

# SUNNY TRIPOWER X 12 / 15 / 20 / 25

## powered by ennexOS



STP 12-50 / STP 15-50 / STP 20-50 / STP 25-50

**At market launch:  
Free license for  
SMA Dynamic Power Control**



**SMA  
ShadeFix**



**SMA  
ArcFix**



**SMA  
Smart Connected**

### Integrated system manager

- Monitoring and control for up to 5 inverters (max. 135 kVA) included
- Direct access to Sunny Portal powered by ennexOS
- SMA Dynamic Power Control

### Safety included

- SMA ArcFix arc-fault circuit interrupter
- DC overvoltage protection
- Simplified grid and PV system protection

### Maximum yields

- Yield increase through integrated SMA ShadeFix
- I-V generator diagnostics<sup>1)</sup>
- Direct selling with SMA SPOT
- SMA Smart Connected

### More flexibility

- 3 MPP trackers
- High input current for high-performance PV modules
- Modular design allowing expansion for future energy management functions

## SUNNY TRIPOWER X 12 / 15 / 20 / 25

Integrated intelligence for future-proof system design

The new Sunny Tripower X is the innovative system solution for commercial and large home PV systems. The integrated System Manager function with direct access to Sunny Portal powered by ennexOS monitors up to five SMA inverters and one energy meter. This enables the dynamic closed-loop control of active and reactive power via SMA Dynamic Power Control. Thanks to the wide input voltage range and the high input current capability, it is compatible with the latest generation of high-performance PV modules. The innovative enclosure design ensures efficient cooling of the electronic components and thus guarantees maximum lifetime of the Sunny Tripower X.

Commissioning can be performed quickly and easily as well as centrally for all devices in the system. During operation, users benefit from integrated software solutions: SMA ShadeFix increases PV yields even in the event of partial shading, while SMA ArcFix detects electric arcs effectively and can reliably reduce the risk of fire.

<sup>1)</sup> planned for Q4/2022

Technical Data	Sunny Tripower X 12	Sunny Tripower X 15	Sunny Tripower X 20	Sunny Tripower X 25
Input (DC)				
Max. PV array power	18000 Wp, STC	22500 Wp, STC	30000 Wp, STC	37500 Wp, STC
Max. input voltage	1000 V			
MPP voltage range	210 V to 800 V	260 V to 800 V	345 V to 800 V	430 V to 800 V
Rated input voltage	580 V			
Min. input voltage / initial input voltage	150 V / 188 V			
Max. usable input current per MPP tracker	24 A			
Max. short-circuit current per MPP tracker	37.5 A			
Number of independent MPP trackers / strings per MPP tracker	3 / 2			
Output (AC)				
Rated power (at 230 V, 50 Hz)	12000 W	15000 W	20000 W	25000 W
Rated apparent power / max. apparent power	12000 VA / 12000 VA	15000 VA / 15000 VA	20000 VA / 20000 VA	25000 VA / 25000 VA
Nominal AC voltage	220 V / 380 V; <b>230 V / 400 V</b> ; 240 V / 415 V			
Voltage range	176 V to 275 V / 304 V to 477 V			
Grid frequency / range	50 Hz / 44 Hz to 56 Hz 60 Hz / 54 Hz to 66 Hz			
Rated grid frequency / rated grid voltage	50 Hz / 230 V			
Rated output current / max. output current	17.4 A / 36.6 A	21.7 A / 36.6 A	29 A / 36.6 A	36.2 A / 36.6 A
Feed-in phases / AC connection	3 / 3-(N)-PE			
Power factor at rated power / adjustable displacement power factor	1 / 0 overexcited to 0 underexcited			
Harmonic (THD)	< 3 %			
Efficiency				
Max. efficiency / European efficiency	98.2 % / 97.6 %	98.2 % / 97.8 %	98.2 % / 97.9 %	98.2 % / 98.0 %
Protective devices				
Input-side disconnection point	●			
Ground fault monitoring / grid monitoring	● / ●			
DC reverse polarity protection / AC short-circuit current capability	● / ●			
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 diagnostics	● / ● <sup>1)</sup>			
DC surge arrester (type 2, type 1/2)	○			
General data				
Dimensions (W/H/D)	728 mm / 762 mm / 266 mm (28.7 in / 30.0 in / 10.5 in)			
Weight	35 kg (77 lbs)			
Operating temperature range	-25°C to +60°C (-13°F to +140°F)			
Noise emission, maximum (1 m)	59 dB(A)			
Self-consumption (night)	< 5 W			
Topology / cooling concept	No galvanic isolation / OptiCool			
Degree of protection (according to IEC 60529)	IP65			
Climatic category (according to IEC 60721-3-4)	4K26			
Max. permissible value for relative humidity (non-condensing)	100 %			
Features / functions / accessories				
DC connection / AC connection	SUNCLIX / spring-cage terminal			
LED display (Status / Fault / Communication)	●			
Interface: Ethernet / local WLAN / RS485	● (2 ports) / ● / ○ <sup>2)</sup>			
Data protocols: SMA Modbus / SunSpec Modbus / Speedwire	● / ● <sup>1)</sup> / ●			
Multi-function relay / slot for expansion module	● / ● (1 port)			
Number of digital inputs	6			
Mounting type	Wall mounting			
SMA ShadeFix / Integrated Plant Control / Q on Demand 24/7	● / ● / ●			
Off-grid capable / SMA Hybrid Controller compatible	● / ●			
Warranty: 5 / 10 / 15 / 20 years	● / ○ / ○ / ○			
Certificates and approvals (more available upon request)	VDE AR-N 4105/4110:2018, EN 50549-1/-2:2018, CE, UKCA			
System manager function				
Total number of supported devices – of which:	6			
Maximum number of supported SMA inverters	5			
Maximum number of supported energy meters	1			
Maximum nominal system power of PV inverters (nominal AC power)	135 kVA			
Centralized commissioning of all devices in the system	●			
Remote parameterization of SMA devices with Sunny Portal powered by ennexOS	●			
Direct selling via SMA SPOT (Germany)	●			
SMA Dynamic Power Control (e.g., zero export / Q(U))	○			
Type designation	STP 12-50	STP 15-50	STP 20-50	STP 25-50
● Standard features   ○ Optional   — Not available   “STC” Standard test conditions   Data in nominal conditions   Last revision: 08/2022   1) planned for Q4/2022   2) planned for 2023				

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## Accessories



SMA Sensor Module  
MD.SEN-40<sup>2)</sup>



SMA RS485 modules  
MD.485-40<sup>2)</sup>



DC surge arrester  
(Type I+II): DC\_SPD\_KIT7\_T1T2  
(Type II): DC\_SPD\_KIT6-10



DC terminal cover  
DC-TERM-COVER<sup>2)</sup>