SOLAR KIT MODEL: SISMA-H5000

5000  Solar PV Hybrid Kit
720   kWh per month production
24000 Wh per day production

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Solar panels 250W Polycrystalline</td>
</tr>
<tr>
<td>1</td>
<td>Solar hybrid inverter 5000TL</td>
</tr>
<tr>
<td>1</td>
<td>Solar hybrid inverter Sunny Island 6.0H</td>
</tr>
<tr>
<td>8</td>
<td>Battery bank 12V 150AH or equivalent</td>
</tr>
<tr>
<td>1</td>
<td>Support structure for solar panels</td>
</tr>
<tr>
<td>1</td>
<td>15m DC cables 1x5.6mm R1000 2 core PV panel to charge controller with thimble at ends</td>
</tr>
<tr>
<td>1</td>
<td>2x2m DC cables 1x5.6mm R1000 2 core battery to hybrid inverter with thimble at ends</td>
</tr>
<tr>
<td>1</td>
<td>9 x 0.5m DC cables 1x5,6mm R1000 2 core battery interconnection with thimble at ends</td>
</tr>
<tr>
<td>1</td>
<td>5m AC cable 1x5,6mm R1000 2 core inverter to main breaker with thimble at ends</td>
</tr>
<tr>
<td>1</td>
<td>5m AC cable 1x5,6mm R1000 2 core inverter to inverter with thimble at ends</td>
</tr>
<tr>
<td>1</td>
<td>1 pair Solar connector MC4</td>
</tr>
<tr>
<td>1</td>
<td>1 installation tool kit</td>
</tr>
</tbody>
</table>

SYSTEM WARRANTY*:
- Solar modules production: 25 years
- Module support structure: 25 years
- Inverters: 5 years standard, (extendable to 25 years)
- Battery: 1 year (life 10 years)

Quality of Components:
Manufactured in EU.
All components in the kit are high quality with CE standard

Description
SITECNO solar kits for hybrid system with diesel generator, batteries and grid are complete solutions which also provide energy in all unforeseen situations that may lead either by time, by circumstances of outage and...
any situation. It is a complete solution for saving your energy costs and fuel.

**Kits advantages**
- Easy to organize the order through a unique code and provider
- Compatibility between all components secured
- Measurement of energy flows installation
- CE Highest quality components
- Support pre (Combiner Box) enclosures configured to facilitate mounting installation.
- Possibility of dimensioning variants references listed kits for other power settings (on request)

**Function of the system**
1. The place uses the solar energy produced by photovoltaic modules during the hours of sun, plus the excess energy store in the batteries.

2. The grid is second choice after solar energy and the first choice for the night. In the absence of solar energy, either by night or unstable climate. The surplus energy will stored in batteries and grid.

3. The battery is a third option, when grid is unstable, the load consumes energy from the batteries.

4. The diesel generator is the last option when the load does not get solar energy, batteries do not have enough stored energy or are empty, and there is load shedding in the grid. In these situations the location consumes energy from diesel generator and also charges the batteries.

**Modular system**
These systems are module type and can be installed as per your space and requirement. You can ask for additional services as state-of-the-art designing, drawings, engineering and installation of your projects.

Solar kits with modular system can be extended to MW projects

**Solar Kit Applications:**
- Schools
- Restaurants
- Gymnasium
- Electric vehicle charging stations
- Gardens
- Markets
- Administration buildings
- Hospitals
- Resorts
- Service centres
- Multi story buildings
- Shopping malls
- Hotels
- Scout camps
- Petrol Stations
- Parking Areas
- Old houses
- Public service offices

**Additional Accessories**
You can ask for additional accessories for extension at your installation or shifting of your system to another place.

**Installation Training Services**
Training of installation is offered for technical persons on time to time basis. Schedule of the training session announce on web site.

**Operation and maintenance services**
Operation and maintenance services offered for the valued customers for efficient operation of the system. Customers may ask for the O&M service contract with the company.

**Monitoring services**
In order to monitor solar power systems, data can be transmitted to remote locations. For communication between the solar inverter and monitoring devices, SITECNO provides two basic choices:
Wireless or Blue-tooth and wired variants.

**Polycrystalline Solar Module 250W**

SITECNO Solar Photovoltaic Panels stand for quality, durability and most importantly, high performance. Our experience, capacity of research, continuing development and improvement have turned us into a company recognized in the sector by the high value offered to our clients.

Due to their engineered hollow section frame and its 4mm special textured glass with AR coating, SITECNO modules meet the maximum demands with regard to stability and corrosion resistance.

Thanks to their high performance SITECNO modules are prepared for changes in legislation. These panels will produce 5% more than any other of the same features.

The performance warranty is for 25 years, after 12 years, modules still produce a minimum 90% of their nominal performance. After 25 years module still produce a minimum 80% of their nominal performance.

**Electrical Characteristics:**

<table>
<thead>
<tr>
<th>Model</th>
<th>SI-P60-250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Power (Pmax)</td>
<td>250W</td>
</tr>
<tr>
<td>Open Circuit Voltage (Voc)</td>
<td>37,5V</td>
</tr>
<tr>
<td>Short Circuit Current (Isc)</td>
<td>8,76A</td>
</tr>
<tr>
<td>Voltage at Nominal Power (Vmp)</td>
<td>30,3V</td>
</tr>
<tr>
<td>Current at Nominal Power (Imp)</td>
<td>8,24A</td>
</tr>
<tr>
<td>Module Efficiency (%)</td>
<td>15,20</td>
</tr>
</tbody>
</table>

**Mechanical Characteristics:**

<table>
<thead>
<tr>
<th>Cell type</th>
<th>Polycrystalline156x156mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cells</td>
<td>60 (6x10)</td>
</tr>
<tr>
<td>Module dimension</td>
<td>1660 x 990 x 50mm</td>
</tr>
<tr>
<td>Weight</td>
<td>20kg</td>
</tr>
<tr>
<td>Front cover</td>
<td>TSG low-iron tempered glass</td>
</tr>
<tr>
<td>Frame</td>
<td>Aluminium alloy</td>
</tr>
<tr>
<td>Junction box</td>
<td>IP65, 3diodes</td>
</tr>
<tr>
<td>Cable length</td>
<td>1200mm (+), 800mm(-)</td>
</tr>
<tr>
<td>Connector</td>
<td>PV-JM601</td>
</tr>
</tbody>
</table>

**Temperature Coefficients:**

| Nominal Operating Cell Temperature (NOCT) | 25°C ±2°C |
| Temperature Coefficients of Pmax        | -0.43% / °K |
| Temperature Coefficients of Voc         | -0.31% / °K |
| Temperature Coefficients of Isc         | 0.04% / °K |
| Operating Temperature                   | -40 °C to +85 °C |
| Maximum System Voltage                  | 1000V DC   |
| Reverse current load                    | 15A        |
MORE EFFICIENT
THANKS TO ITS 750 V DC INPUT VOLTAGE
Electrifying detail: Thanks to the higher, 750 volt maximum DC input voltage, often times one less module string is needed because more modules can be switched on in a series.
  • Highly flexible design reduces cabling requirements
  • Maximum efficiency of 97 percent ensures top solar yield

MORE FLEXIBLE
THANKS TO MULTI-STRING TECHNOLOGY
Greater flexibility in planning, implementing and solar harvest:
  • Optimal yield in partial shading and efficient operation of east/west arrays
  • Two MPP trackers with expandable OptiTrac** Global Peak operational control
  • Optional: Single Tracker for complex or simple roof structures or as an add-on to existing PV plants

EASIER
THANKS TO INNOVATIVE MOUNTING CONCEPT
The wall mount has also been redesigned, and now allows you to attach the inverter easily by inserting it from above.
  • Fast and professional attachment, even on walls that are not completely straight
  • Popular anti-theft protection option available

UNIVERSALLY APPLICABLE
THANKS TO INTEGRATED GRID MANAGEMENT
Intelligent controls offer advantages in every situation: Thanks to its integrated grid management functions, the new Sunny Boy with Reactive Power Control offers universal deployment options and contributes to grid support.
  • Fewer disconnections from the grid thanks to voltage reduction via reactive power
  • Increased plant profitability

*Input (DC)*
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. DC power (@ cos φ = 1)</td>
<td>5000 W</td>
</tr>
<tr>
<td>Max. input voltage</td>
<td>750 V</td>
</tr>
<tr>
<td>MPP voltage range / rated input voltage</td>
<td>175 V ... 500 V / 400 V</td>
</tr>
<tr>
<td>Min. input voltage / initial input voltage</td>
<td>125 V / 150 V</td>
</tr>
<tr>
<td>Max. input current input A / input B</td>
<td>15 A / 15 A</td>
</tr>
<tr>
<td>Max. input current per string input A / input B</td>
<td>15 A / 15 A</td>
</tr>
<tr>
<td>Number of independent MPP inputs / strings per MPP input</td>
<td>2 / A:2; B:2</td>
</tr>
</tbody>
</table>

*Output (AC)*
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated power (@ 230 V, 50 Hz)</td>
<td>4600 W</td>
</tr>
<tr>
<td>Max. apparent AC power</td>
<td>5000 VA</td>
</tr>
<tr>
<td>Nominal AC voltage / range</td>
<td>220 V, 230 V, 180 V - 280 V</td>
</tr>
<tr>
<td>AC power frequency / range</td>
<td>50 Hz, 60 Hz / -5 Hz ... +5 Hz</td>
</tr>
<tr>
<td>Rated power frequency / rated grid voltage</td>
<td>50 Hz / 230 V</td>
</tr>
<tr>
<td>Max. output current</td>
<td>22 A</td>
</tr>
<tr>
<td>Power factor at rated power</td>
<td>1</td>
</tr>
<tr>
<td>Displacement power factor, adjustable</td>
<td>0.8 overexcited ... 0.8 underexcited</td>
</tr>
</tbody>
</table>
**Efficiency**
Max. efficiency / European weighted efficiency 97% / 96.3%

**Protective devices**
- DC disconnect device
- Ground fault monitoring / grid monitoring ● /
- DC reverse polarity protection /
- AC short-circuit current capability /
- Galvanically isolated ● /
- All-pole-sensitive residual-current monitoring unit ●
- Protection class (according to IEC 62103) /
  overvoltage category (according to IEC 60664-1) I/III

**General data**
- Dimensions (W / H / D) 490 / 519 / 185 mm (19.3 / 20.4 / 7.3 inches)
- Weight 26 kg (57.3 lb)
- Operating temperature range –25°C … +60°C (–13°F … +140°F)
- Noise emission (typical) 25 dB(A)
- Self-consumption (night) 1 W
- Topology Transformerless
- Cooling concept Convection
- Degree of protection (according to IEC 60529) IP65
- Climatic category (according to IEC 60721-3-4) 4K4H
- Maximum permissible value for relative humidity (non-condensing) 100%

**Features**
- DC connection / AC connection SUNCLIX / Spring clamp terminal
- Display Graphic ●
- Interface: RS485, Bluetooth, Speedwire/Webconnect ○ ○
- Multi-function relay / Power Control Module ○ ○
- Warranty: 5 / 10 / 15 / 20 / 25 years ● ○ ○ ○ ○
- Certificates and approvals (additional on request)
  AS 4777, C10/11, CE, CEI 0-21, EN 50438¹, G59/2, G83/1-1, IEC 61727, MEA4, NRS 097-2-1, PEA4, PPC, PPDS, RD1699, RD 661, UTE C15-712, VDE-AR-N 4105, VDE0126-1-1

- Standard features ○ Optional features — Not available, Data at nominal conditions
**SUNNY ISLAND 6.0H**

The custom-fit solution for on-grid and off-grid. The Sunny Island 6.0H support a wide range of on-grid and off-grid applications, and both systems have a number of compelling product features. Users benefit from SMA’s over 25 years of experience with battery inverter technology. Its high protection class, wide temperature range and overload capacity provide the kind of reliability needed for off-grid use. Intelligent load and energy management keeps the system running even in critical situations. And being a core element in the SMA Flexible Storage System for new and existing PV systems, the Sunny Island system stores generated solar power and works with the Sunny Home Manager to intelligently manage home energy consumption. The quick configuration guide and intuitive user interface help ensure quick and convenient commissioning in any both cases. The new Sunny Island 6.0H system are the perfect product solutions for stand-alone and grid-connected systems in a power output range of up to 18 kW.

**Technical data Sunny Island 6.0H**

**Operation on the utility grid or generator**
- Rated input voltage / AC input voltage range: 230 V / 172.5 V ... 264.5 V
- Rated input frequency / permitted input frequency range: 50 Hz / 40...Hz ... 70 Hz
- Maximum AC input current: 50 A
- Maximum AC input power: 11,500 W

**Stand-alone or emergency power operation**
- Rated grid voltage / AC voltage range: 230 V / 202 V ... 253 V
- Rated frequency / frequency range (adjustable): 50 Hz / 45 Hz ... 65 Hz
- Rated power (for Unom / fnom / 25°C / cos ϕ = 1): 4,600 W
- AC power at 25°C for 30 min / 5 min / 3 s: 6,000 W / 6,800 W / 11,000 W
- AC power at 45°C continuously: 3,700 W
- Rated current / short-circuit current (peak): 20 A / 120 A
- THD output voltage / power factor with rated power: < 4% / -1 ... +1

**Battery DC input**
- Rated input voltage / DC voltage range: 48 V / 41 V ... 63 V
- Maximum battery charging current / rated DC charging current / DC discharging current: 110 A / 90 A / 103 A
- Battery type / battery capacity (range): Li-ion*, FLA, VRLA / 100 Ah ... 10,000 Ah (lead) / 50 Ah ... 10,000 Ah (li-ion)
- Charge control: IUoU charge procedure with automatic full charge and equalization charge

**Efficiency / self-consumption**
- Maximum efficiency: 96%
- Self-consumption without load / standby: 26 W / 7 W
**Protective devices (equipment)**

AC short-circuit / AC overload ●/●

DC reverse polarity protection / DC fuse – / –

Overtemperature / battery deep discharge ●/●

Overvoltage category as per IEC 60664-1 III

**General data**

Dimensions (width x height x depth) 467 mm x 612 mm x 242 mm (18.4 inches / 24.1 inches / 9.5 inches)

Weight 44 kg (97 lbs)

Operating temperature range -25°C … +60°C (-13°F … +140°F)

Protection class according to IEC 62103 I

Climatic category according to IEC 60721 3K6

Degree of protection according to IEC 60529 IP54

**Features / function**

Operation and display / multifunction relay External via SRC-20 / 2

Three-phase systems / battery backup function ●/●

State of charge calculation / full charge / equalization charge ●/●/●

Integrated soft start / generator support ●/●

Battery temperature sensor / data cables ●/●

Certificates and approvals www.SMA-Solar.com

Warranty 5 years

**Accessories**

For off-grid applications

Battery cable / battery fuse ○/○

Interface SI-COMSMA (RS485) ○

Load-shedding contactor / external battery current measurement ○/○

Sunny Island Charger SIC50-MPT ○

For on-grid applications

Battery cable / battery fuse ○/○

Interface SWDMSI-NR (Speedwire) ○

Sunny Home Manager / SMA Energy Meter ○/○/○

Automatic transfer switch for battery backup (procurement via external supplier)

**Type designation**

● Standard features ○ Optional features — Not available

SI6.0H-11
SOLAR BLOC BATTERY

Solar bloc valve regulated lead-acid batteries for cyclic applications

Your benefits with HOPPECKE solar.bloc

Maintenance-free regarding water refilling - due to Absorbent Glass Mat technology
Optimized cycle stability - due to optimized electrode design for efficiently change current acceptance
Optimum operational safety - integrated backfire protection and central degassing system
High short-circuit safety even during the installation - based on HOPPECKE system connectors

Typical applications of HOPPECKE solar.bloc

Solar Off-grid applications
Power supply for remote off-grid applications and isolated power networks, solar home systems, solar street lighting, healthcare facilities

Storage for direct consumption of photovoltaic (PV) energy

Telecommunications
Mobile phone stations, BTS-stations, Off-grid/on-grid solutions

Traffic systems
Signalling systems
Lighting

Type of Battery: Solar.bloc
Standards: IEC 60896, IEC 61427, DIN 40744
Capacity Range: 150 AH
Normal Voltage range: 12V
Container Material: PP, talcum
Grid alloy (+ive, -ive): Pb + <1% Ca
Plates (+ive, -ive): Grid, Grid
Electrolyte: H2SO4, AGM
Application: Solar
Connector design: bolted connector
Design life up to: 10 years
Cycles up to: 800
Operating temperature: -20ºC to +40ºC

Service life in cycles and Depth of Discharge

Number of cycles [n] 4500 4000 3500 3000 2500 2000 1500 1000 500 0
Depth of Discharge DoD [%] 90 80 70 60 50 40 30 20 10 0

Size: LxWxH: 498mm x 177mm x 230mm
Weight: 55 Kg
**ACCESSORIES**

**Design**
Technical feature

**Modular type**
Aluminium
25 years warranty
Tamper proof nut bolt
100% recyclable material
A2 Stainless steel bolts
2.49kg/m

**Weight**

**Loads**
wind, snow

**Test certificate**
CE Certifies

**Cable:**
- Model: SI-MC4-F
- Rated Voltage: TUV 1500V DC / UL 600V DC
- Rating Current: 20-30A
- Cable Size: 2.5-4.0-6.0, 10-12-14AWG
- Proof Voltage: TUV 1500V AC, 1 min
- Protection Class: Class II
- Temperature Range: -40 to 85ºC
- Flame class: UL94-V0

**Connector:**
Flexible conductor, class 5
Maximum service temperature: 120ºC
Estimated lifetime: 30 years.
UV Resistant UV Resistant
Grease & mineral oils resistance: excellent
Grease & mineral oils resistance: excellent

**Support structure**

**Cable with connector**

**Cable connector MC4**
INSTALLATION APPLICATION

- Instant self-consumption system with feed in grid (on grid)
- Instant self-consumption system without feed in to the grid (on grid)
- Solar system hybrid compatible with diesel generator (on grid)

1. Módulos fotovoltaicos
2. Inversores
3. Batería
4. Red eléctrica
5. Generador diésel
6. Conmutador
7. Consumo
INSTALLATION APPLICATION

- Instant self-consumption system (off grid)

1. Módulos fotovoltaicos
2. Inversores
3. Batería
4. Consumo