SUNNY TRIPOWER CORE1
STP 50-JP-40



Highly integrated

- Compact design with maximum power density and energy efficiency, lowers transportation costs, Twelve direct string inputs for savings on construction and materials
- Integrated AC and DC overvoltage protection

Maximum power generation

- Its unique design allows for ratios up to 150%, maximizing power generation throughout the day
- Six MPP trackers ensure maximum energy yield for all purposes, even in the shade

Cost effective

- Simple installation with no mount required
- Built-in DC splice box and DC load-break switch

Faster installation

- Built-in Wi-Fi access from any mobile device makes accessing the CORE1 easy and effective
- Yield increase without additional equipment thanks to integrated SMA ShadeFix shade management system

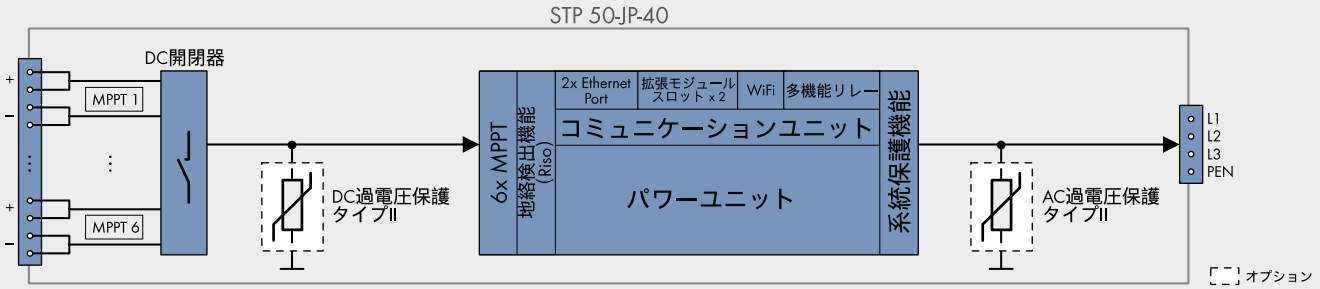
SUNNY TRIPOWER CORE1

Free-standing string inverter

The Sunny Tripower CORE1 is the world's first free-standing string inverter for not only large-scale power plants that sell all their generated power, but also home PV systems. 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 and operation, the Sunny Tripower CORE1 lowers logistical, material, labor and service costs.

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.

BLOCK DIAGRAM



Technical Specifications	Sunny Tripower CORE1
Input (DC)	
Max. generator power	75000 Wp
Max. input voltage	1000 V
MPP voltage range	500 V to 800 V
Min. input voltage / start input voltage	150 V / 188 V
Max. operating input current / per MPP input	120 A / 20 A
Max. short circuit current per MPP input / per string input	30A / 30A
Number of MPP circuits / strings	6 / 2
Output (AC)	
Rated power (at 230 V, 50 Hz)	50000 W
Max. AC apparent power	50000 VA
Electrical modes	3-phase 3-wire
AC voltage range	350 V to 530 V
Rated frequency / range	50 Hz / 44 Hz to 55 Hz 60 Hz / 54 Hz to 65 Hz
Rated output voltage / rated output frequency	420 V (50 Hz) / 440 V (60 Hz)
Max. output current / Rated output current	72.5 A / 72.5 A
Power factor / Adjustable range	1 / 0.0 leading to 0.0 lagging
Total harmonic distortion	<3%
Protective Devices	
Input-side break switch	●
Ground fault monitoring / utility grid monitoring	● / ●
DC reverse polarity protection / AC short circuit resistance / galvanic isolation	● / ● / –
All-pole-sensitive AC/DC residual-current monitoring unit	●
Protection rating (based on IEC 62109-1) / overvoltage category (based on IEC 62109-1)	I / AC: III; DC: II
AC/DC surge arrester (Type 2, type 1/2)	○

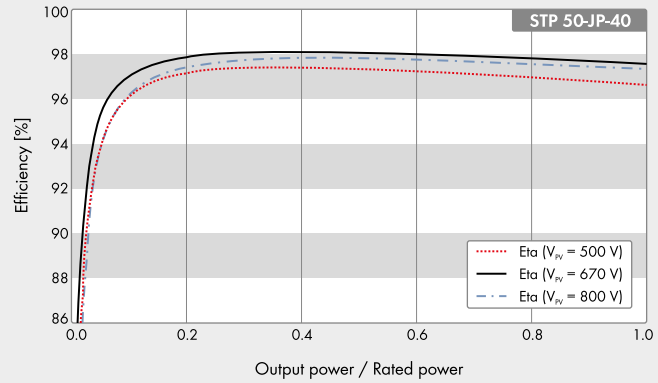
Technical Specifications		Sunny Tripower CORE1
Efficiency		
Max. efficiency / European efficiency / Efficiency based on JIS C 8961		98.1% / 97.8% / 97.5%
General Data		
Dimensions (W / H / D)*		569 mm / 733 mm / 621 mm
Weight		84 kg
Operating temperature range		-25°C to +60°C
Noise emission (typical)		<65 dB(A)
Self-consumption (at night)		4.8 W
Isolation system / Cooling system		Transformerless / OptiCool
Protection rating (based on IEC 60529)		IP65
Climatic category (based on IEC 60721-3-4)		4K4H
Max. permissible value for relative humidity (non-condensing)		100%
Features / Functions / Accessories		
DC terminal/ AC terminal		SUNCLIX / screw terminal
Mounting base		●
LED indicators (Status / Fault / Communication)		●
Interface: Ethernet / WLAN / RS485		● (2 ports) / ● / ○
Data interface: SMA Modbus / SunSpec Modbus / Speedwire, Webconnect		● / ● / ●
Multifunction relay / Extension module slots		● / ● (2 ports)
Integrated SMA ShadeFix shade management system / Integrated Plant Control / Q on Demand 24/7		● / ● / ●
Off-grid capable / SMA Fuel Save Controller compatible		● / ●
Grid Connection Requirements	FRT	●
	Manual restart	●
Guarantee: 5/10/15/20 years		● / ○ / ○ / ○

● Standard feature ○ Optional feature – Not available
Data based on nominal conditions - preliminary version: 02/2020

*Excl the base and DC load-break switch

Model number	STP 50-JP-40

Efficiency Curve



Accessories

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

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