NEW SUNNY ISLAND 3.0/4.4M

THE CUSTOM-FIT SOLUTION FOR ON-GRID & OFF-GRID APPLICATIONS

TABLE OF CONTENTS

SUNNY ISLAND PRODUCT PORTFOLIO

> 2 kW - 216 kW Nominal AC-Output

SUNNY ISLAND 3.0/4.4M – TECHNICAL DATA

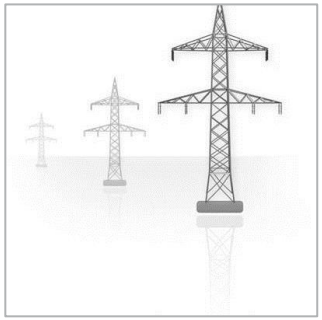
Designation	SI 3.0M-11	SI 4.4M-11
AC Power 3 s	5500 W	5500 W
AC Power 30 minutes	3000 W	4400 W
AC Continuous power	2300 W	3300 W
Voltage /Frequency	230 V / 50 Hz	
Maximum Efficiency	95.3 %	
Battery voltage	48 V	
Battery type	Li-Ion, VRLA, FLA	
Display	SRC-20	
Degree of Protection	IP54	
Operating temperature range	-25 °C / 60 °C	
Weight	44 kg	

› **Datasheet & more information www.sma.de**

SUNNY ISLAND 3.0/4.4M – POSSIBILITIES

For stand alone systems — **Off-Grid**

For self consumption systems — **On-Grid**



For battery backup systems — **On-Grid**

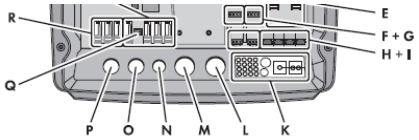
Maximum flexibility

SUNNY ISLAND 3.0/4.4M - FOCUS

- Especially developed for smaller systems, single-phase & three-phase
- For systems with a lower power range 2 -13 kW
- Based on the plattform of Sunny Island 6.0/8.0H
- For off-grid systems, battery backup systems & self-consumption systems

SUNNY ISLAND 3.0/4.4 - SIMILARITIES TO SI 6.0/8.0H

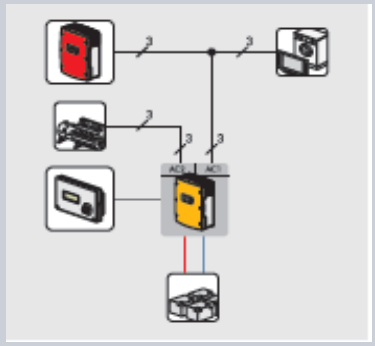
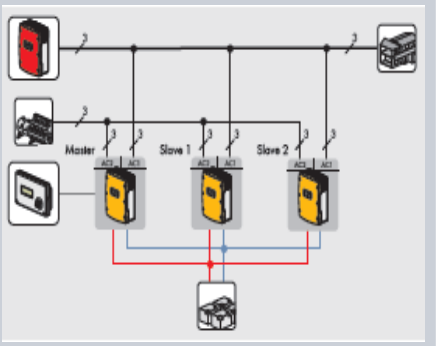
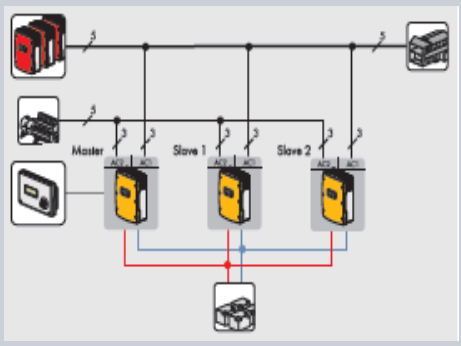
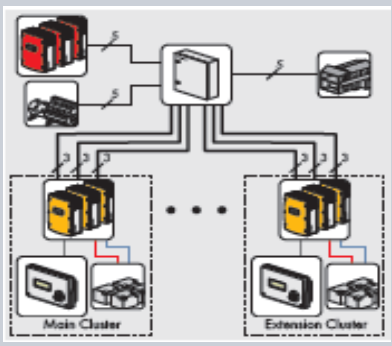
- enclosure/design
- connection area/enclosure opening
- dimensions



- technical documentation (for example Installation Guide)
- production & packaging processes
- customs tariff number (85044084)
- delivery time

- areas of application (off-grid systems, self-consumption, battery backup)
- accessories

SUNNY ISLAND 3.0/4.4 – SYSTEM CONFIGURATIONS

Single-phase	Single-phase parallel	Three-phase	Multicluster
			
Sunny Island 3.0/4.4M 6.0/8.0H	Sunny Island 6.0/8.0H	Sunny Island 3.0/4.4M (with 3 pcs.) 6.0/8.0H	Sunny Island 6.0/8.0H

- **“M” means the scope of functionality (medium power/medium functionality)**
- **Especially for small systems: single-phase & three-phase single cluster**

SUNNY ISLAND 3.0/4.4 – FOR OFF-GRID APPLICATIONS

SUNNY ISLAND 3.0/4.4 – OFF-GRID IN GENERAL

- With the battery, Sunny Island is the central component of every off-grid system.
- It creates a stable AC grid by balancing the different generators against the loads.
- At the same time, it ensures minimum battery wear.
- With more than 10,000 off-grid systems installed worldwide and 30 years of experience in developing grid-tied PV systems, SMA is the right partner to meet your needs.

SUNNY ISLAND 3.0/4.4 – OFF-GRID APPLICATIONS

- Residential systems, small commercial systems
- Backup systems
- Hybrid & storage systems
- Diesel-hybrid systems
- Small single- and three-phase systems
- Mini-grids

Flexible. Reliable. Robust.

SUNNY ISLAND 3.0/4.4 – OFF-GRID KEY COMPONENTS

Sunny Island Off-Grid System - key components:

- Sunny Island battery inverter
- PV inverter (AC-coupling)
- DC-Charger (DC-coupling)
- Battery bank
- Diesel Generator/CHP
- Monitoring via Sunny WebBox

SUNNY ISLAND 3.0/4.4 - OPTIONAL DC COUPLING

Perfectly coordinated AC and DC coupling: Sunny Island Charger 50, a universal solar charging controller, will supplement your setup with a DC-connected PV system.

> Highly robust with a degree of protection of IP65

> High-yielding thanks to active MPP tracking and efficiency > 98%

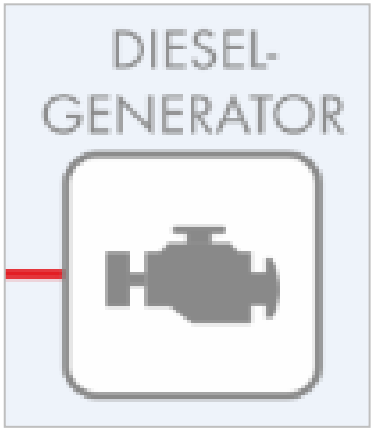
> Easy to use thanks to the coordinated configuration and operation with Sunny Island

SUNNY ISLAND 3.0/4.4 - DIESEL GENERATOR

Diesel generators are necessary in systems that are required to bridge extended periods of low sunshine or low windpower generation.

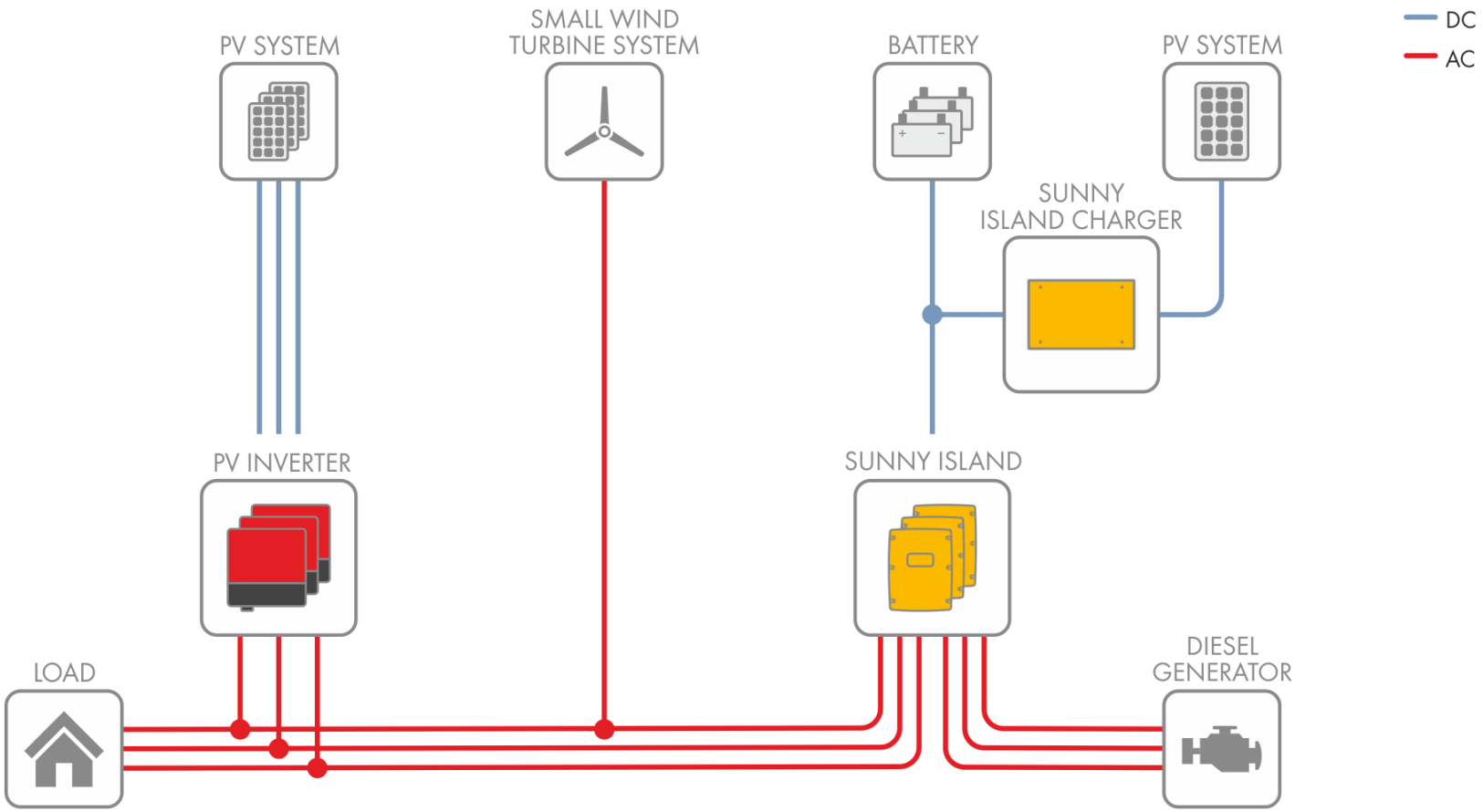
If necessary, the diesel generators can be automatically started and stopped by Sunny Island 3.0/4.4M.

Almost all single-phase and three-phase diesel generators available in the world can be connected and used. If you already have a generator, it can also be integrated into small Sunny Island systems.



› **Generator-operation of SI3.0/4.4 enables especially generators with instable voltage regulation to be used in the system.**

SUNNY ISLAND 3.0/4.4 - OFF-GRID CONFIGURATION



› Example: Three-phase off-grid system with three Sunny Island 3.0/4.4M

OFF-GRID CONFIGURATOR FOR SUNNY ISLAND

With the Off-Grid Configurator, SMA offers a professional and individual solution for the simulation and dimensioning of your off-grid system also for small applications with Sunny Island 3.0/4.4M.

From dimensioning the PV system, battery and inverter to calculating efficiency and battery life.

SUNNY ISLAND 3.0/4.4 – ACCESSORY FOR OFF GRID

Optional with the order	SMA off-grid accessory

Sunny Remote Control

BatFuse B.03

Sunny Island Charger

Sunny Web Box

Load-shedding contactor

Interface RS485 (SICOMSMA)

BatFuse B.01

Sensor Resistors

SMA Off-Grid Configurator

Battery Cable Sets
&
Adapter Cable
RS 485

LV/HRC fuse link for
BatFuse B.01/B.03
For SI 3.0 = 80 A,
for SI 4.4 = 100 A

SUNNY ISLAND 3.0/4.4 – ADVANTAGES OFF-GRID

Flexible

> For self-consumption, battery backup and off-grid systems
> For new and existing PV plants
> With all lead-acid and many lithium-ion batteries
> For single- and three-phase systems from 2 to 13 kW
> Maximum flexibility in energy generation (PV, wind, hydroelectric, CHP, diesel generators)

Reliable

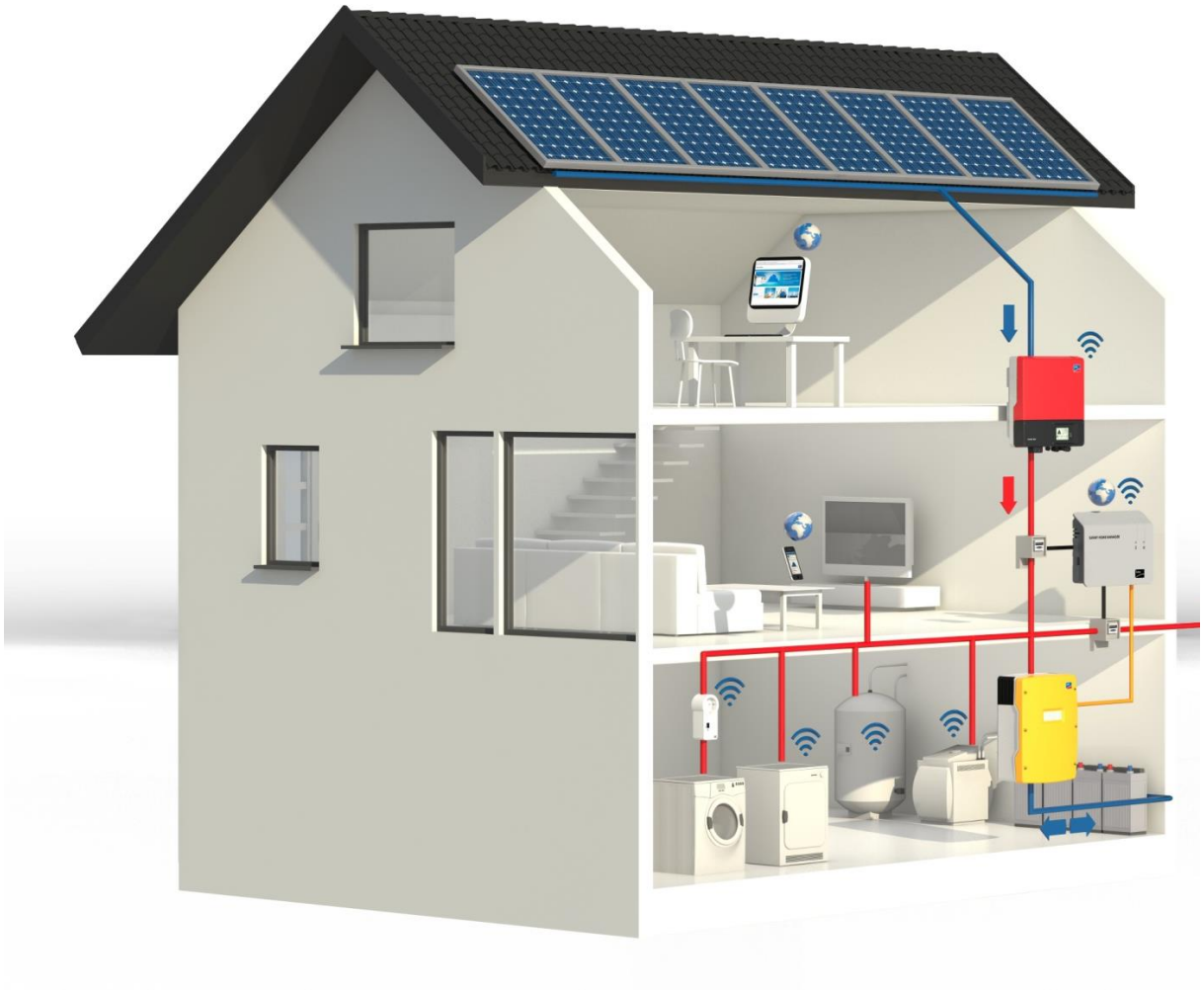
> Full battery backup function with high overload capacity
> Proven safety thanks to external certification
> Reliable operation thanks to high overload capacity
> Self-sufficient supply of remote homes and facilities

Robust

> High degree of protection IP 54
> Long battery life thanks to intelligent battery management
> Suitable for use at any location thanks to robust design and increased temperature range

Flexible. Reliable. Robust.

SUNNY ISLAND 3.0/4.4 – FOR ON-GRID APPLICATIONS



SUNNY ISLAND 3.0/4.4 – ON-GRID APPLICATIONS

- Residential systems
- Battery backup systems
- Small single- and three-phase systems
- SMA Flexible storage systems
- Smart home systems

Flexible. Efficient. Safe.

SUNNY ISLAND 3.0/4.4 – ON-GRID KEY COMPONENTS

Based on the Sunny Island battery inverter, the SMA Flexible Storage System offers maximum flexibility in terms of design, PV and storage performance, storage capacity and battery technology.

Key components:

> Intelligent energy manager

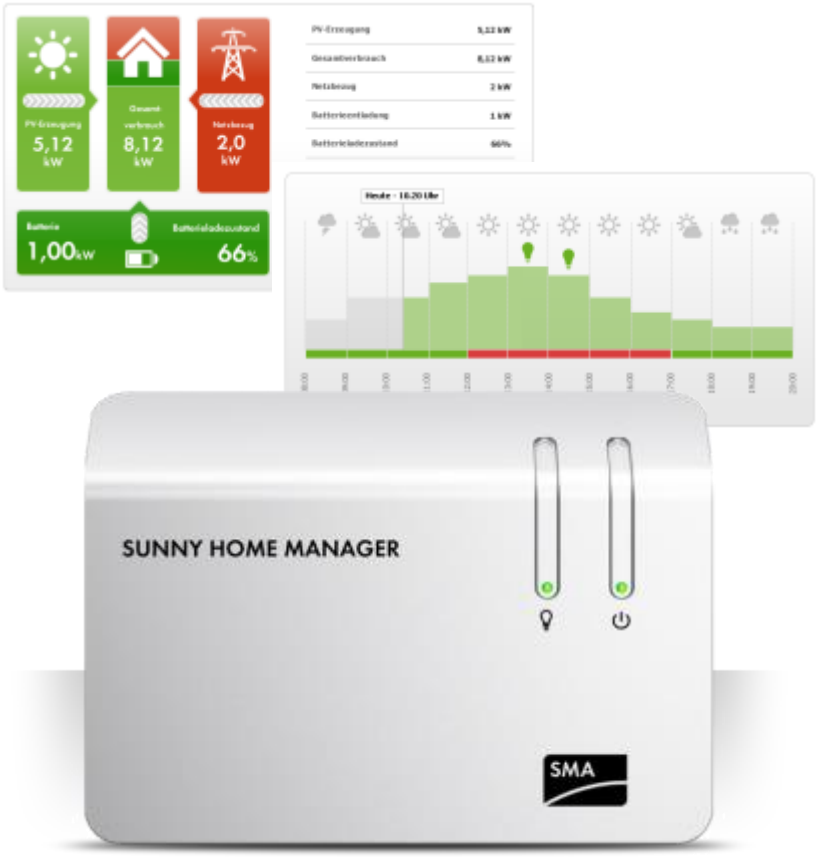
> PV inverter

> Battery inverter

> Batteries

> Powerful metering solution

SUNNY ISLAND 3.0/4.4 – SUNNY HOME MANAGER



The intelligent energy manager of the SMA Flexible Storage System:

- A live display of all energy flows via Sunny Portal and recommended actions for manual load control
- Advanced planning based on the analyzed home load profile and regular receipt of PV power generation forecasts
- Automatic control of loads with SMA radio-controlled sockets
- intelligent integration of the Sunny Island battery system

SUNNY ISLAND 3.0/4.4 – SMA ENERGY METER

The SMA Energy Meter is a powerful solution for metering purchased electricity as well as feed-in. It sends accurate-to-the-second measured values to all system components:

> High-speed data transmission via standard Ethernet cables

> Quick plug and play installation

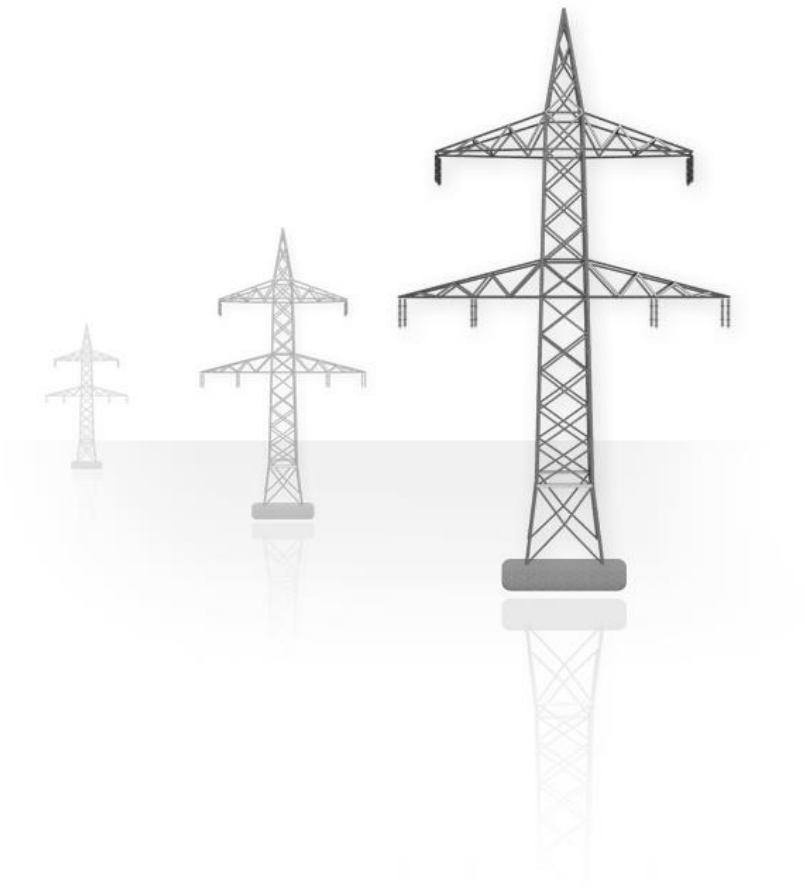
> Easily and flexibly combined with SMA Smart Home components

SUNNY ISLAND 3.0/4.4 – LOADS

All electrical loads are supplied with grid-quality electricity. Thanks to Sunny Island's high overload capacity, even critical loads with high inrush currents or simultaneous operation of multiple large loads are no problem.

In systems without a diesel generator, if there is an energy shortage, Sunny Island can automatically switch off loads
that are less important and thus permanently safeguard the supply of important loads.

SUNNY ISLAND 3.0/4.4 - UTILITY GRID



Self-consumption reduces the load on the utility grid since the operation requires correspondingly less power from the grid while also feeding less solar power into it.

If there is a surplus of (inexpensive) energy in the grid, the Sunny Home Manager will take that into account when managing loads, thus further reducing the electricity bill.

SUNNY ISLAND 3.0/4.4 - BATTERY BACKUP DISTRIBUTION

BG ETEM
Energie Textil Elektro
Medienerzeugnisse

Sunny Island 3.0M/4.4M with optional battery backup function supplies the loads with electricity even in case of power outages.

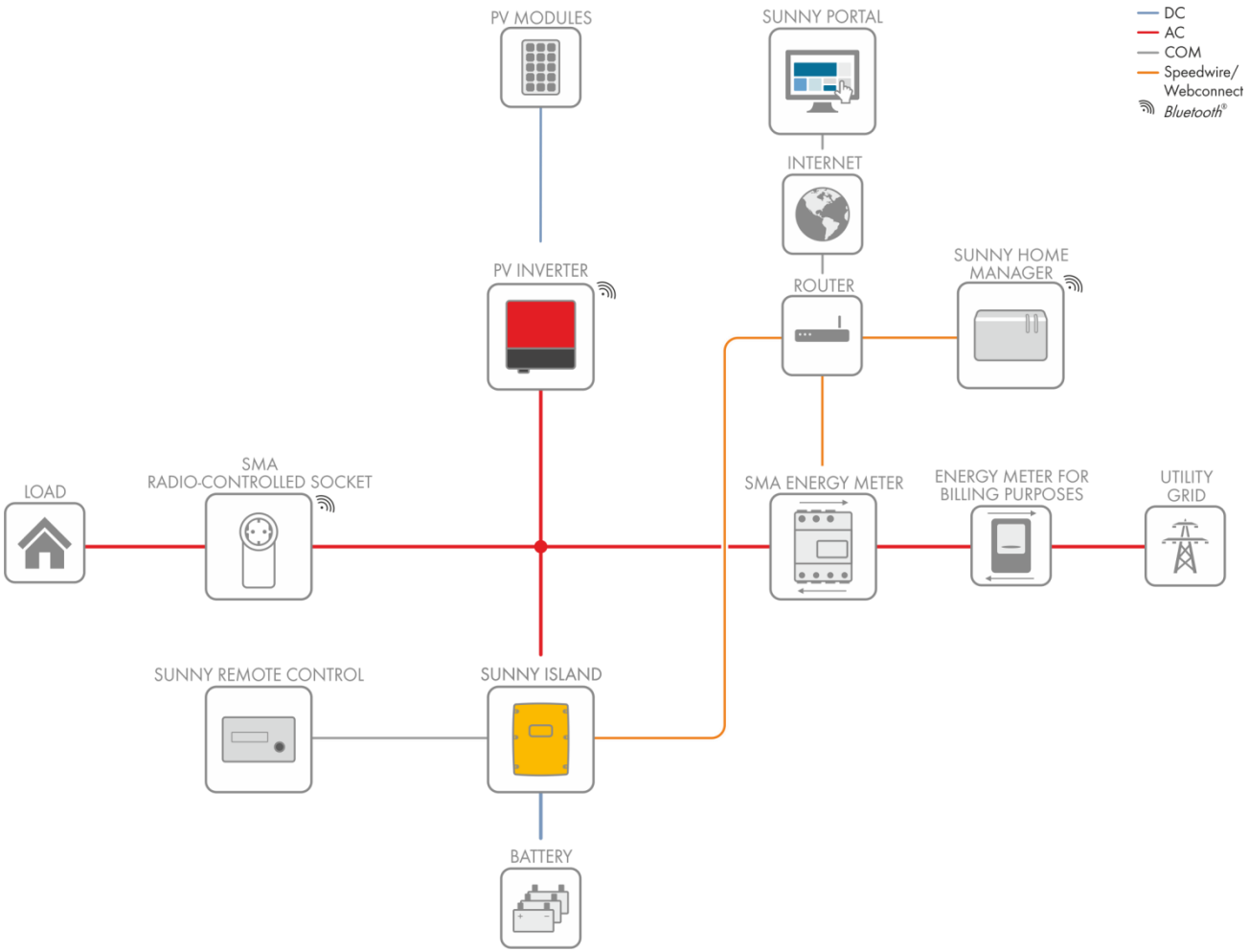
To do this, an automatic transfer switch disconnects the household grid with the PV system from the utility grid. The Sunny Island forms a battery backup grid supplied by the PV system.

> The PV system is still usable even during a power outage

> Certified by the external Industrial Trade Association

> Can be retrofitted in existing systems without extra effort

SUNNY ISLAND 3.0/4.4 - ON-GRID CONFIGURATION



› Example: Single-phase on-grid system with one Sunny Island 3.0/4.4M

SUNNY ISLAND 3.0/4.4 – ACCESSORY FOR ON GRID

Optional with the order	SMA on-grid accessory	External battery backup accessories

Sunny Remote Control

BatFuse B.03

Sunny Home Manager

Energy Meter

Automatic transfer switch
(from Enwitec)

can be ordered directly
http://enwitec.eu/

Interface
Speed Wire data module
(SWDMSI)

BatFuse B.01

LV/HRC fuse link for
BatFuse B.01/B.03
For SI 3.0 = 80 A,
for SI 4.4 = 100 A

Battery Cable Sets

SUNNY ISLAND 3.0/4.4 – ADVANTAGES ON-GRID

Flexible

> For self-consumption, battery backup and off-grid systems
> With all lead-acid and many lithium-ion batteries
> For single- and three-phase systems from 2 to 13 kW
> Maximum flexibility in energy generation (PV, wind, hydroelectric, CHP, diesel generators)

Efficient

> Full battery backup function with high overload capacity
> Maximum efficiency greater than 95 %
> Intelligent energy management: a live display of all energy flows via Sunny Portal & Sunny Home Manager
> Future-proof

Safe

> Long battery life thanks to intelligent battery management
> Proven safety thanks to external certification
> Suitable for use at any location thanks to robust design and increased temperature range

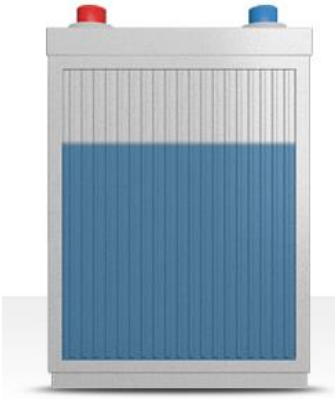
Flexible. Efficient. Safe.

SUNNY ISLAND 3.0/4.4 – SUPPORTED BATTERIES

All lead-acid batteries:

> OPzV* Valve-regulated lead-acid (VRLA) (lead-acid battery in an enclosed design with pressure relief valve)

> OPzS** Flooded lead-acid (FLA (Liquid electrolyte)

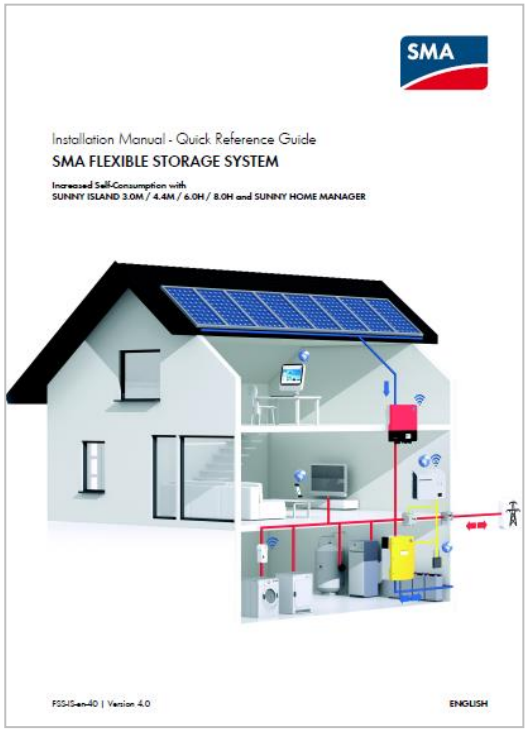


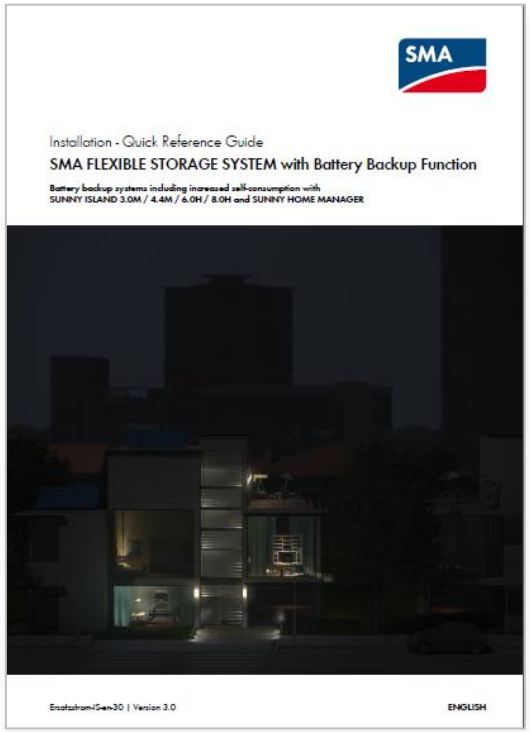
* Stationary tubular plates closed
** Stationary tubular plates standard

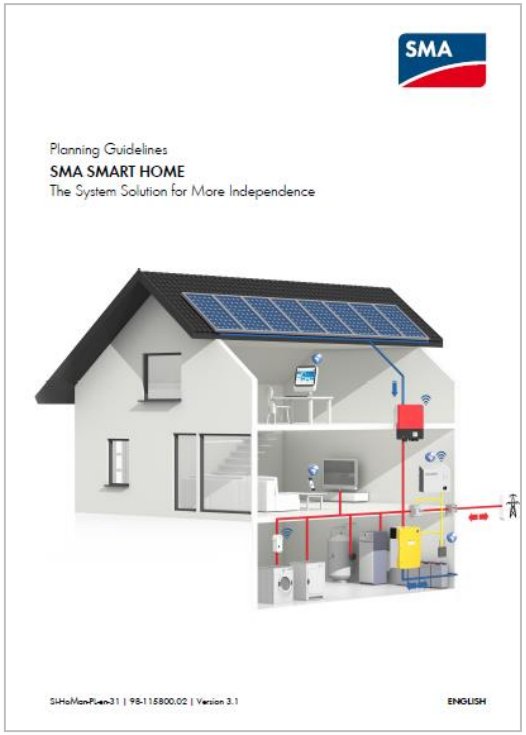
Many lithium-ion batteries:

> "List of approved lithium-ion batteries" www.sma.de (technical information)

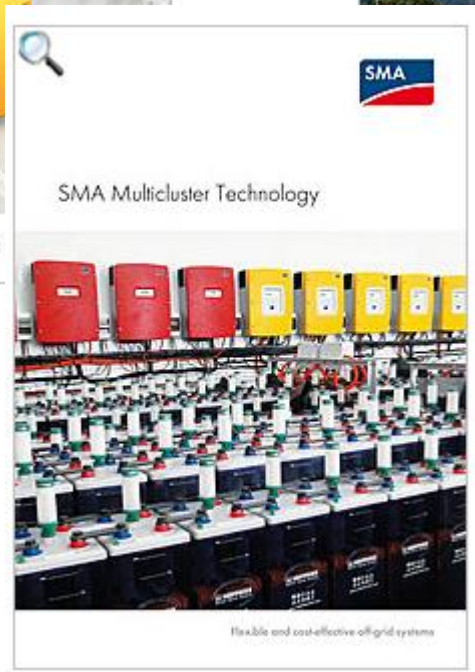
USEFUL DOCUMENTS – ON-GRID APPLICATIONS

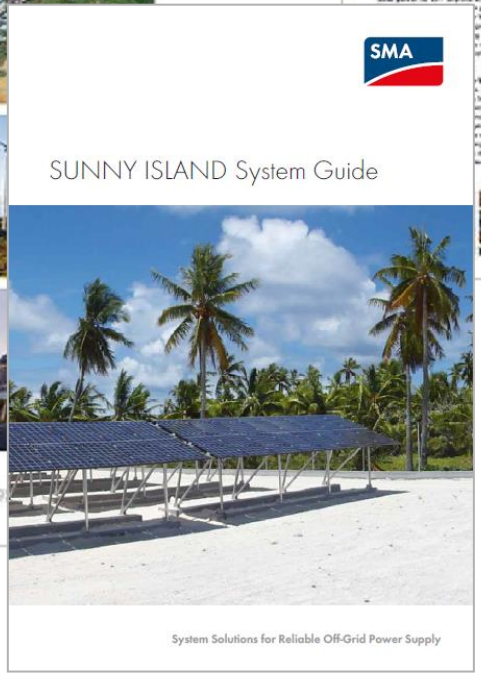




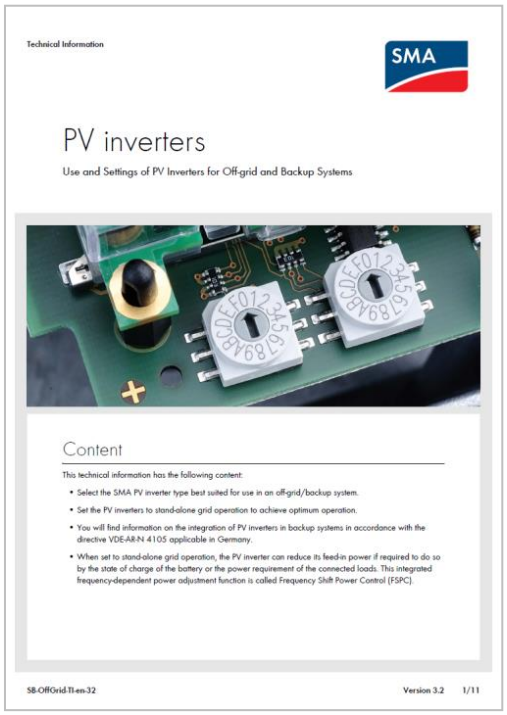


USEFUL DOCUMENTS – FOR OFF-GRID APPLICATIONS





USEFUL DOCUMENTS – TECHNICAL INFORMATION


Technical Information

SMA

PV inverters

Use and Settings of PV Inverters for Off-grid and Backup Systems

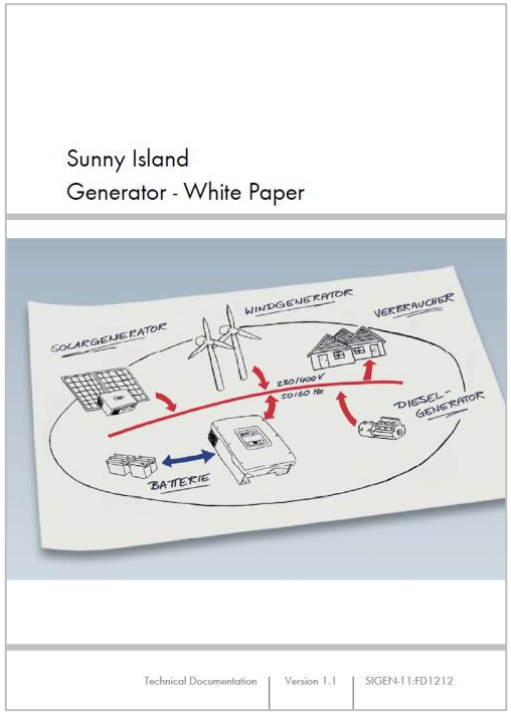
Content

This technical information has the following content:

- Select the SMA PV inverter type best suited for use in an off-grid/backup system.
- Set the PV inverters to stand-alone grid operation to achieve optimum operation.
- You will find information on the integration of PV inverters in backup systems in accordance with the directive VDE-AR-N 4105 applicable in Germany.
- When set to stand-alone grid operation, the PV inverter can reduce its feed-in power if required to do so by the state of charge of the battery or the power requirement of the connected loads. This integrated frequency-dependent power adjustment function is called Frequency Shift Power Control (FSPC).

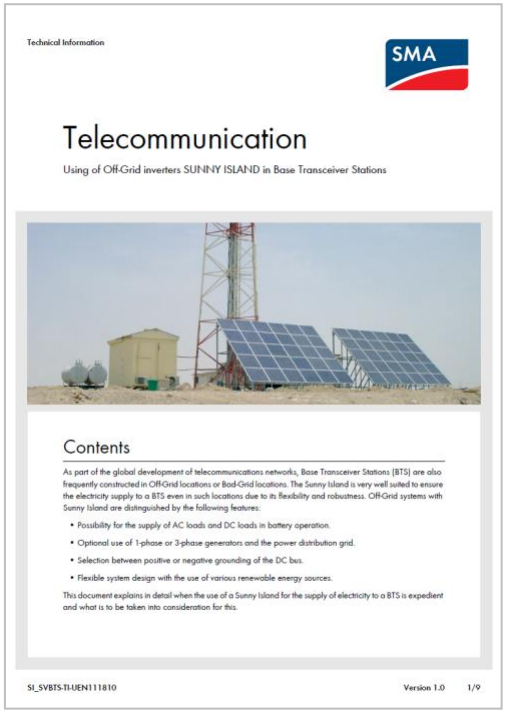
SB-OffGrid-TI-en-32 Version 3.2 1/11

Use and Settings of PV Inverters
for Off-Grid and Backup Systems


Sunny Island
Generator - White Paper

Technical Documentation | Version 1.1 | SIGEN-11:FD1212

Sunny Island Generator
White Paper


Technical Information

SMA

Telecommunication

Using of Off-Grid inverters SUNNY ISLAND in Base Transceiver Stations

Contents

As part of the global development of telecommunications networks, Base Transceiver Stations (BTS) are also frequently constructed in Off-Grid locations or Bad-Grid locations. The Sunny Island is very well suited to ensure the electricity supply to a BTS even in such locations due to its flexibility and robustness. Off-Grid systems with Sunny Island are distinguished by the following features:

- Possibility for the supply of AC loads and DC loads in battery operation.
- Optional use of 1-phase or 3-phase generators and the power distribution grid.
- Selection between positive or negative grounding of the DC bus.
- Flexible system design with the use of various renewable energy sources.

This document explains in detail when the use of a Sunny Island for the supply of electricity to a BTS is expedient and what is to be taken into consideration for this.

SI_SVBTS-TI-UEN111810 Version 1.0 1/9

Using of Off-Grid inverters
SUNNY ISLAND
in Base Transceiver Stations

SUNNY ISLAND 3.0M/4.4 M – FUTURE-PROOF

Reliable planning and cost savings through self-sufficient solar power generation and consumption at inexpensive fixed rates.

The most environmentally friendly energy supply.

Greater independence without compromising comfort or supply reliability.

Complete transparency for the electrical energy budget.

Preparation for the future by taking into account variable electricity prices and upcoming smart grid business models.

ENERGY
THAT
CHANGES

SMA

SOCIAL MEDIA
www.SMA.de/Newsroom