



## 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

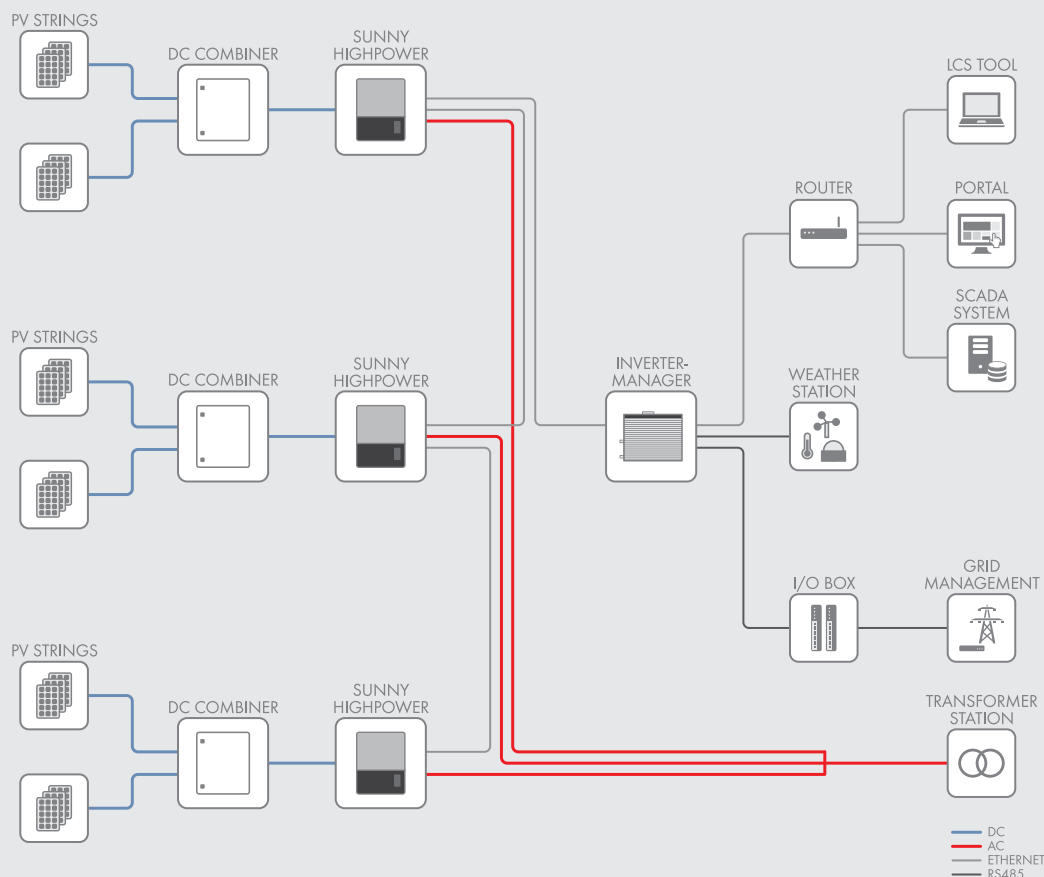
## SUNNY HIGHPOWER PEAK1

### 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.

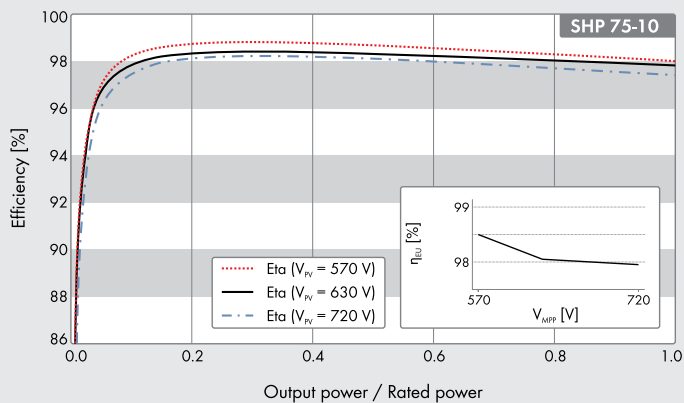
# SUNNY HIGHPOWER PEAK1

## SYSTEM DIAGRAM



Technical Data	SMA Inverter Manager
<b>Voltage supply</b>	
Input voltage	9 to 36 Vdc
Power consumption	< 20 W
<b>General data</b>	
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 %
<b>Interfaces</b>	
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: April 2019

### Technical Data

#### Input (DC)

Max. generator power
Rated power (DC)
Max. input voltage
MPP voltage range (at 400 Vac / 480 Vac)
Min. input voltage (at 400 Vac / 480 Vac)
Start input voltage (at 400 Vac / 480 Vac)
Max. input current / max. short circuit current
Number of independent MPP inputs / strings per MPP input
Rated DC input voltage (at 400 Vac / 480 Vac)

#### Output (AC)

Rated power at nominal voltage
Max. apparent AC power
Max. reactive power
Nominal AC voltage
AC voltage range
AC power frequency/range
Rated power frequency/rated grid voltage
Max. output current (at 400 Vac)
Power factor at rated power / displacement power factor adjustable
THD
Feed-in phases/connection phases

#### Efficiency

Max. efficiency / Euro-eta
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#### Protective devices

Input-side disconnection point
Ground fault monitoring/grid monitoring
Integrated DC surge arrester / AC surge arrester
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)

#### General data

Dimensions (W/H/D)
Weight
Operating temperature range
Noise emission, typical
Self-consumption (at night)
Topology / cooling concept
Degree of protection (according to IEC 60529 / UL 50E)
Climatic category (as per IEC 60721-3-4)
Max. permissible value for relative humidity (non-condensing)

#### Features / function / accessories

DC connection / AC connection
Display
Data interface
Off-grid capable / PV-diesel capable
Warranty: 5/10/15/20 years

#### Planned Certificates and approvals

\* Does not apply to all national annexes of EN 50438  
 \*\* Restricted (Note Manufacturer's Declaration)

#### Type designation

### Sunny Highpower PEAK1

112500 W <sub>p</sub>
76500 W
1000 V
570 V to 800 V / 685 V to 800 V
565 V / 680 V
600 V / 720 V
140 A / 210 A
1 / 1 (split up in external combiner box)
630 V / 710 V

75000 W
75000 VA
75000 var
3 / PE, 400 V to 480 V, ±10 %
360 V to 530 V
50 Hz / 44 Hz to 55 Hz
60 Hz / 54 Hz to 65 Hz
50 Hz / 400 V
109 A
1 / 0 overexcited to 0 underexcited
≤ 1 %
3 / 3

98.8% / 98.2%
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●
● / ●
Type II / type II + III (combined)
● / —
●
I / AC: III; DC: II

570 / 740 / 306 mm (22.4 / 29.1 / 12.0 inches)
77 kg (170 lb)
-25°C to +60°C (-13°F to +140°F)
58 dB(A)
< 3 W
Transformerless / active
IP65 / NEMA 3R
4K4H/4Z4/4B2/4S3/4M2/4C2
95 %

Screw terminal / screw terminal
Graphical
SunSpec Modbus TCP (via external SMA Inverter Manager)
— / ●
● / ○ / ○ / ○
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, IEC 62117, IEC 62118, IEC 62119, IEC 62120, IEC 62121, IEC 62122, IEC 62123, IEC 62124, IEC 62125, IEC 62126, IEC 62127, IEC 62128, IEC 62129, IEC 62130, IEC 62131, IEC 62132, IEC 62133, IEC 62134, IEC 62135, IEC 62136, IEC 62137, IEC 62138, IEC 62139, IEC 62140, IEC 62141, IEC 62142, IEC 62143, IEC 62144, IEC 62145, IEC 62146, IEC 62147, IEC 62148, IEC 62149, IEC 62150, IEC 62151, IEC 62152, IEC 62153, IEC 62154, IEC 62155, IEC 62156, IEC 62157, IEC 62158, IEC 62159, IEC 62160, IEC 62161, IEC 62162, IEC 62163, IEC 62164, IEC 62165, IEC 62166, IEC 62167, IEC 62168, IEC 62169, IEC 62170, IEC 62171, IEC 62172, IEC 62173, IEC 62174, IEC 62175, IEC 62176, IEC 62177, IEC 62178, IEC 62179, IEC 62180, IEC 62181, IEC 62182, IEC 62183, IEC 62184, IEC 62185, IEC 62186, IEC 62187, IEC 62188, IEC 62189, IEC 62190, IEC 62191, IEC 62192, IEC 62193, IEC 62194, IEC 62195, IEC 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# 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