

# CONNECTION UNIT 1000-US

CU 1000-US-10



The Connection Unit is an optional system component of the Sunny Tripower TL-US series and includes combiner box and disconnect functionality in one convenient housing. Its integrated reverse polarity indicator supports safe installation.

Technical data	Connection Unit 1000 V	
<b>Input (DC)</b>		
Max. DC voltage	1000 V	
Number of input source circuits (strings)	8 (4 + 4)	
Input conductor size	#12 to #6 AWG	
Max. fuse size	20 A	
<b>Output (DC)</b>		
Output circuits	2	
Output conductor size	#12 to #2 AWG	
Max. rated continuous current / per output circuit	66 A / 33 A	
<b>Protection devices</b>		
Touchsafe fuse holders	●	
Reverse polarity indicator	●	
Load-break rated output disconnect	●	
<b>General data</b>		
Dimensions (W / H / D) in mm (in)	500 / 380 / 140 (19.7 / 15.0 / 5.5)	
Packing dimensions (W / H / D) in mm (in)	520 / 420 / 200 (20.5 / 16.5 / 7.9)	
Weight	5.5 kg (12 lbs)	
Packing weight	6.0 kg (13 lbs)	
Protection rating	NEMA 3R	
<b>Features</b>		
Certificates and permits (pending)		
● Standard features   ○ Optional features   – Not available		
Type designation	CU 1000-US-10	

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# SUNNY TRIPOWER

12000TL-US / 15000TL-US / 20000TL-US / 24000TL-US



STP 12000TL-US-10 / STP 15000TL-US-10 / STP 20000TL-US-10 / STP 24000TL-US-10



RATED FOR  
1000 V DC & 600 V DC  
SYSTEMS



## Design flexibility

- 1000 V DC or 600 V DC
- Two independent DC inputs
- 15° to 90° mounting angle range
- Detachable DC Connection Unit

## System efficiency

- 98% CEC, 98.5% Peak
- 1000 V DC increases system efficiency
- OptiTrac advanced MPPT
- OptiTrac Global Peak MPPT

## Enhanced safety

- Integrated DC AFCI
- Floating system with all-pole sensitive ground fault protection
- Reverse polarity indicator

## Future-proof

- Cluster Controller, WebConnect/Speedwire
- Bi-directional Ethernet communications
- Complete grid management feature set
- Ability to satisfy future utility requirements

## SUNNY TRIPOWER

12000TL-US / 15000TL-US / 20000TL-US / 24000TL-US

The ultimate solution for decentralized PV plants

SMA's new Sunny Tripower TL-US is raising the level of performance for decentralized commercial PV plants. This three-phase transformerless inverter is UL listed for up to 1000 V DC maximum system voltage and has peak efficiency above 98 percent, while OptiTrac Global Peak minimizes the effects of shade for maximum energy production. The Sunny Tripower delivers a future-proof solution with full grid management, and communications and monitoring features. The Sunny Tripower is also equipped with all-pole ground fault protection and integrated AFCI for a safe, reliable solution. It offers unmatched flexibility with a wide input voltage range and two independent MPP trackers. Suitable for both 600 V DC and 1,000 V DC applications, the Sunny Tripower allows for flexible design and a lower levelized cost of energy.



## THE TOTAL PACKAGE

The Sunny Tripower TL-US is engineered to optimize design, production, and reliability—reducing a project's levelized cost of energy and improving its financial returns.

### **Unmatched flexibility**

Available in four power classes, the Sunny Tripower TL-US features a wide operating window, two MPP trackers, and 600 V DC or 1,000 V DC operation, making it ideal for any decentralized project. System engineering is made simple and repeatable, resulting in a shortened design cycle.

Easy to transport and install, the Sunny Tripower can be mounted in a variety of ways from vertical to nearly horizontal. Concrete pads usually required by central inverters are unnecessary, preserving site real estate.

### **Enhanced power production**

Leading efficiency and SMA's proprietary OptiTrac Global Peak MPP tracking means owners benefit from superior power production and improved economics. When operated at 1,000 V DC, balance of system costs can also be significantly reduced.

The Sunny Tripower TL-US also features advanced diagnostics, including a reverse polarity indicator via the Connection Unit 1000-US.

### **Future proof**

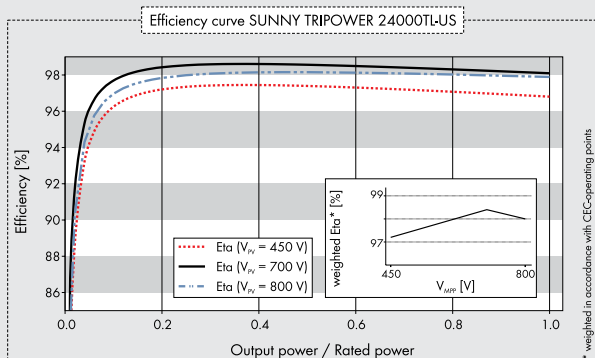
The Sunny Tripower TL-US includes a number of technologies designed to meet tomorrow's requirements. Full grid management functionality is available, as are cutting edge communication options like SMA's Cluster Controller and Speedwire.

SMA Service can also simplify long-term planning with comprehensive packages covering inverters through plant-wide operations and maintenance (O&M). And, as a decentralized technology, inverter-level O&M is reduced from the beginning compared to centralized architecture.

### **Optimized cost**

The Sunny Tripower TL-US allows integrators to optimally use real estate, shorten design and installation time, and produce more power. Inverter-level O&M is reduced through string technology and long-term support is made simple through SMA's service organization, making the Sunny Tripower TL-US the ultimate solution for decentralized PV.

Technical data	Sunny Tripower 12000TL-US	Sunny Tripower 15000TL-US	Sunny Tripower 20000TL-US	Sunny Tripower 24000TL-US
<b>Input (DC)</b>				
Max. recommended PV power (@ module STC)	15000 W	18750 W	25000 W	30000 W
Max. DC voltage*	1000 V	1000 V	1000 V	1000 V
Rated MPPT voltage range	300 V...800 V	300 V...800 V	380 V...800 V	450 V...800 V
MPPT operating voltage range	150 V...1000 V	150 V...1000 V	150 V...1000 V	150 V...1000 V
Min. DC voltage / start voltage	150 V / 188 V	150 V / 188 V	150 V / 188 V	150 V / 188 V
Number of MPP tracker inputs	2	2	2	2
Max. input current / per MPP tracker input	66 A / 33 A	66 A / 33 A	66 A / 33 A	66 A / 33 A
<b>Output (AC)</b>				
AC nominal power	12000 W	15000 W	20000 W	24000 W
Max. AC apparent power	12000 VA	15000 VA	20000 VA	24000 VA
Output phases / line connections	3 / 3-NPE			
Nominal AC voltage	480 / 277 V WYE			
AC voltage range	244 V...305 V			
Rated AC grid frequency	60 Hz			
AC grid frequency / range	50 Hz, 60 Hz / 44 Hz...65 Hz			
Max. output current	14.4 A	18 A	24 A	29 A
Power factor at rated power / adjustable displacement	1 / 0.8 leading...0.8 lagging			
Harmonics	< 3 %			
<b>Efficiency</b>				
Max. efficiency	98.2 %	98.2 %	98.5 %	98.5 %
CEC efficiency	97.5%	97.5%	97.5%	98.0%
<b>Protection devices</b>				
DC reverse polarity protection	●	●	●	●
Ground fault monitoring / Grid monitoring	●	●	●	●
All-pole sensitive residual current monitoring unit	●	●	●	●
DC AFCI compliant to UL 1699B	●	●	●	●
AC short circuit protection	●	●	●	●
Protection class / overvoltage category	I / IV	I / IV	I / IV	I / IV
<b>General data</b>				
Dimensions (W / H / D) in mm (in)	665 / 690 / 265 (26.1 / 27.1 / 10.4)			
Packing dimensions (W / H / D) in mm (in)	780 / 790 / 380 (30.7 / 31.1 / 15.0)			
Weight	55 kg (121 lbs)			
Packing weight	61 kg (134.5 lbs)			
Operating temperature range	-25 °C...+60 °C			
Noise emission (typical)	51 dB(A)			
Internal consumption at night	1 W			
Topology	Transformerless			
Cooling concept	OptiCool			
Electronics protection rating	NEMA 3R			
<b>Features</b>				
Display / LED indicators (Status / Fault / Communication)	- / ●	- / ●	- / ●	- / ●
Interfaces: Speedwire / RS485	● / ○	● / ○	● / ○	● / ○
Mounting Angle Range	15°...90°	15°...90°	15°...90°	15°...90°
Warranty: 10 / 15 / 20 years	● / ○ / ○	● / ○ / ○	● / ○ / ○	● / ○ / ○
Certifications and approvals (pending)	UL 1741, UL 1998, UL 1699B, IEEE 1547, FCC Part 15 (Class A & B), CAN/CSA C22.2 107.1-1			
NOTE: US inverters ship with gray lids				
*Suitable for 600 V DC max. systems				
Type designation	STP 12000TL-US-10	STP 15000TL-US-10	STP 20000TL-US-10	STP 24000TL-US-10



## Accessories



RS485 interface  
DM-485CB-US-10



SMA Cluster Controller  
CLCON-10

- Standard features   ○ Optional features   – Not available  
Data at nominal conditions