2. As soon as the vertical LEDs are glowing green, press and hold the touch key for five seconds. Do not release the key until the upper horizontal LED is glowing red.
   ☑ The NetID is reset to **0**.
   ☑ The measured values are reset.
   ☑ The system password is reset to the standard password of **1111** for the user group **Installer**.

10 Decommissioning

10.1 Disassembling the Sunny Home Manager

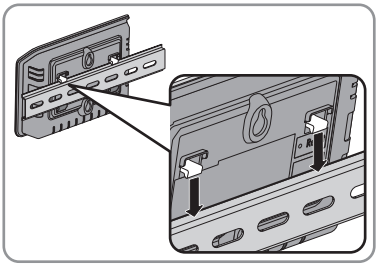
1. If the Sunny Home Manager is supplied with voltage via the plug-in power supply:
   - Pull the plug-in power supply out of the outlet.
   - Unplug the DC plug of the plug-in power supply from the **Power** terminal of the Sunny Home Manager.
2. If the Sunny Home Manager is supplied with voltage via a top-hat rail power supply:

   ⚠ DANGER

   Danger to life due to electric shock

   Lethal voltages are present at the connection point of the utility grid.

   - Disconnect the connection point from the utility grid via the disconnector (e.g. in the distribution board).
   - Unplug the connection plug of the top-hat rail power supply from the pin connector on the Sunny Home Manager.
3. Unplug the connection plugs of the energy meters from the pin connector on the Sunny Home Manager.
4. Unplug the network cable from the network terminal of the Sunny Home Manager.
5. Unplug the other end of the network cable from the router.
6. If the Sunny Home Manager is mounted on the wall, push the Sunny Home Manager upwards and remove it from the wall.
7. If the Sunny Home Manager is mounted on a top-hat rail, remove the Sunny Home Manager from the top-hat rail as follows:
   - Press the Sunny Home Manager down. To to this, tilt the lower edge of the Sunny Home Manager forwards and remove from the top-hat rail.



10.2 Packing the Sunny Home Manager/SMA Radio-Controlled Socket for Shipping

- Pack the device for shipment. Use the original packaging or packaging that is suitable for the weight and size of the device (see Section 11 "Technical Data", page 68).

10.3 Disposing of the Sunny Home Manager/SMA Radio-Controlled Socket

- Dispose of the device in accordance with the locally applicable disposal regulations for electronic waste.

11 Technical Data

11.1 Sunny Home Manager

General Data	
Status display	LEDs
Maximum length of cables to energy meters with S0 interface	30 m
Maximum length of cables to energy meters with D0 interface	15 m
Certified countries	Australia, Belgium, Germany, France, Italy, Greece, Great Britain, Canada, Luxembourg, Portugal, Spain, Czech Republic, Austria, Switzerland, USA

Mechanical Data	
Width x height x depth	170 mm x 124.5 mm x 41.5 mm
Weight	220 g

Voltage Supply	
Voltage supply	Plug-in power supply, top-hat rail power supply
DC input voltage	12 V
Maximum typical power consumption	6 W
Maximum power consumption	14.3 W

Terminals	
Speedwire/Ethernet*	RJ45
Number of 2 x 4-pole pin connectors for energy meters	3
Number of USB pin connectors**	2

* Data transfer rate 10 Mbit per second or 100 Mbit per second

** Currently without function

Ambient Conditions during Operation	
Ambient temperature*	– 25°C to +60°C
Relative humidity**	5% to 95%
Degree of protection***	IP20
Maximum altitude above MSL (Mean Sea Level)	2,000 m

* When using the Sunny Home Manager at temperatures below 0°C and exceeding 40°C: do not use the supplied plug-in power supply (see Section 11.3 "Plug-In Power Supplies", page 71). Requirements for the plug-in power supply: 12 V DC, nominal current: 1.5 A.

** non-condensing

*** in accordance with IEC 60529

Communication Interface to Other Devices	
SMA devices	BLUETOOTH, Speedwire
Devices controlled via a data exchange protocol	Ethernet
Computer	Ethernet
Sunny Portal	Ethernet

Maximum Range	
BLUETOOTH*	100 m
Ethernet	100 m

* maximum range in free-field conditions

Internal Memory	
Cache for PV system data	5 days

Number of Devices	
Maximum number of SMA devices	16
Maximum number of SMA inverters	12
Maximum number of SMA radio-controlled sockets	10
Maximum number of devices controlled via a data exchange protocol	32

11.2 SMA Radio-Controlled Socket

General Data	
Status display	LEDs
Certified countries	Belgium, Germany, France, Greece, Great Britain, Italy, Luxembourg, Austria, Portugal, Spain, Czech Republic, Switzerland
Minimum service life*	20,000 switching cycles

* when switched at full load (16 A)

Mechanical Data	
Width x height x depth	118 mm x 76 mm x 56 mm
Weight	156 g

Voltage Supply	
Voltage	100 V to 240 V
Frequency	50/60 Hz
Maximum current	16 A
Minimum power consumption	0.25 W
Maximum power consumption	1.5 W
Maximum switching power with resistive load	3,680 W
Maximum switching power with lamp load	600 W
Maximum switching power with lagging load with a displacement power factor of cos phi > 0.65	1,200 VA

Ambient Conditions during Operation	
Ambient temperature	− 5 °C to +65 °C
Relative humidity*	5% to 95%
Degree of protection**	IP20
Maximum altitude above MSL	3,000 m

* non-condensing

** in accordance with IEC 60529

Ambient Conditions for Storage/Transport	
Ambient temperature	– 25°C to +80°C
Relative humidity*	5% to 95%
Maximum altitude above MSL	3,000 m

* non-condensing

Communication Interface to Other Devices	
Sunny Home Manager	BLUETOOTH, Speedwire

Maximum Range	
BLUETOOTH*	100 m

* maximum range in free-field conditions

11.3 Plug-In Power Supplies

TaiyTech, TYT251200200UV/3000M

Mechanical Data	
Width x height x depth	92.0 mm x 58.0 mm x 41.4 mm
Weight	244 g

Voltage Supply	
Voltage	100 V AC to 240 V AC
Frequency	50/60 Hz
Maximum current	0.85 A

Ambient Conditions during Operation	
Ambient temperature	0°C to +45°C

TaiyTech, TYT251200200EU/3000M

Mechanical Data	
Width x height x depth	92.0 mm x 90.6 mm x 36.0 mm
Weight	190 g

Voltage Supply	
Voltage	100 V AC to 240 V AC
Frequency	50/60 Hz
Maximum current	0.85 A

Ambient Conditions during Operation	
Ambient temperature	0°C to +45°C

12 Accessories

You will find the corresponding accessories and spare parts for your product in the following overview. If required, you can order these from SMA Solar Technology AG or from your distributor.

Designation	Brief description	SMA order number
Optical probe	Cable with optical probe and four-pole plug for energy meters with D0 interface	HM-D0-METERADAPTER
SMA radio-controlled socket	Radio-controlled socket with SMA BLUETOOTH Wireless Technology	BT-SOCKET-10

13 Contact

If you have technical problems concerning our products, please contact the SMA Service Line. We require the following information in order to provide you with the necessary assistance:

- Serial number and software package of the Sunny Home Manager
- Serial number and firmware version of the SMA radio-controlled socket
- Name of the Sunny Home Manager system
- Type of energy meters
- Type of optical probes

Australia	SMA Australia Pty Ltd. Sydney	Toll free for Australia:	1800 SMA AUS (1800 762 287)
		International:	+61 2 9491 4200
Belgien/ Belgique/ België	SMA Benelux BVBA/SPRL Mechelen	+32 15 286 730	
Brasil	Vide España (Espanha)		
Česko	SMA Central & Eastern Europe s.r.o. Praha	+420 235 010 417	
Chile	Ver España		
Danmark	Se Deutschland (Tyskland)		
Deutschland	SMA Solar Technology AG Niestetal	Medium Power Solutions	
		Wechselrichter: Kommunikation:	+49 561 9522-1499 +49 561 9522-2499
		SMA Online Service Center: www.SMA.de/Service	
		Hybrid Energy Solutions	
		Sunny Island:	+49 561 9522-399
		PV-Diesel Hybridsysteme:	+49 561 9522-3199
		Power Plant Solutions	
		Sunny Central:	+49 561 9522-299
España	SMA Ibérica Tecnología Solar, S.L.U. Barcelona	Llamada gratuita en España:	900 14 22 22
		Internacional:	+34 902 14 24 24

France	SMA France S.A.S. Lyon	Medium Power Solutions	
		Onduleurs : Communication :	+33 472 09 04 40 +33 472 09 04 41
		Hybrid Energy Solutions	
		Sunny Island :	+33 472 09 04 42
		Power Plant Solutions	
		Sunny Central :	+33 472 09 04 43
India	SMA Solar India Pvt. Ltd. Mumbai	+91 22 61713888	
Italia	SMA Italia S.r.l. Milano	+39 02 8934-7299	
Κύπρος/ Kıbrıs	Βλέπε Ελλάδα/ Bkz. Ελλάδα (Yunanistan)		
Luxemburg/ Luxembourg	Siehe Belgien Voir Belgique		
Magyarország	lásd Česko (Csehország)		
Nederland	zie Belgien (België)		
Österreich	Siehe Deutschland		
Perú	Ver España		
Polska	Patrz Česko (Czechy)		
Portugal	SMA Solar Technology Portugal, Unipessoal Lda Lisboa	Gratuito em Portugal: Internacional:	800 20 89 87 +351 2 12 37 78 60
România	Vezi Česko (Cehia)		
Schweiz	Siehe Deutschland		
Slovensko	pozri Česko (Česká republika)		
South Africa	SMA Solar Technology South Africa Pty Ltd. Centurion (Pretoria)	08600 SUNNY (08600 78669) International:	 +27 (12) 643 1785
United Kingdom	SMA Solar UK Ltd. Milton Keynes	+44 1908 304899	
Ελλάδα	SMA Hellas AE Αθήνα	801 222 9 222 International:	 +30 212 222 9 222
България	Вижте Ελλάδα (Гърция)		

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SMA Solar Technology

www.SMA-Solar.com