

HOME SOLAR SYSTEMS

JULY 2016

GRID-TIE PV SYSTEM WITH HOME MANAGER

The PV system is designed as an energy efficiency mechanism to feed power from the **Solar PV System** directly into the power supply of the house .

Our systems are designed with a unique built -in Power Management system, called the **SMA Home Manager**. It uses a power meter to actively manage how the power produced by the PV panels is supplied to the house and to the battery bank. Creating further energy efficiencies through **Self Consumption**

A prepaid or new council digital metering system does not allow for Grid Tie. The **SMA Home Manager** acts as a Power Limiter to ensure that the system does **not Nett supply** as this would debit the meter.

The system has a **web-based monitoring capacity** that can be managed and viewed online through **Sunny Portal**

We have included the option of a **SMA Sunny Island Inverter with batteries deep cycle or Lithium** to provide a self consumption or home UPS systems that will enhance energy savings and provide backup support should there be power outages (see self-consumption brochure).

PACKAGE OPTION 1

- **3KW SMA GRID TIE SYSTEM WITH ENERGY METER**
- 10 x 255W Photovoltaic Panels
- 1 x **SMA Sunnyboy SB2.5-1VL-40** Inverter (**Built in Home Manager**)
- 1 x Cable, Fuses, Parts
- 1 x PV Frame
- 1 x **SMA Energy Meter**
- 1 x Comms Setup and Meter Installation
- 1 x COC and Engineer Report
- 1 x Labour and Installation
- 1 x Delivery



10 x 255w Panels



SB2.5-1VL-40 Inverter



SMA Energy Meter

OPTION 2

• 5KW SMA GRID TIE SYSTEM WITH HOME MANAGER

- 20 x 255W Photovoltaic Panels
- 1 x SMA STP 5000TL Inverter
- 1 x Cable, Fuses, Parts
- 1 x PV Frame
- 1 x Energy Meter
- 1 x Home Manager
- 1 x Comms Setup and Meter Installation
- 1 x COC and Engineer Report
- 1 x Labour and Installation
- 1 x Delivery



255w Panels



STP 5000TL Inverter



Energy Meter



SMA Home Manager

3.1 KW Grid TIE PV System Performance Stats Example

System overview

10 x JinkoSolar Holding Co. Ltd. JKM-310P-72-A (01/2014) (PV array 1)
Azimuth angle: 180°, Tilt angle: 25°, Mounting type: Roof, Peak power: 3.10 kWp



1 x SB 2.5-1VL-40

Technical data

| | | | |
|---------------------------------|--------------|---|--------------|
| Total number of PV modules: | 10 | Performance ratio (approx.):* | 83.6 % |
| Peak power: | 3.10 kWp | Spec. energy yield (approx.):* | 1797 kWh/kWp |
| Number of inverters: | 1 | Line losses (in % of PV energy): | ... |
| Nominal AC power: | 2.50 kW | Unbalanced load: | 2.50 kVA |
| AC active power: | 2.50 kW | Annual energy consumption: | 9,000.00 kWh |
| Active power ratio: | 80.6 % | Self-consumption: | 3,184.10 kWh |
| Annual energy yield (approx.):* | 5,571.50 kWh | Self-consumption quota: | 57.1 % |
| Energy usability factor: | 97.8 % | Self-sufficiency quota (energy consumption in %): | 35.4 % |

The system is designed to manage the solar power-feed directly into the Power Supply of the house.

The **SMA 2.5 V40** has a built-in Home manager that communicates to the power meter at the mains. Real-time and historical performance provides accurate information about the PV system and the home energy usage as a whole; enabling you to efficiently manage your electricity costs.

Smart algorithms continuously track the power and voltage, detecting performance events that require intervention or maintenance. These features enable system owners to verify site functionality and monitor its performance.

- Clear visualization of key energy flows in the household
- Energy balance diagrams which show PV generation, charging/discharging of the storage battery
- Energy mix (electricity from photovoltaics, battery, utility grid) as used by individual household appliances
- Historic energy consumption charts with various view selections
- Basic PV system status monitoring to confirm correct system performance

MONITOR AND ACT

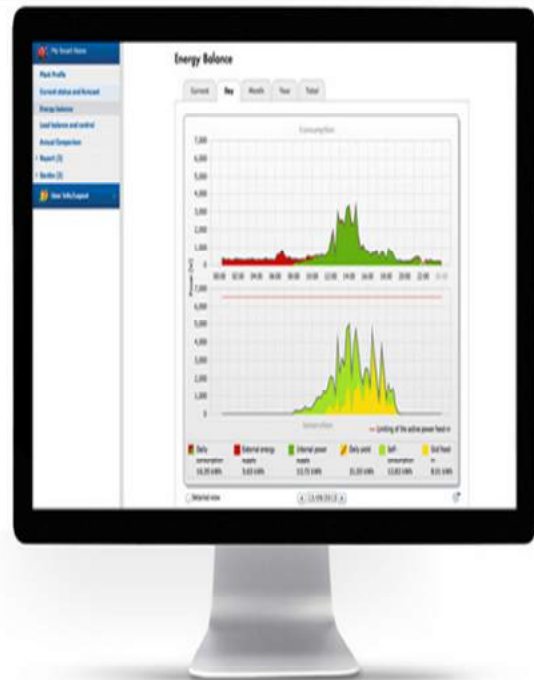
UNDERSTAND YOUR ENERGY GENERATION AND CONSUMPTION

- Do you know how much energy is required to wash a load of laundry?
- Do you know that your beloved refrigerator actually uses three times more energy than an A++ refrigerator?
- Are you aware that on a sunny day, your PV system produces more energy than you actually can consume?

Being connected to all major household appliances, Sunny Home Manager can tell you and allows you to adjust your consumption habits. This is the first step in reducing your energy bill and being more ecologically conscious by actually using energy when the sun provides it.

WHAT SUNNY HOME MANAGER HAS TO OFFER

- Clear visualization of key energy flows in the household
- Energy balance diagrams which show PV generation, charging/discharging of the storage battery
- Energy mix (electricity from photovoltaics, battery, utility grid) as used by individual household appliances
- Historic energy consumption charts with various view selections



ENERGY BALANCE

The analysis page shows the energy balance for a specified time period and provides analyses for generation, consumption, self-consumption and battery usage.

> ENERGY BALANCE WITH SUNNY PORTAL

SWITCH AND MANAGE

ENERGY MANAGEMENT WITH THE SMA SMART HOME AUTOMATICALLY REDUCES YOUR ENERGY BILL



Once you know where energy comes and goes in your home, you can let Sunny Home Manager do what it is designed to do... manage energy.

Having access to all key household appliances, the optional battery-storage system and the PV generation unit, the Sunny Home Manager always knows how much energy is available and where it is needed. Aided by a weather forecast from Internet data and individual adaptation to local conditions, it is able to accurately predict solar irradiation for a few hours into the future and supply the connected household appliances with low cost PV energy. Thanks to the Sunny Home Manager's self-learning function, appliances such as the heat pump run exactly when there is sufficient sunlight available, making it possible to cover electric power demand by solar production.

The online Sunny Portal shows the status of the PV system and displays energy availability and consumption forecasts. It indicates the scheduled operating periods of the household appliances that Sunny Home Manager factors into its energy planning. So you know that the washing machine will be finished at 4 p.m. and that the laundry will have been washed almost entirely using solar power. It also gives tips on how you could use additional excess PV energy.

The diagrams in the Sunny Portal display the power consumption for connected household appliances together so that you can see exactly when Sunny Home Manager started the dishwasher or how much solar power the heat pump used over the past month.

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SMA ENERGY METER



HOME SYSTEMS

INDUSTRIAL SYSTEMS

SERVICE & SUPPORT

PRODUCTS



SMA ENERGY METER

UNIVERSAL RECORDING OF MEASURED VALUES FOR INTELLIGENT ENERGY MANAGEMENT

Now also available for applications > 63 A thanks to external current transformers.

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The powerful measurement solution for intelligent energy management within the SMA Smart Home: The SMA Energy Meter takes phase-exact and balanced electrical measured values as a grid feed-in and purchased electricity meter and communicates these values via Speedwire. Thanks to its ability to quickly acquire measured values, the SMA Energy Meter is the ideal supplier of data for intelligent energy management within the SMA Smart Home. All PV generation data, purchased electricity and grid feed-in can be transmitted via standard Ethernet cable to the Sunny Home Manager, for example, or to the Sunny Boy Smart Energy. This, in turn, facilitates optimal energy monitoring, effective load and battery management and reliable active power limitation at the grid feed-in point while taking self-consumption into account.

Easy-to-Use

- Quick plug and play installation
- Graphic visualization of current measured values in Sunny Portal

Flexible

- Space-saving top-hat rail mounting in household distribution thanks to compact enclosure
- Use of standard Ethernet cables for Speedwire communication
- Universal deployment options regardless of existing energy meter
- Easily and flexibly combined with SMA Smart Home components

High Performance

- Fast three-phase reading of measured values for effective energy management

• Fast Speedwire c SMA uses cookies to provide the best possible user experience for those who visit our website. By using this website you agree to the placement of cookies.

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ONLINE ENERGY EXCHANGE REAL-TIME DATA

