



# SUNNY TRIPOWER CORE1 33-US / 50-US / 62-US

STP33-US-41 / STP50-US-41 / STP62-US-41

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



### Fully integrated

- Innovative design requires no additional racking for rooftop installation
- Integrated DC and AC disconnects and overvoltage protection
- 12 direct string inputs for reduced labor and material costs

### Increased power, flexibility

- Multiple power ratings for small to large scale commercial PV installations
- Six MPP trackers for flexible stringing and maximum power production
- OptiTrac™ Global Peak shade tolerant MPP tracking

### Enhanced safety, reliability

- Integrated SunSpec PLC signal for module-level rapid shutdown compliance to 2017 NEC
- Next-gen DC AFCI arc-fault protection certified to new Standard UL 1699B

### Smart monitoring, control, service

- Advanced smart inverter grid support capabilities
- Increased ROI with SMA ennexOS cross sector energy management platform
- SMA Smart Connected proactive O&M solution reduces time spent diagnosing and servicing in the field

## SUNNY TRIPOWER CORE1 33-US / 50-US / 62-US

It stands on its own

The Sunny Tripower CORE1 is the world's first free-standing PV inverter for commercial rooftops, carports, ground mount and repowering legacy solar projects. Now with expanded features and new power classes, the CORE1 is the most versatile, cost-effective commercial solution available. From distribution to construction to operation, the Sunny Tripower CORE1 enables logistical, material, labor and service cost reductions. Integrated SunSpec PLC for rapid shutdown and enhanced DC AFCI arc-fault protection ensure compliance to the latest safety codes and standards. With Sunny Tripower CORE1 and SMA's ennexOS cross sector energy management platform, system integrators can deliver comprehensive commercial energy solutions for increased ROI.

| Technical data*  | Sunny Tripower CORE1 33-US   | Sunny Tripower CORE1 50-US | Sunny Tripower CORE1 62-US |
|--|--|----------------------------|----------------------------|
| <b>Input (DC)</b>  |  |                            |                            |
| Maximum array power  | 50000 Wp STC   | 75000 Wp STC               | 93750 Wp STC               |
| Maximum system voltage   | 1000 V   |                            |                            |
| Rated MPP voltage range  | 330 V... 800 V   | 500 V... 800 V             | 550 V... 800 V             |
| MPPT operating voltage range                                   | 150 V... 1000 V  |                            |                            |
| Minimum DC voltage / start voltage                             | 150 V / 188 V  |                            |                            |
| MPP trackers / strings per MPP input                           | 6/2  |                            |                            |
| Maximum operating input current / per MPP tracker              | 120 A / 20 A   |                            |                            |
| Maximum short circuit current per MPPT / per string input      | 30 A / 30 A  |                            |                            |
| <b>Output (AC)</b>   |  |                            |                            |
| AC nominal power   | 33300 W  | 50000 W                    | 62500 W                    |
| Maximum apparent power   | 33300 VA   | 53000 VA                   | 66000 VA                   |
| Output phases / line connections                               | 3 / 3-(N)-PE   |                            |                            |
| Nominal AC voltage   | 480 V / 277 V WYE  |                            |                            |
| AC voltage range   | 244 V... 305 V   |                            |                            |
| Maximum output current   | 40 A   | 64 A                       | 79.5 A                     |
| Rated grid frequency   | 60 Hz  |                            |                            |
| Grid frequency / range   | 50 Hz, 60 Hz / -6 Hz... +6Hz   |                            |                            |
| Power factor at rated power / adjustable displacement          | 1 / 0.0 leading... 0.0 lagging   |                            |                            |
| Harmonics THD  | <3%  |                            |                            |
| <b>Efficiency</b>  |  |                            |                            |
| CEC efficiency (preliminary)                                   | 97.5%  | 98%                        | 98%                        |
| <b>Protection and safety features</b>                          |  |                            |                            |
| Load rated DC disconnect                                       | ●  |                            |                            |
| Load rated AC disconnect                                       | ●  |                            |                            |
| Ground fault monitoring: Riso / Differential current           | ● / ●  |                            |                            |
| DC AFCI arc-fault protection                                   | ●  |                            |                            |
| SunSpec PLC signal for rapid shutdown                          | ●  |                            |                            |
| DC reverse polarity protection                                 | ●  |                            |                            |
| AC short circuit protection                                    | ●  |                            |                            |
| DC surge protection: Type 2 / Type 1+2                         | ○ / ○  |                            |                            |
| AC surge protection: Type 2 / Type 1+2                         | ○ / ○  |                            |                            |
| Protection class / overvoltage category (as per UL 840)        | I / IV   |                            |                            |
| <b>General data</b>  |  |                            |                            |
| Device dimensions (W/H/D)                                      | 621 mm / 733 mm / 569 mm (24.4 in x 28.8 in x 22.4 in)                                     |                            |                            |
| Device weight  | 84 kg (185 lbs)  |                            |                            |
| Operating temperature range                                    | -25 °C... +60 °C (-13 °F... +140 °F)   |                            |                            |
| Storage temperature range                                      | -40 °C... +70 °C (-40 °F... +158 °F)   |                            |                            |
| Audible noise emissions (full power @ 1m and 25 °C)            | 65 dB(A)   |                            |                            |
| Internal consumption at night                                  | 5 W  |                            |                            |
| Topology   | Transformerless  |                            |                            |
| Cooling Concept  | OptiCool (forced convection, variable speed fans)  |                            |                            |
| Enclosure protection rating                                    | Type 4X, 3SX (as per UL 50E)   |                            |                            |
| Maximum permissible relative humidity (non-condensing)         | 100%   |                            |                            |
| <b>Additional information</b>                                  |  |                            |                            |
| Mounting   | Free-standing with included mounting feet  |                            |                            |
| DC connection  | Amphenol UTX PV connectors   |                            |                            |
| AC connection  | Screw terminals - 4 AWG to 4/0 AWG CU/AL   |                            |                            |
| LED indicators (Status / Fault / Communication)                | ●  |                            |                            |
| Network interfaces: Ethernet / WLAN / RS485                    | ● (2 ports) / ● / ○  |                            |                            |
| Data protocols: SMA Modbus / SunSpec Modbus / Webconnect       | ● / ● / ●  |                            |                            |
| Multifunction relay  | ●  |                            |                            |
| OptiTrac Global Peak (shade-tolerant MPP tracking)             | ●  |                            |                            |
| Integrated Plant Control / Q on Demand 24/7                    | ● / ●  |                            |                            |
| Off-Grid capable / SMA Fuel Save Controller compatible         | ● / ●  |                            |                            |
| SMA Smart Connected (proactive monitoring and service support) | ●  |                            |                            |
| <b>Certifications</b> (pending as of June 2018)                |  |                            |                            |
| Certifications and approvals                                   | UL 1741, UL 1699B, UL 1998, IEEE 1547, CAN/CSA-C22.2 No. 62109                             |                            |                            |
| FCC compliance   | FCC Part 15 Class A  |                            |                            |
| Grid interconnection standards                                 | UL 1741 SA - CA Rule 21, HECO Rule 14H   |                            |                            |
| Advanced grid support capabilities                             | L/HVRT, L/HVRT, Volt-VAr, Volt-Watt, Frequency-Watt, Ramp Rate Control, Fixed Power Factor |                            |                            |
| <b>Warranty</b>  |  |                            |                            |
| Standard   | 10 years   |                            |                            |
| Optional extensions  | 15 / 20 years  |                            |                            |
| ○ Optional features   ● Standard features   - Not available    | * Preliminary data as of June 2018   |                            |                            |
| Type designation   | STP33-US-41  | STP50-US-41                | STP62-US-41                |



SMA Data Manager M  
EDMM-US-10



SMA Sensor Module  
MD.SEN-US-40



Universal Mounting System  
UMS\_KIT-10



AC Surge Protection Module Kit  
AC\_SPD\_KIT1-10, AC\_SPD\_KIT2\_T1T2  
DC Surge Protection Module Kit  
DC\_SPD\_KIT4-10, DC\_SPD\_KIT5\_T1T2