

# SUNNY TRIPOWER CORE1

## STP 50-41



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**SMA ShadeFix**  
STRING LEVEL OPTIMIZATION

**NOW with**  
**Arc-fault circuit interrupter**  
**and I-V curve diagnoses**

### Cost-Effective

- Floor-mounted device easy to install
- No DC fuses required
- Integrated DC disconnect

### Highly Integrated

- Integrated Wi-Fi access with any mobile device
- 12 direct string inputs reduce labor and material costs
- Arc-fault circuit interrupter (AFCI)
- AC/DC overvoltage protection (optional)

### Fastest Installation

- Fast grid connection due to easy inverter configuration and commissioning
- Completely accessible connection areas

### Maximum Yields

- Up to 150% DC:AC ratio
- Yield increase without installation effort due to integrated shade management SMA ShadeFix
- I-V Generator diagnosis

## SUNNY TRIPOWER CORE1

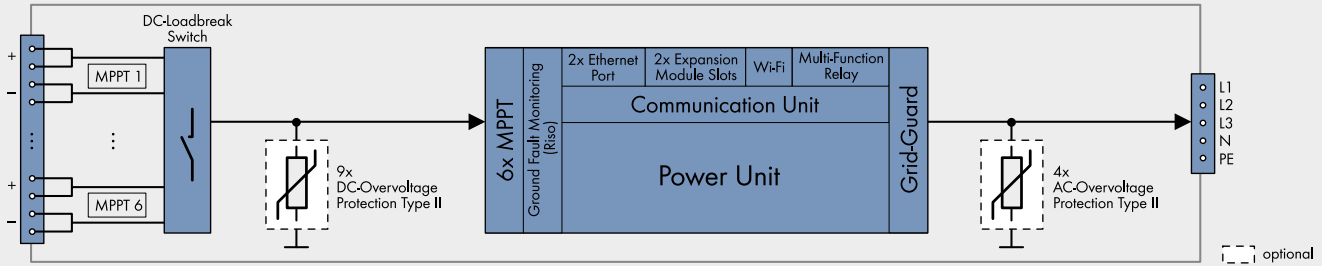
Stands on its own

The Sunny Tripower CORE1 is the world's first free-standing string inverter for decentralized rooftop and ground-based PV systems as well as covered parking spaces. The CORE1 is the third generation in the successful Sunny Tripower product family and is revolutionizing the world of commercial inverters with its innovative design. SMA engineers developed an inverter that combines a unique design with an innovative installation method to significantly reduce installation time and provide all target groups with a maximum return on investment.

From delivery and installation to operation, the Sunny Tripower CORE1 generates widespread savings in logistics, labor, materials and services. Commercial PV installations are now quicker, more reliable and easier to complete than ever before.

## BLOCK DIAGRAM

STP 50-41



### Technical Data

#### Input (DC)

Max. generator power	75000 W <sub>p</sub> STC
Max. input voltage	1000 V
MPP voltage range / rated input voltage	500 V to 800 V / 670 V
Min. input voltage / start input voltage	150 V / 188 V
Max. operating input current / per MPPT	120 A / 20 A
Max. short circuit current per MPPT / per string input	30A / 30A
Number of independent MPPT inputs / strings per MPP input	6 / 2

#### Output (AC)

Rated power (at 230 V, 50 Hz)	50000 W
Rated / Max. apparent power	50000 VA / 50000 VA
Rated voltage	220 V / 380 V 230 V / 400 V 240 V / 415 V
Voltage range	202 V to 305 V
Grid frequency / range	50 Hz / 44 Hz to 55 Hz 60 Hz / 54 Hz to 65 Hz
Rated power frequency / rated grid voltage	50 Hz / 230 V
Rated / Max. output current	72.5 A / 72.5 A
Output phases / AC connection	3 / 3-(N)-PE
Power factor at rated power / Adjustable displacement power factor	1 / 0.0 leading to 0.0 lagging
THD	< 3%

#### Protective devices

Input-side disconnection 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 62109-1) / overvoltage category (according to IEC 62109-1)	I / AC: III; DC: II
Arc-fault circuit interrupter (AFCI) / I/V Generator diagnosis	● / ●
AC/DC surge arrester (type 2, type 1/2)	○

● Standard features ○ Optional — Not available ▲ Depending on availability Data at nominal conditions - status: 01/2022

### Technical Data

#### Efficiency

Max. efficiency / European efficiency	98.1% / 97.8%
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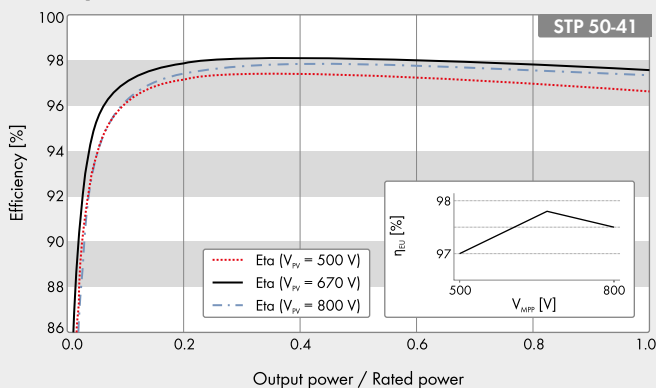
#### General data

Dimensions (W/H/D) without feet or DC load break switch	569 mm / 733 mm / 621 mm (22.4 in / 28.8 in / 24.4 in)
Weight	84 kg (185 lb)
Operating temperature range	-25°C to +60°C (-13°F to +140°F)
Noise emission (typical)	< 65 dB(A)
Self-consumption (at night)	4.8 W
Topology / Cooling concept	Transformerless / OptiCool
Degree of protection (as per IEC 60529)	IP65
Climatic category (according to IEC 60721-3-4)	4K4H
Max. permissible value for relative humidity (non-condensing)	100%

#### Features / functions / accessories

DC connection / AC connection	SUNCLIX / screw terminal
Mounting feet	●
LED indicators (status / fault / communication)	●
LC display	○
Interface: Ethernet / WLAN / RS485	● (2 ports) / ▲ / ○
Data interface: SMA Modbus / SunSpec Modbus / Speedwire, Webconnect	● / ● / ●
Multi-Function relay / Expansion Module Slots	● / ● (2 ports)
Shade management SMA ShadeFix / Integrated Plant Control / Q on Demand 24/7	● / ● / ●
Off-grid capable / SMA Fuel Save Controller compatible	● / ●
Guarantee: 5 / 10 / 15 / 20 years	● / ○ / ○ / ○
Certificates and permits (more available on request)	C10/11:2019, EN50549-1/-2, CE, VDE 0126-1-1, VDE AR-N 4110, VDE AR-N 4105:2018, NRS097-2-1:2017 (A3), CEI 0-16/0-21: 2020, VFR 2019, RD 1699/413, RD 661, TED/749/2020, AS 4777, IEC 61727, IEC 62109-1/2, IEC 62116, IEC 60068-2-x, TOR Erzeuger, G99, NBR 16149
Type designation	STP 50-41

## Efficiency Curve



## Assessories

SMA Sensor Module MD.SEN-40	SMA IO-Module MD.IO-40
SMA RS485 Module MD.485-40	Universal Mounting System UMS_KIT-10
AC Surge Protection Module Kit type 2, type 1/2 AC_SPD_Kit1-10, AC_SPD_KIT2_T1T2 DC Surge Protection Module Kit type 2, type 1/2 DC_SPD_Kit4-10, DC_SPD_KIT5_T1T2	