

SUNNY HIGHPOWER PEAK1

SHP 75-10



Efficient

- Superior power density: 75 kW with only 77 kg of weight
- Max. yield thanks to possible DC/AC ratio of 150%

Reliable

- Superior PV system availability with 75 kW units
- SMA Inverter Manager as central control unit

Flexible

- DC input voltage of up to 1000 V
- Flexible DC solutions with customer-specific PV array combiner boxes

Innovative

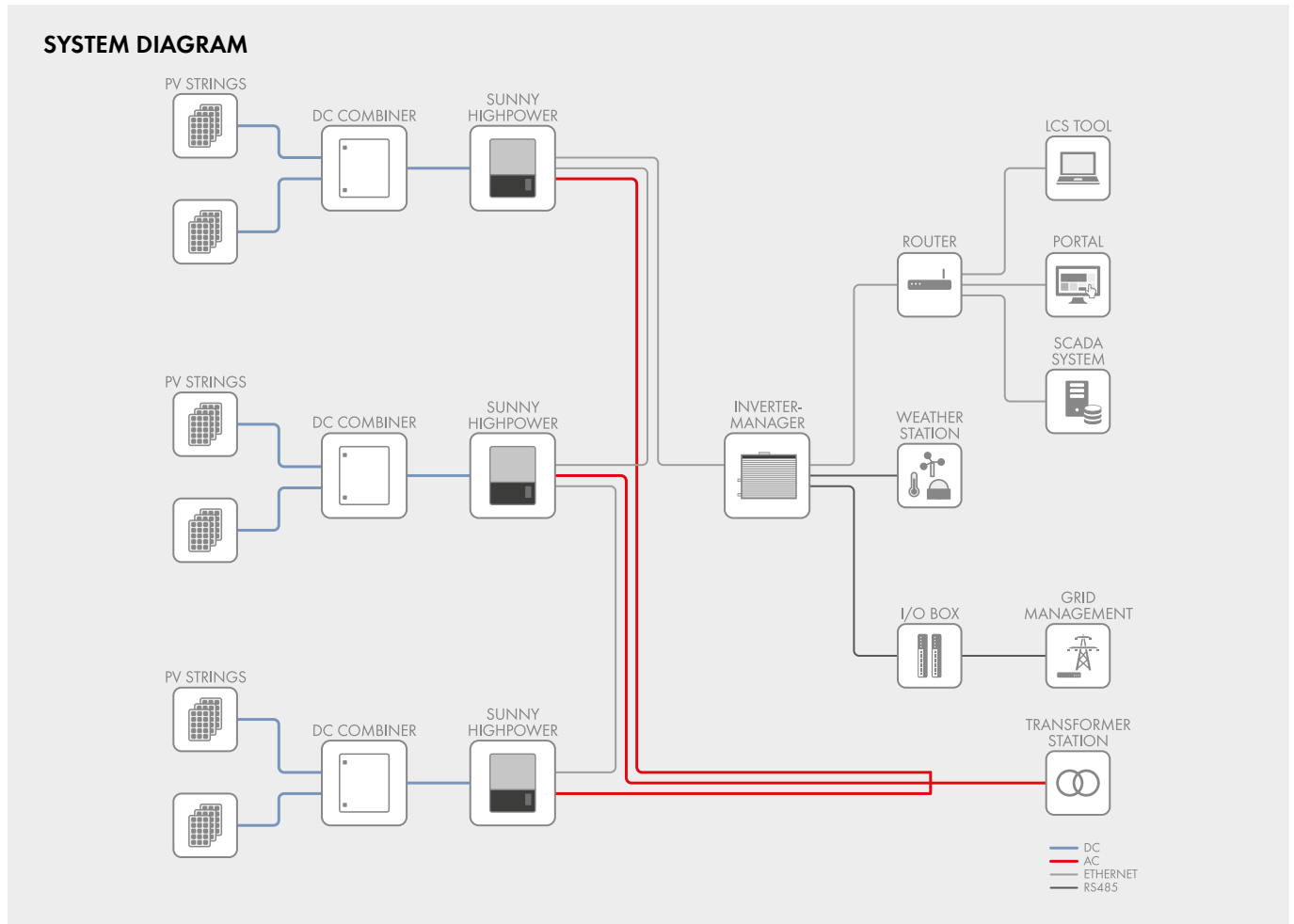
- Cutting-edge system design
- Innovative active cooling concept

SUNNY HIGHPOWER PEAK1

The Best of Two Worlds

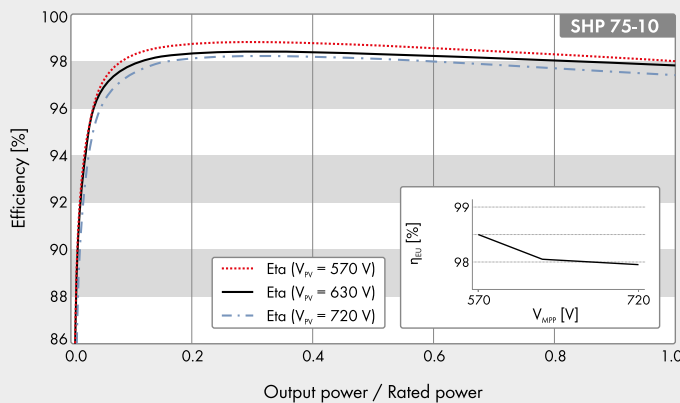
The new Sunny Highpower PEAK1 is part of an innovative global system solution for commercial and industrial PV systems. This solution combines the advantages of a decentralized system layout with the benefits of centralized inverter designs in order to get the best of two worlds. High efficiency, flexible system design, easy installation, simple commissioning and low maintenance requirements contribute decisively to reducing the operating costs for the entire system.

SUNNY HIGHPOWER PEAK1



| Technical Data | SMA Inverter Manager |
|--|---|
| Voltage supply | |
| Input voltage | 9 to 36 Vdc |
| Power consumption | < 20 W |
| General data | |
| Dimensions (W/H/D) | 160 / 125 / 49 mm (6.3 / 4.9 / 1.9 inches) |
| Weight | 940 g (2 lbs) |
| Maximum allowed number of inverters | 42 |
| Degree of protection | IP21 |
| Mounting | DIN top-hat rails or wall mounting |
| Operating temperature range | -40 °C to +85 °C (-40° F to +185° F) |
| Relative humidity (non-condensing) | 5 % to 95 % |
| Interfaces | |
| PC user interface | LCS tool |
| Sensor interface / protocol | RS485 / Modbus RTU for SunSpec Alliance compatible weather station |
| Interface to inverter | 1 Ethernet port (RJ45) |
| Interface for external network / protocol | 1 Ethernet port (RJ45) / Modbus TCP, SunSpec Alliance |
| Interface to remote control | 6 x DI via external SMA Digital I/O Box |
| Certificates and approvals (more available upon request) | UL 508, UL 60950-1, CSA C22.2 No. 60950-1-07, EN 55022 Class A, EN 60950-1, EN 61000-3-2 Class D, EN 61000-3-3, EN 61000-6-2, EN 61000-6-4, EN 55024, FCC Part 15, Sub-part B Class A |
| SMA Inverter Manager type designation | IM-20 |
| SMA Digital I/O Box type designation | IM-DIO-10 |

Efficiency curve



● Standard features ○ Optional – Not available
Data at nominal conditions
Last revision: October 2017

| Technical Data | Sunny Highpower PEAK1 |
|---|--|
| Input (DC) | |
| Max. generator power | 112500 W _p |
| Rated power (DC) | 76500 W |
| Max. input voltage | 1000 V |
| MPP voltage range (at 400 Vac / 480 Vac) | 570 V to 800 V / 685 V to 800 V |
| Min. input voltage (at 400 Vac / 480 Vac) | 565 V / 680 V |
| Start input voltage (at 400 Vac / 480 Vac) | 600 V / 720 V |
| Max. input current / max. short circuit current | 140 A / 210 A |
| Number of independent MPP inputs / strings per MPP input | 1 / 1 (split up in external combiner box) |
| Rated DC input voltage (at 400 Vac / 480 Vac) | 630 V / 710 V |
| Output (AC) | |
| Rated power at nominal voltage | 75000 W |
| Max. apparent AC power | 75000 VA |
| Max. reactive power | 75000 var |
| Nominal AC voltage | 3 / PE, 400 V to 480 V, ±10 % |
| AC voltage range | 360 V to 530 V |
| AC power frequency/range | 50 Hz / 44 Hz to 55 Hz 60 Hz / 54 Hz to 65 Hz |
| Rated power frequency/rated grid voltage | 50 Hz / 400 V |
| Max. output current (at 400 Vac) | 109 A |
| Power factor at rated power / displacement power factor adjustable | 1 / 0 overexcited to 0 underexcited |
| THD | ≤ 1 % |
| Feed-in phases/connection phases | 3 / 3 |
| Efficiency | |
| Max. efficiency / Euro-eta | 98.8% / 98.2% |
| Protective devices | |
| Input-side disconnection point | ● |
| Ground fault monitoring/grid monitoring | ● / ● |
| Integrated DC surge arrester / AC surge arrester | Type II / type II + III (combined) |
| AC short-circuit current capability / galvanically isolated | ● / – |
| All-pole sensitive residual-current monitoring unit | ● |
| Protection class (as per IEC 62109-1) / overvoltage category (as per IEC 62109-1) | I / AC: III; DC: II |
| General data | |
| Dimensions (W/H/D) | 570 / 740 / 306 mm (22.4 / 29.1 / 12.0 inches) |
| Weight | 77 kg (170 lb) |
| Operating temperature range | -25 °C to +60 °C (-13 °F to +140 °F) |
| Noise emission, typical | 58 dB(A) |
| Self-consumption (at night) | < 3 W |
| Topology / cooling concept | Transformerless / active |
| Degree of protection (according to IEC 60529 / UL 50E) | IP65 / NEMA 3R |
| Climatic category (as per IEC 60721-3-4) | 4K4H/4Z4/4B2/4S3/4M2/4C2 |
| Max. permissible value for relative humidity (non-condensing) | 95 % |
| Features / function / accessories | |
| DC connection / AC connection | Screw terminal / screw terminal |
| Display | Graphical |
| Data interface | SunSpec Modbus TCP (via external SMA Inverter Manager) |
| Off-grid capable / PV-diesel capable | – / ● |
| Warranty: 5/10/15/20 years | ● / ○ / ○ / ○ |
| Planned Certificates and approvals | AS 4777, BDEW 2008, C10/11:2012**, CEI 0-16, DEWA 2015, EN 50438*, G59/3, IEC 60068-2-x, IEC 61727, IEC 62109-1/2, IEC 62116, LEY N° 20751, NEN EN 50438, NRS 097-2-1, PEA 2015, R.D.661/2007, Res. n° 7:2013, SI4777, TORDA**, UTE C15-712-1, VDE 0126-1-1, VDE-AR-N 4105**, VFR 2014 |
| * Does not apply to all national annexes of EN 50438 ** Restricted (Note Manufacturer's Declaration) | |
| Type designation | SHP 75-10 |

FLEXIBLE SYSTEM DESIGN

With Maximum Efficiency

The new SMA system solution consists of four components: highly efficient inverters, the flexible combiner boxes, the central SMA Inverter Manager and the LCS commissioning tool. It is precisely this systemized approach that makes the Sunny Highpower PEAK1 so unique and guarantees a high level of performance along with maximum flexibility in system planning and design.

Sunny Highpower PEAK1 inverters with impressive design

No other inverter weighing only 77 kg with an output of 75 kW offers this. With its compact design, the Sunny Highpower PEAK1 requires little space, reduces on-site preparation work, simplifies installation and lowers maintenance costs.

Innovative system management with the SMA Inverter Manager

The SMA Inverter Manager is the central communications component and sole interface for controlling the entire system. It handles all the important inverter and system management functions for up to 42 inverters in one system (up to 3.15 MW). Based on Modbus TCP (SunSpec Alliance) Communication, it can be easily integrated into a larger communication system. Moreover, the SMA Inverter Manager provides grid management functions and exchanges data with the grid operator.

Easy commissioning with the LCS commissioning tool

The specially developed LCS tool (Local Commissioning and Service) makes commissioning easy, saves time and reduces costs. The inverter is configured by simply selecting the system-specific configuration files and then transmitting them to all inverters. Furthermore, by reading the status, current values and incidents at the inverter level can make troubleshooting and bug-fixing considerably easier.

External combiner box for flexible system design

The module strings are connected to the inverters using the external combiner boxes.* This allows the system to flexibly adapt to various regional standards and the generator configuration. This new design decisively contributes to reducing system costs.

*Different configurations can be delivered upon request