

SUNNY TRIPOWER 60

STP 60-10



Efficient

- Maximum efficiency of 98.8%
- Superior power density: 60 kVA with only 75 kg of weight

Safe

- Highest PV system availability with 60-kW units
- SMA Inverter Manager as central control unit

Flexible

- DC input voltage of up to 1,000 V
- Flexible DC solutions with PV array junction boxes

Innovative

- Cutting-edge system design

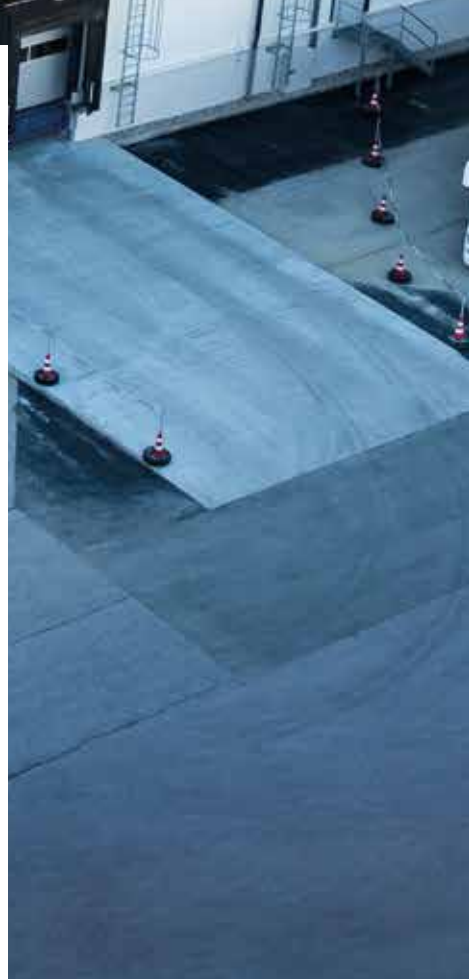
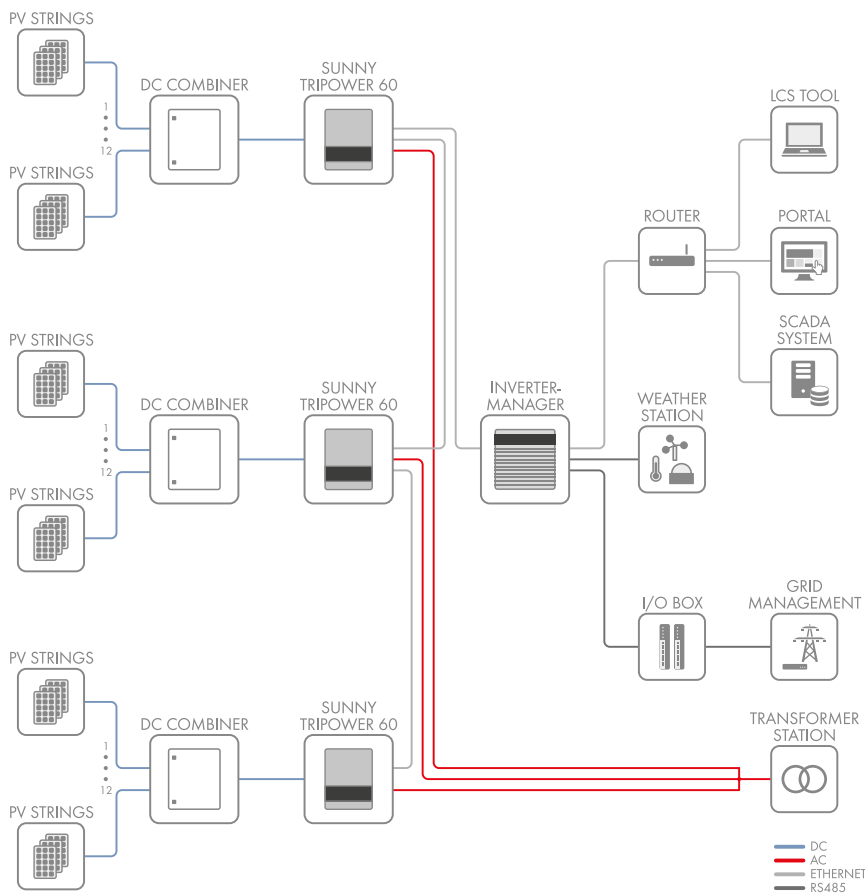
SUNNY TRIPOWER 60

The Best of Two Worlds

The new Sunny Tripower 60 is part of an innovative, global system solution for commercial and industrial PV plants. 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.



THE SMART SUNNY TRIPOWER SYSTEM PHILOSOPHY





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 Tripower 60 so unique and guarantees a high level of performance along with maximum flexibility in system planning and design.

Sunny Tripower 60 inverters with impressive design

No other inverter weighing only 75 kg with an output of 60 kVA offers this. With its compact design, the Sunny Tripower 60 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 the entire system control. It handles all the important inverter and system management functions for up to 42 inverters in

one system (up to 2.5 MW).

Based on the Modbus TCP and SunSpec Alliance Communication, it can be easily integrated into a superior communication system while also ensuring data exchange with external providers. Moreover, the SMA inverter manager handles grid management function exchanges with the grid operator.

Easy commissioning with the LCS commissioning tool

The specially developed LCS tool (Local Commissioning and Service Tool) 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 PV array junction 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.

SYSTEM INFORMATION

Perfect interaction between Sunny Tripower system components

The SMA inverter manager functions as a central interface for up to 42 inverters in the system and handles necessary local adjustments.

External combiner boxes ensure an optimal connection between the PV array and inverter.

Summary: The Sunny Tripower 60 together with the system components is the innovative solution for medium to large-scale power ranges and offers users the best of two worlds.

*Different configurations can be delivered upon request

Technical Data, as of February 2015

Input (DC)

Max. input voltage
MPP voltage range
Min. input voltage
Max. input current / short-circuit current
Number of independent MPP inputs / strings per MPP input
DC rated power input

Output (AC)

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

Efficiency

Max. Efficiency / Euro-eta / CEC @ 400 Vac / CEC @ 480 Vac
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Protective devices

DC-side disconnection device
Ground fault monitoring / grid monitoring
Type I DC surge arrester / type I AC surge arrester
DC reverse polarity protection / AC short-circuit current capability / galvanically isolated
All-pole sensitive residual-current monitoring unit
Protection class (as per IEC 61140) / overvoltage category (as per IEC 60664-1)

General Data

Dimensions (W / H / D) / weight
Operating temperature range
Noise emission, typical
Self-consumption (at night)
Topology / cooling concept / degree of protection (IEC 60529/ UL50E) / climatic category (IEC 60721-3-4)
Max. permissible value for relative humidity (non-condensing)

Features

DC connection / AC connection

Display

Interface

● Standard features ○ Optional features – Not available, Data at nominal conditions

Sunny Tripower 60

1000 V
570 V - 800 V @400 Vac, 685 V - 800 V @480 Vac
565 V @400 Vac, 680 V @480 Vac
110 A / 150 A
1/1 (split up by external PV array junction box)
630 Vdc @ 400 Vac, 710 Vdc @ 480 Vac

60000 W
60000 VA
60000 Var
3 / PE, 400 V - 480 V, ±10 %
400 V - 480 V
50 Hz / 60 Hz ±10 %
50 Hz, 60 Hz / 400 V, 480 V
3 x 87 A
1 / 0.8 overexcited to 0.8 underexcited
3 / 3

98.8 % / 98.3 % / 98.0 % / 98.5 %

●
● / ●
Type II / type II + III (combined)
● / ● / -
●
I / AC: III; DC: II

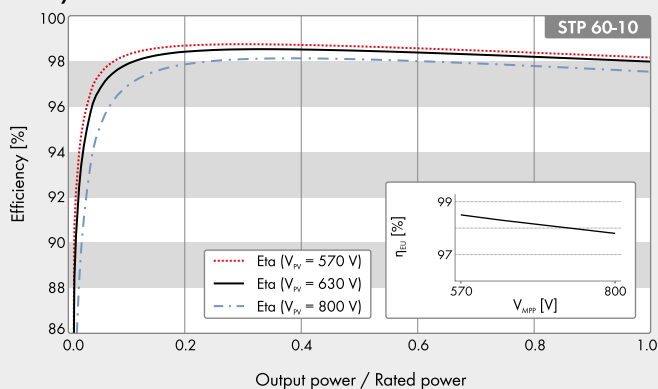
570 / 740 / 300 mm (22.4 / 29.1 / 11.8 inch) / 75 kg (165.3 lbs)
-25 °C to +60 °C (-13 °F ... +140 °F)
58 dB(A)
3W
Transformerless / active / IP65 / 3R, 4K4H
95 %

Screw terminal / screw terminal

Graphic

using external SMA Inverter Manager: SunSpec Modbus TCP

Efficiency Curve



Ordering Codes

STP 60:
 STP60-10: EU version with integrated DC disconnect
 STP60-10-US: US version with integrated DC disconnect

SMA inverter manager:

IM-10: SMA inverter manager for up to 42 inverters

SMA Digital I/O Box:

IM-DIO-10: SMA Digital I/O Box with 6 digital inputs

Certificates and approvals

STP 60: IEC 62109-1/IEC 62109-2 (Class I, grounded-communication Class II, PELV), UL1741-w. Non-Isolated EPS Interactive PV Inverters, IEEE 1547

SMA Inverter Manager: UL 508, UL 60950-1, CSA C22.2 No. 60950-1-07, EN 60950-1, EN 55022 Class A, EN 61000-3-2 Class D, EN 61000-3-3, EN 55024, FCC Part 15, Subpart B Class A

SMA Inverter Manager

Voltage Supply

Input voltage
Power consumption

General Data

Dimensions (W / H / D) / weight
Degree of protection / assembly
Operating temperature range / relative humidity

Interfaces

User interface
Sensor interface
Active/reactive power setpoint)
Interface to inverter
Interface to external network
Interface to remote control

9 - 36 Vdc

< 20 W

160 / 125 / 49 mm (6.3 / 4.9 / 1.9 inch) / 940 g (2 lbs)
IP21 / DIN top-hat rails or wall mounting
-40 °C to +85 °C / 5 % ... 95 % (non-condensing)

LCS tool for PC

RS485 for SunSpec Alliance compatible weather stations

Constant value, curve, remotely controlled

1 Ethernet port (RJ45)

1 Ethernet port (RJ45) Modbus TCP, SunSpec Alliance

6 x DI, Modbus TCP via external I/O module