

# Hybrid Inverter

## SUN-TL-HP12K-A1



### Overview

SUN-TL-HP12K-A1 is a versatile hybrid inverter that integrates the functions of a bidirectional inverter, solar charger, and battery charger, offering portable uninterruptible power supply support. It supports smart system control, various working modes, and autonomous energy management.

### Features

- Supports low-voltage battery systems for enhanced safety.
- Supports 160% PV oversizing.
- Supports 110% AC overloading output.
- 100% unbalanced output, each phase.
- Supports 150% backup power output for 10 seconds.
- Supports 200% AC input.
- Battery charge/discharge current up to 240A.
- 10ms EPS switch time.
- Supports smart load management.
- Supports parallel operation with up to 5 inverters (to be launched in 2026) .
- Compatible with grid voltage or diesel generator power supply (to be launched in 2026) .
- Supports overload protection, overtemperature protection, and short-circuit protection.
- Allows to zero feed-in, meeting regulation requirements of different regions.
- Supports remote monitoring on an app via Wi-Fi connection.
- IP66 protection, allows for outdoor use.
- Supports three-phase unbalanced output current.

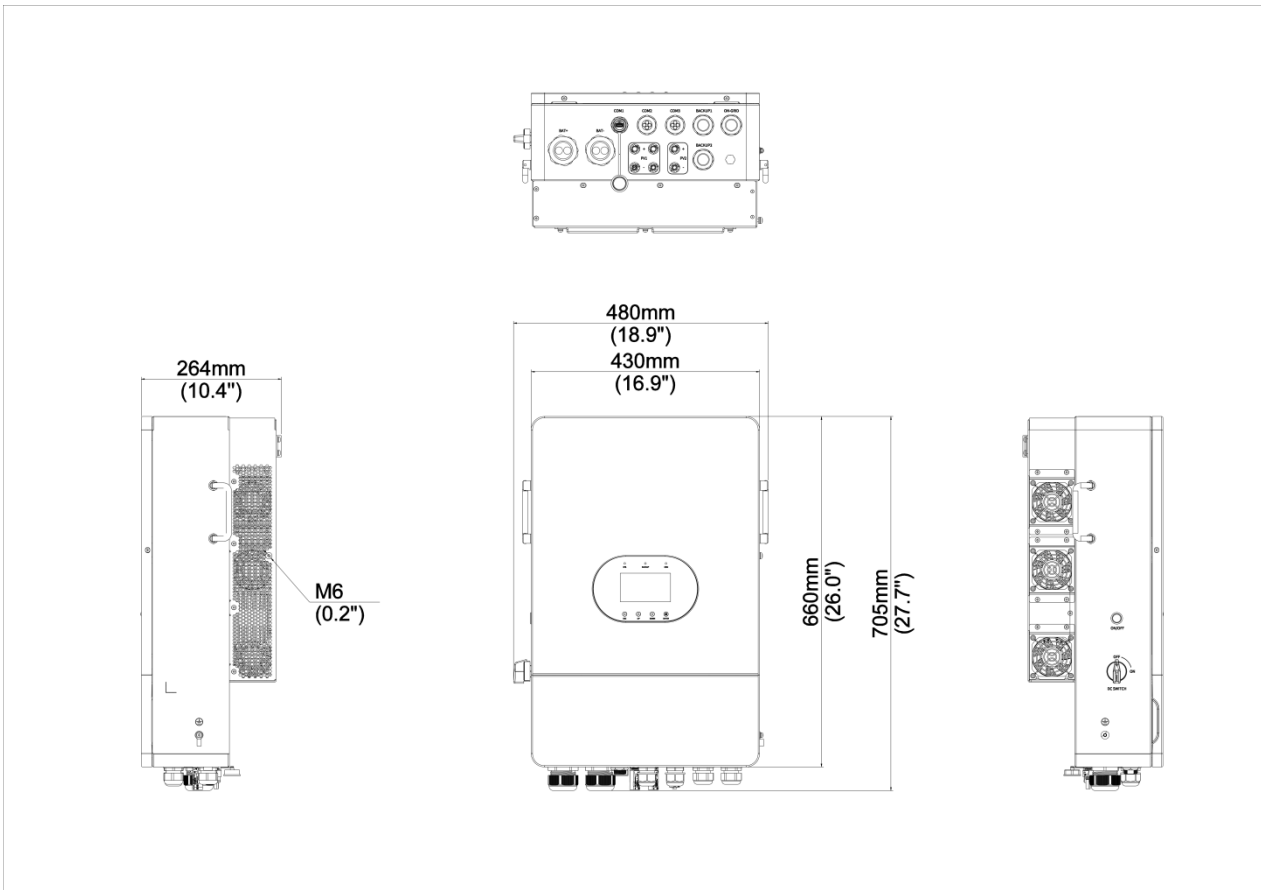
## Specifications

Model	SUN-TL-HP12K-A1
BOM	
BOM	0235CBED
PV String Input Data	
Max. PV Input Power	19200W
Max. PV Input Voltage	1000V
Rated PV Input Voltage	600V
Start-up Voltage	150V
MPPT Voltage Range	130~950V
Full Load MPPT Voltage Range	320~850V
Max. PV Input Current	40/20A
Max. DC Short Circuit Current	50/30A
No.of MPPT Trackers	2
No.of Strings Per MPPT	1/1
Battery Input Data	
Battery Type	Li-ion/Lead-acid
Battery Voltage Range	40-60V
Max. Charging Current	240A
Max. Discharging Current	240A
No.of Battery Input	1
AC Input/Output Data(On-grid)	
Rated AC Output Power	12000W
Max. AC Output Apparent Power	13200VA
Grid Type	Three Phase
Rated AC Voltage	220 V / 380 V; 230 V / 400 V, 3 / N / PE,
Rated AC Output Current	18.2A
Max. AC Output Current	20A
Max. Three-phase Unbalanced Output Current	25A
Power Factor	0.8 leading to 0.8 lagging
THDi (@Rated Power)	<3%
Max. AC Power From Grid	24000VA
Max. Current From Grid	36.4A
AC Input/Output Data (On-grid)	
Rated AC Frequency	50/60Hz
AC Output Data (Back-up)	
Rated Output Power	12000W
Max. Output Apparent Power	13200VA
Peak Output Apparent Power	1.2X@60s 1.5X@10s
Rated Output Voltage	220 V / 380 V; 230 V / 400 V, 3 / N / PE,

Rated Output Frequency	50/60Hz
Rated Output Current	18.2A
Switch Time	<10ms
THDv (@Linear Load)	<3%
<b>AC Output Data (Back-up)</b>	
Max Output Current	20A
<b>Protection</b>	
Anti-islanding Protection	Integrated
PV Input Reverse Polarity Protection	Integrated
Insulation Resistor Detection	Integrated
Ground Fault Monitoring	Integrated
Residual Current Monitoring (GFCI)	Integrated
AC Overcurrent Protection	Integrated
AC Short Circuit Protection	Integrated
AC Overvoltage Protection	Integrated
DC Switch (Solar)	Integrated
AFCI	Optional
Remote Shutdown	Integrated
Thermal Protection	Integrated
DC Surge Protection	II
AC Surge Protection	II
<b>Working efficiency</b>	
Max. Efficiency	0.97
Euro Efficiency	0.976
MPPT Efficiency	0.99
<b>General Data</b>	
User Interface	APP & LCD & LED
Communication With BMS	CAN/RS485
Communication With Portal	BT+WIFI+LAN/4G (optional)
Dimension (W x D x H mm)	480*300*660 mm
Weight	42kg
Self-consumption At Night	<10W
<b>Certifications and Standards</b>	
Grid Connection Standard	IEC61727,IEC62116,EN50549-1/-10,NC RfG
Safety Standard	IEC / EN 62109-1/-2
EMC Standard	IEC / EN 61000-6-1/2/3/4,IEC / EN 61000-3-2/12,IEC / EN 61000-3-3/11
<b>Operating Conditions</b>	
Operating Temperature Range	-30 to +60°C
Storage Temperature Range	-30~85°C
Operation Relative Humidity	0 - 95%
Max. Operation Altitude	4000m (>2000m Derating)

Ingress Protection	IP66
Cooling Concept	Intelligent fan-cooling
Installation Style	Wall-mounted
Noise Emission	<65dB
Warranty	10 Years

## Dimensions



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Product specifications and availability are subject to change without notice.