

SUNNY TRIPOWER CORE1



STP50-US-40 / STP50-40

**WORLD'S FIRST
FREE-STANDING
COMMERCIAL INVERTER**

**UP TO 60% FASTER
INSTALLATION FOR
COMMERCIAL PV SYSTEMS**

Highly integrated

- Compact design with maximum power density achieves logistical cost savings
- 12 direct string inputs enable reduced labor and material costs
- Integrated AC and DC overvoltage protection

Maximum energy harvest

- Unique design allows for DC:AC ratios up to 150%, maximizing power throughout the day
- Six MPP trackers ensure maximum production in any application or shading situation

Cost effective

- Integrated AC and DC disconnects save material costs
- No racking required for rooftop applications, creating additional cost savings
- No PV fuses required

Fastest installation

- Built in Wi-Fi access from any mobile device makes accessing the CORE1 easy and effective
- Simplified inverter configuration and commissioning, which accelerates installation and saves installers' valuable time

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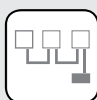
It stands on its own

The Sunny Tripower CORE1 is the world's first free-standing PV inverter for commercial rooftops, carports and ground-mount solar projects. As the next generation of SMA's industry leading Sunny Tripower product line, the CORE1 revolutionizes the commercial inverter category. Its innovative design reduces both installation time and costs to provide the highest return on investment. From distribution to construction to operation, the Sunny Tripower CORE1 enables logistical, material, labor and service cost reductions. With built-in Wi-Fi for fast commissioning, advanced communications and smart inverter grid support functions, commercial installations are up and running faster and simpler than ever.

Technical data*	Sunny Tripower CORE1 (US)	Sunny Tripower CORE1 (IEC)
Input (DC)		
Max. usable DC power (@ cos φ = 1)	51000 W	51000 W
DC Voltage (max)	1000 V	1000 V
Rated MPPT voltage range	500 V... 800 V	500 V... 800 V
MPPT operating voltage range	150 V... 1000 V	150 V... 1000 V
Min. DC voltage / start voltage	150 V / 188 V	150 V / 188 V
Number of independent MPP trackers / strings per MPP input	6 / 2	6 / 2
Max. operating input current / per MPP tracker	120 A / 20 A	120 A / 20 A
Max. short circuit current per MPPT / string input	30 A / 30 A	30 A / 30 A
Output (AC)		
AC nominal power	50000 W	50000 W
Max. AC apparent power	53000 VA	50000 VA
Output phases / line connections	3 / 3-N-PE	3 / 3-N-PE
Nominal AC voltage	480 V / 277 V WYE	400 V / 230 V
AC voltage range	244 V... 305 V	202... 264 V
Rated AC grid frequency	60 Hz	50 Hz
AC grid frequency / range	50 Hz, 60 Hz / -6 Hz... +5Hz	50 Hz, 60 Hz / -6 Hz... +5Hz
Max. output current	64 A	72.5 A
Power factor at rated power / adjustable displacement	1 / 0.0 leading... 0.0 lagging	1 / 0.0 leading... 0.0 lagging
Harmonics THD	<3%	<3%
Efficiency		
Max. efficiency / CEC efficiency / European efficiency	>98% / >98% / >98%	>98% / >98% / >98%
Protection devices		
Load rated DC disconnect switch	●	●
Load rated AC disconnect switch	●	-
DC reverse polarity protection	●	●
Ground fault monitoring / grid monitoring	● / ●	● / ●
All-pole sensitive residual current monitoring	●	●
DC AFCI compliant to UL 1699B	●	-
DC surge arrester (Type II)	○	○
AC short circuit protection	●	●
AC surge arrester (Type II)	○	○
Protection class / overvoltage category (as per UL840)	I / IV	-
Protection class (as per IEC 60664-1) / overvoltage category (as per IEC 60664-1)	-	I / AC: III; DC: II
General data		
Dimensions (W / H / D)	621 mm / 733 mm / 569 mm (24.4 in x 28.8 in x 22.4 in)	621 mm / 733 mm / 569 mm (24.4 in x 28.8 in x 22.4 in)
Device weight	82 kg (180 lbs)	82 kg (180 lbs)
Operating temperature range	-25 °C... +60 °C	-25 °C... +60 °C
Storage temperature range	-40 °C... +70 °C	-40 °C... +70 °C
Audible noise emissions (full power @ 1m and 25 °C)	<60 dB (A)	<60 dB (A)
Internal consumption at night	<5 W	<5 W
Topology	Transformerless	Transformerless
Cooling Concept	OptiCool	OptiCool
Enclosure protection rating	Type 4X, 3S (as per UL 50E)	IP65 (as per IEC 60529)
Climatic category (according to IEC 60721-3-4)	-	4K4H
Maximum permissible value for relative humidity (non-condensing)	100%	100%
Features		
DC-Connection	Amphenol UTX PV connectors	SUNCLIX PV connectors
AC-Connection	Screw terminal	Screw terminal
LED indicators (Status / Fault / Communication)	●	●
Interface: Ethernet / WLAN / RS485	● (2 ports) / ● / ○	● (2 ports) / ● / ○
Data protocols: SMA Modbus / SunSpec Modbus / Webconnect	● / ● / ●	● / ● / ●
Multifunction relay	●	●
Mounting	free-standing	free-standing
OptiTrac Global Peak / Integrated Plant Control / Q on Demand 24/7	● / ● / ●	● / ● / ●
Off-Grid capable / SMA Fuel Save Controller compatible	● / ●	● / ●
Warranty: 5/10/15/20 years	- / ● / ○ / ○	● / ○ / ○ / ○
Certifications and approvals	pending: UL 1741, UL 1998, UL 1699B, IEEE 1547, FCC Part 15 (Class A & B), UL 1741 SA advanced inverter capabilities	pending: BDEW 2008, CE, IEC 61727, IEC 62109-1/2, IEC 62116, VDE 0126-1-1, VDE-AR-N 4105 additional regional certifications available on request
○ Optional features ● Standard features - Not available		
Type designation	STP50-US-40	STP50-40



SMA Sensor Module
MD.SEN-US-40



SMA RS485 Module
MD.485-US-40



Antenna Extension Kit
EXTANT-US-40



AC Surge Protection Module Kit
AC_SPD_Kit1-10
DC Surge Protection Module Kit
DC_SPD_Kit4-10