/ STP 125-70

Sunny Tripower 125

More power and seamless integration into the SMA Commercial Energy Solution.

powered by ennexOS

SMA Smart Connected | SMA ArcFix | SMA ShadeFix STRING LEVEL OPTIMIZATION

Easy integration
- Latest SMA inverter communication system for commissioning and operation
- Easy integration into the SMA Commercial Energy Solution with e.g., commercial storage system or charging infrastructure
- Wi-Fi access for diagnostics and commissioning

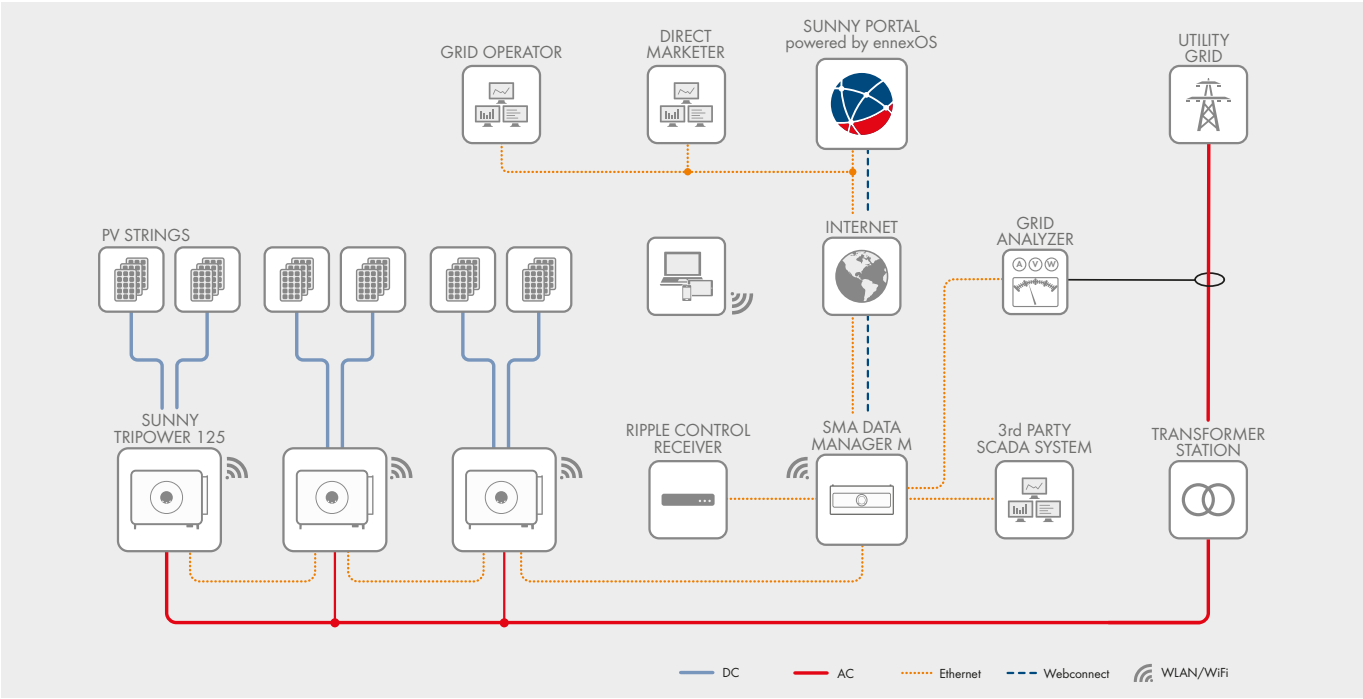
More power and higher yields
- High performance with 125 kW of power
- Optimized yields thanks to integrated software solution SMA ShadeFix
- SMA Smart Connected

High safety
- SMA ArcFix arc-fault circuit interrupter
- Maximum IT security thanks to cyber security protection measures
- I-V array diagnostics to ensure operational safety

Highest flexibility
- 12x MPP trackers with 24 string inputs
- High input current for high-performance PV modules

The Sunny Tripower 125 is the ideal inverter for decentralized system structures up to the megawatt range in commercial applications.

Delivering 125 kW of power and equipped with 12 MPP trackers, the Sunny Tripower 125 enables highly efficient and economical ground-based PV systems and complex rooftop systems. Installers and system operators benefit from easy integration thanks to SMA's tried-and-tested inverter communication system. Thanks to communication via SMA Speedwire and Modbus, the Sunny Tripower 125 – as a core element of the SMA Commercial Solar Solution – enables the quick and easy integration of the SMA commercial storage system or an SMA charging infrastructure. In addition, SMA ShadeFix optimizes system performance even when some modules are located in shaded areas. The automatic monitoring service SMA Smart Connected detects faults early on and thus helps to maximize yields. The integrated arc-fault circuit interrupter SMA ArcFix helps to make the PV system even safer.



Technical data	Sunny Tripower 125
Input (DC)	
Max. PV array power	187500 Wp STC
Max. input voltage	1100 V
MPP voltage range for rated power / rated input voltage / MPP voltage range	450 V to 800 V / 600 V / 180V to 800 V[1)]
Min. input voltage / initial input voltage	180 V / 200 V
Max. usable input current per MPP tracker / Max. short-circuit current per MPP tracker	30 A / 40 A
Number of independent MPP trackers / strings per MPP tracker	12 / 2
Output (AC)	
Rated power (at 230 V, 50 Hz)	125000 W
Rated apparent power / max. apparent power	125000 VA / 125000 VA
Nominal AC voltage	230 V / 400 V
AC voltage range	320 V to 480 V
AC grid frequency / range	50 Hz / 45 Hz to 65 Hz
Rated grid frequency / rated grid voltage	50 Hz / 400 V
Rated output current / max. output current	181.1 A / 181.1 A
Power factor at rated power / adjustable displacement power factor	1 / 0.8 overexcited to 0.8 underexcited
Harmonic (THD)	< 3% (at rated power)
Feed-in phases / AC connection	3 / 3-N-PE
Efficiency	
Max. efficiency / European efficiency	98.4% / 98.1%
Protective devices	
Input-side disconnection point / ground fault monitor / grid monitor	● / ● / ●
DC reverse polarity protection / AC short-circuit current capability	● / ●
All-pole sensitive residual-current monitoring unit	●
Protection class (as per IEC 62109-1) / overvoltage category (as per IEC 62109-1)	I / AC: III; DC: II
Arc-fault circuit interrupter (AFCI) / I-V array diagnostics	● (Compliant with IEC 63027) / ●
Surge arrester	DC type I + II / AC type II
General data	
Dimensions (W/H/D)	1020 mm / 795 mm / 360 mm (40.2 in / 31.3 in / 14.2 in)
Weight	Approx. 96 kg (211.6 lb)
Operating temperature range	-30°C to +60°C (-22°F to +140°F)
Noise emission, maximum (1 m)	< 71.1 db(A)
Topology / cooling concept	No galvanic isolation / OptiCool
Degree of protection (as per IEC 60529)	IP65
Features/functions/accessories	
DC connection / AC connection	Sunclix / terminal lug (up to 240 mm²)
LED display (Status/Fault/Communication)	●
Interface: Ethernet/Wi-Fi	● (2 ports) / ●
Data protocols: SMA Modbus / SunSpec Modbus / Speedwire	● / ● / ●
Multifunction relay	● Floating change-over contact
Number of digital inputs for power limitation / quick stop	4 / 2
Mounting type	Wall mounting / rack mounting
Warranty: 5/10/15/20 years	● / ○ / ○ / ○
Certificates and approvals (more available on request)	AS4777.2:2020, CEI 0-21/CEI 0-16, EN50549-1/-2:2018, EN50549-10:2022, G99, IEC 62109-1/-2, NA/EEA-NE7, VDE-AR-N 4105/4110/4120:2018
Model type number	STP 125-70

● Standard equipment ○ Optional – Not available Data at nominal conditions Last revised: 12/2025 SMA Material number 3-125-1100-1-70, Australia 3-125-1100-4-70

1) Input voltages of up to 1000 V are possible; however, this will result in reduced power output.