



Solis Three Phase High Voltage Energy Storage Inverters

High Voltage, Reliable Power.

NEW

S6-EH3P(12-20)K-H



101 Product Overview

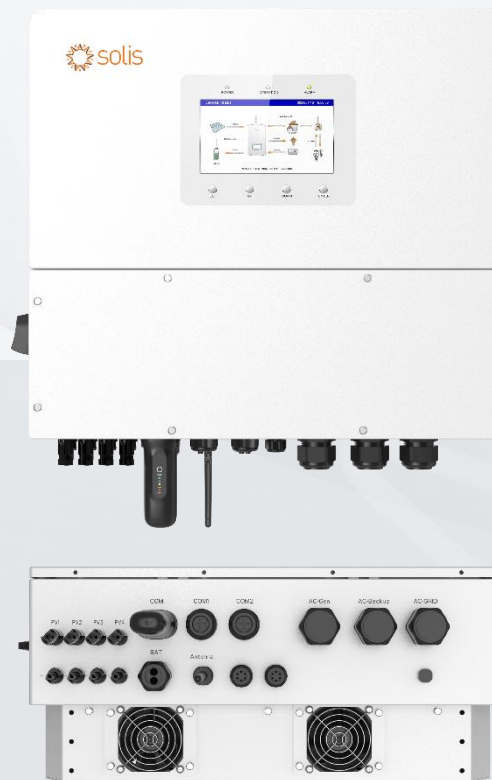
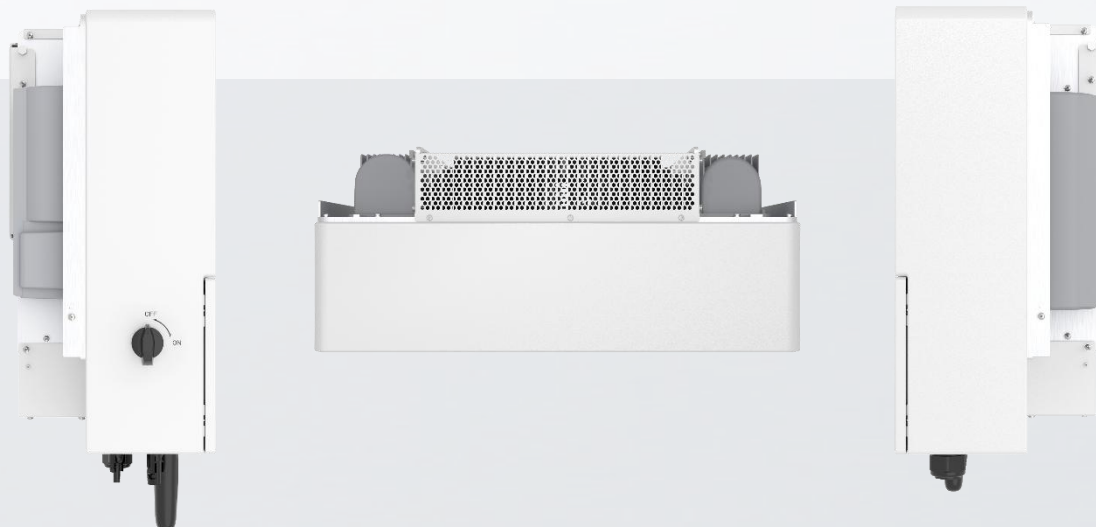


General Introduction



S6-EH3P(12-20)K-H

12K / 15K / 20K



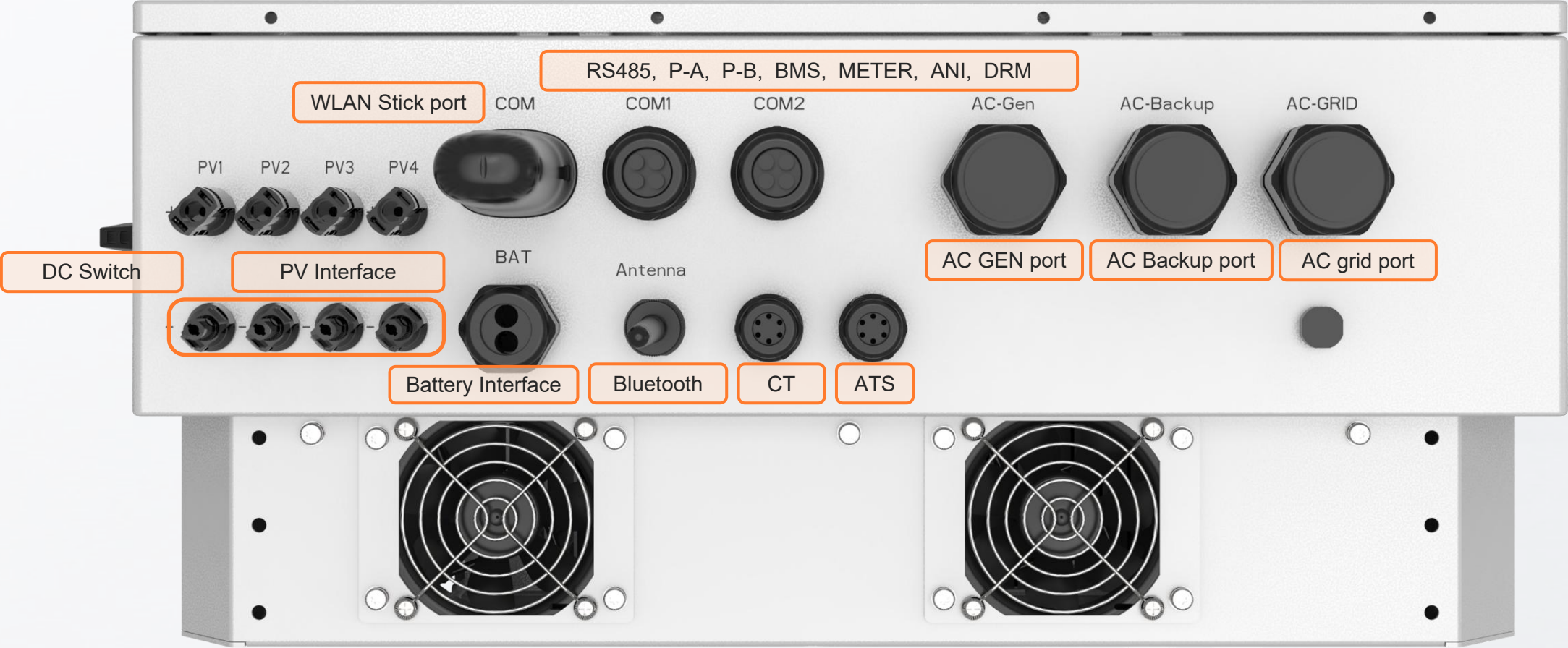
S6-EH3P(12-20)K-H



S6-EH3P(12-20)K-ND-H



Bottom & Communication Interface





Technical Data



Models	12K	15K	20K
Input DC (PV side)			
Recommended max. PV array size	24 kW	30 kW	40 kW
Max. usable PV input power	19.2 kW	24 kW	32 kW
Max. input voltage		1000 V	
Rated voltage		600 V	
Start-up voltage		160 V	
MPPT voltage range		200-850 V	
Full load MPPT voltage range		300-850 V	
Max. input current		20 A / 20 A / 20 A / 20 A	
Max. short circuit current		30 A / 30 A / 30 A / 30 A	
Max. input power per MPPT		9 kW	
MPPT number/Max. input strings number		4/4	
Battery			
Battery type		Li-ion	
Battery voltage range		120-800 V	
Max. charge / discharge power	12 kW	15 kW	20 kW
Max. charge / discharge current		50 A	
Communication		CAN/RS485	
Output AC (Grid side)			
Rated output power	12 kW	15 kW	20 kW
Max. apparent output power	12 kVA	15 kVA	20 kVA
Rated grid voltage		3/N/PE, 380 V / 400 V	
The grid voltage range		320-460 V	
Rated grid frequency		50 Hz / 60 Hz	
AC grid frequency range		45-55 Hz / 55-65 Hz	
Rated grid output current	18.2 A / 17.3 A	22.8 A / 21.7 A	30.4 A / 28.9 A
Max. output current	18.2 A / 17.3 A	22.8 A / 21.7 A	30.4 A / 28.9 A
Power factor		>0.99 (0.8 leading - 0.8 lagging)	
THDi		<3%	
Input AC (Grid side)			
Max. input power	18 kW	22.5 kW	30 kW
Rated input current	27.3 A / 26 A	34.2 A / 32.5 A	45.6 A / 43.3 A
Rated input voltage		3/N/PE, 380 V / 400 V	
Rated input frequency		50 Hz / 60 Hz	
Output AC (Back-up)			
Rated output power	12 kW	15 kW	20 kW
Max. apparent output power	2 times of rated power, 10 s		1.6 time of rated power, 10 s
Back-up switch time		<10 ms	
Rated output voltage		3/N/PE, 380 V / 400 V	
Rated frequency		50 Hz / 60 Hz	
Rated output current	18.2 A / 17.3 A	22.8 A / 21.7 A	30.4 A / 28.9 A
THDv (@linear load)		<3%	



Technical Data



Models	12K	15K	20K
Input Generator			
Max. input power	12 kW	15 kW	20 kW
Max. input current	18.2 A / 17.3 A	22.8 A / 21.7 A	30.4 A / 28.9 A
Rated input frequency		50 Hz / 60 Hz	
Efficiency			
Max. efficiency		97.7%	
EU efficiency		97.5%	
BAT charged by PV Max. efficiency		98.5%	
BAT charged/discharged to AC Max. efficiency		97.2%	
MPPT efficiency		99.90%	
Protection			
Anti-islanding protection		Yes	
Output over voltage protection		Yes	
Insulation resistance monitoring		Yes	
Residual current detection		Yes	
Output over current protection		Yes	
Short circuit protection		Yes	
Integrated AFCI (DC arc-fault circuit protection)		Yes ⁽¹⁾	
Integrated DC switch		Yes	
DC reverse-polarity protection		Yes	
PV over voltage protection		Yes	
Battery reverse protection		Yes	
General Data			
Max. allowable phase imbalance (grid & back up)		100%	
Max. power per phase (grid & back up)		50% rated power	40% rated power
Dimensions (W*H*D)		599*546*243 mm	
Weight	31 kg		31.7 kg
Topology		Transformerless	
Self-consumption (night)		<25 W	
Operating ambient temperature range		-25 ~ +60°C	
Relative humidity		0-95%	
Ingress protection		IP66	
Cooling concept		Smart cooling	
Max. operation altitude		2000 m	
Grid connection standard		EN 50549-1, VDE4105 CEI 0-21, CEI 0-16, NC-RFG TypeB, NRS 097-2-1 ED 2.1	
Safety/EMC standard		IEC/EN 62109-1/-2, IEC/EN 61000-6-1/-3, IEC 61000-2	
Features			
PV connection		MC4 connector	
Battery connection		OT terminal	
AC connection		OT terminal	
Display		LCD (ND type is LED) + Bluetooth + APP	
Communication		CAN, RS485, Ethernet, Optional: Wi-Fi, Cellular, LAN	



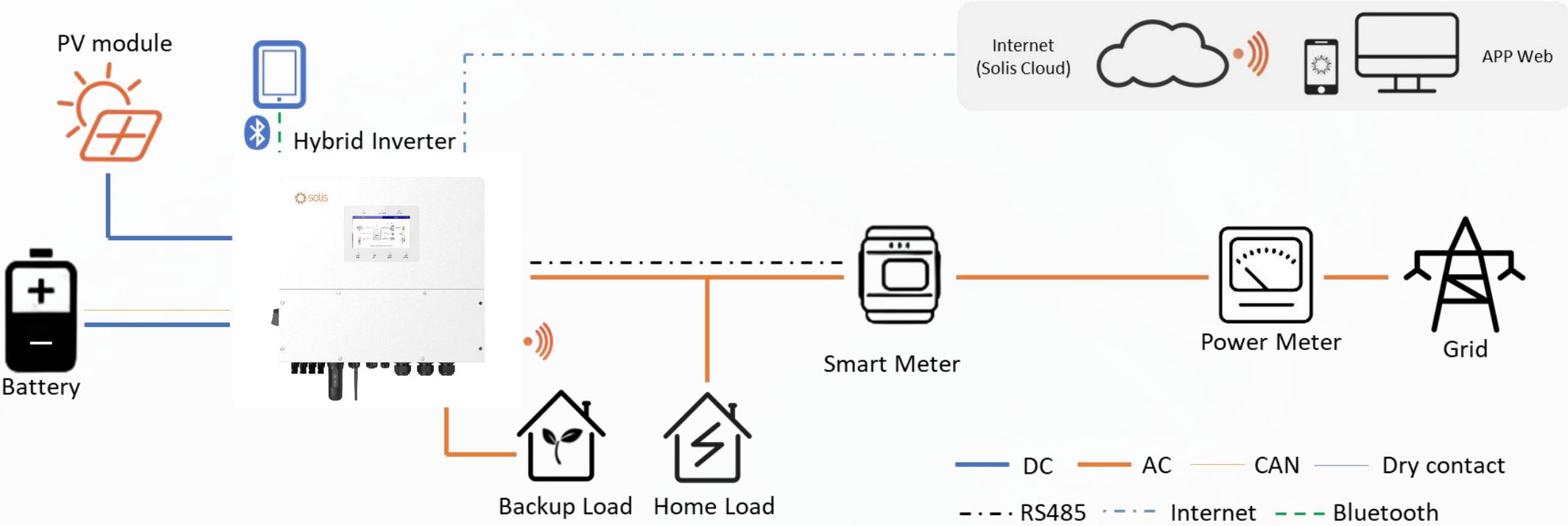
Work Modes



	Working mode	Working logic	Usage
	Self of use	Load priority: load>battery>grid Power supply priority: PV>battery>grid>DG Support TOU setting in this mode.	This mode applies the area that has low feed-in tariff and high energy price.
	Feed in priority	Load priority : load>grid>battery Power supply priority: PV>battery>grid>DG Support TOU setting in this mode.	This mode applies the area that has high feed-in tariff.
	Off-grid	Load priority : load>battery Power supply priority: PV>battery>DG When a power outage is detected, the system will automatically enter the off-grid mode, supplying only the backup load.	This mode applies the area not covered by the grid or the system is not connected to the grid.
	Peak-shaving	Load priority: load>battery>grid Power supply priority: PV>grid>battery>DG Support TOU setting in this mode. In this mode , on the premise that the power supplied by the grid does not exceed the set value(P_max), the system will be trying to charge the battery to Peak SOC. If $(P_{\text{discharge}}+P_{\text{max}}+PV < P_{\text{load}})$, it will exceed the set value(P_max) to support the load.	This mode applies the area where the electricity tariff is calculated according to the maximum power per unit time.



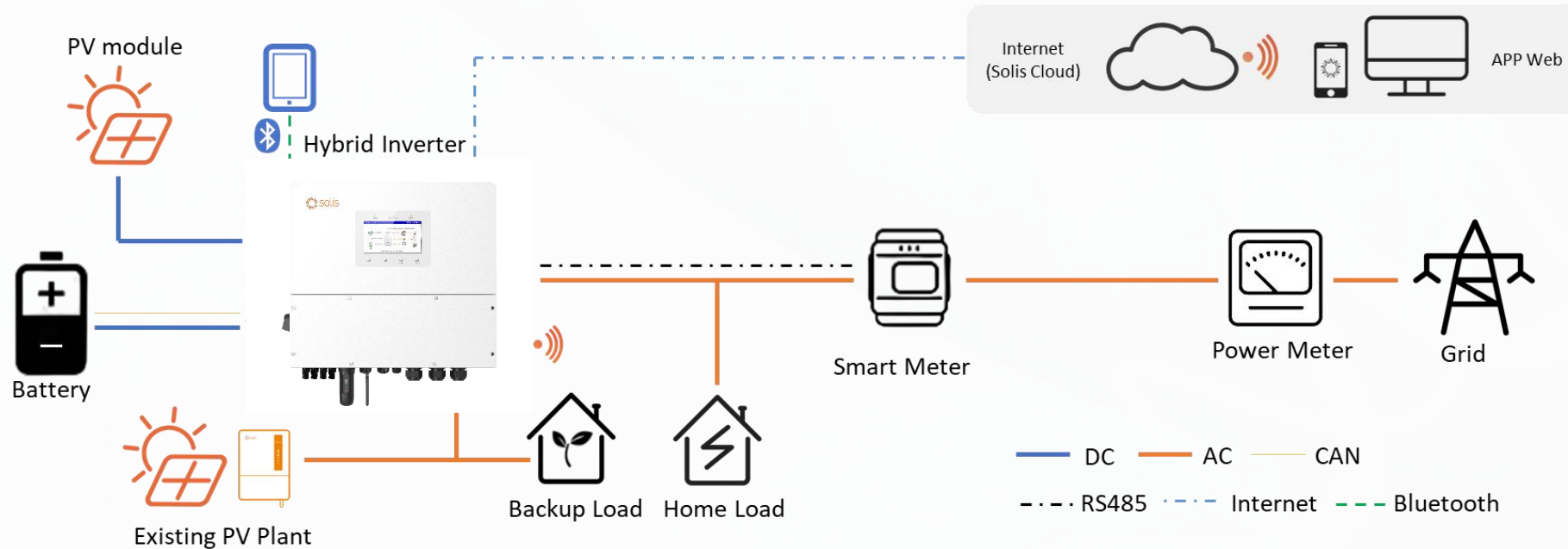
Europe Scenario: PV+ESS (on-grid)





Europe Scenario: PV+Existing PV Plant+ESS (on-grid)

Intelligent AC coupling Function, easily upgrade existing PV plant.



- With existing PV Plant connected to the system, it is recommended that: Grid-tied inverter power < rated AC power of S6 inverter;
- In the grid-connected scenario, the third-party grid-connected inverter is connected, and the system cannot control the output power of the third-party grid-connected inverter, so Feed-in limitation cannot be realized;
- The third-party grid-connected inverter in the off-grid scenario, the third-party grid-connected inverter needs to set the correct grid code, and has the function of over-frequency load shedding & under-frequency load rising, so that the system can adjust the frequency to control the output power of the grid-connected inverter.

System Adaptation



- The S6 three-phase high-voltage inverter is not applicable to lead-acid batteries, only to lithium batteries, and is compatible with S6-EH3P (5-10)K-H matched battery models (see the compatible list for specific models).

Adaptation Object	S6-EH3P12K-H	S6-EH3P16K-H	S6-EH3P20K-H
RSD	x	x	x
AFCI	√	√	√
PLC	x	x	x
PID recovery	x	x	x
IV curve scan	√	√	√
DRM	√	√	√
W4G dongle	√	√	√
GPRS/WIFI dongle	√	√	√
WIFI dongle	√	√	√
WL dongle	√	√	√
Data-logger	x	x	x
Lithium Battery	√	√	√
Lead-acid Battery	x	x	x
CT	√	√	√
Smart Sensor	√	√	√

102 Product Features



Solis Three Phase High Voltage Energy Storage Inverters

- ✓ Suitable for a wide range of energy storage scenarios
- ✓ Efficient and reliable, ensures consistent energy supply
- ✓ Comprehensive Protection: Multiple safety measures
- ✓ Flexible and economical battery selection
- ✓ Smart functionality: Intelligent, convenient & efficient operation



S6-EH3P(12-20)K-ND-H

S6-EH3P(12-20)K-H

12K / 15K / 20K

Applicable for full energy storage scenarios



Energy Independence

PV+ESS, Realize energy self-sufficiency



Emergency power supply

Multiple natural disasters, require independent energy supply



Peak load shifting

Using energy storage to reduce electricity bills



Large residence

Greater electricity demand



Small C&I

Provide energy security for industry and commerce



Charging station

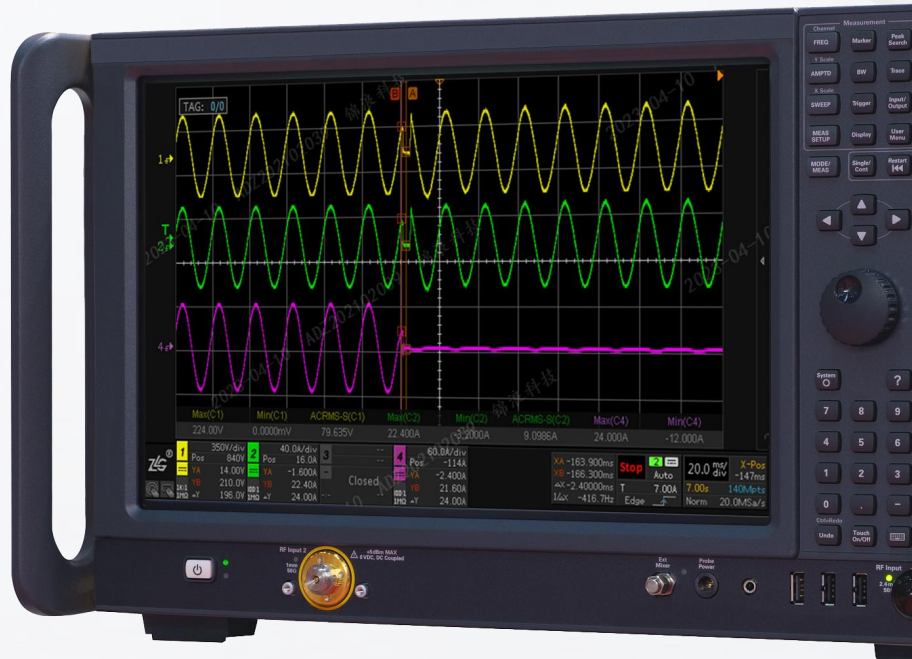
PV carport, build up a integrated system of PV+ESS & charging

Efficient and Reliable

Reliable energy supply - suitable with high loads

UPS level switching, switch time **<10ms**

10s 200% overload capacity (12K & 15K),
support various household loads



CH1: Back up voltage waveform

CH2: Back up current waveform

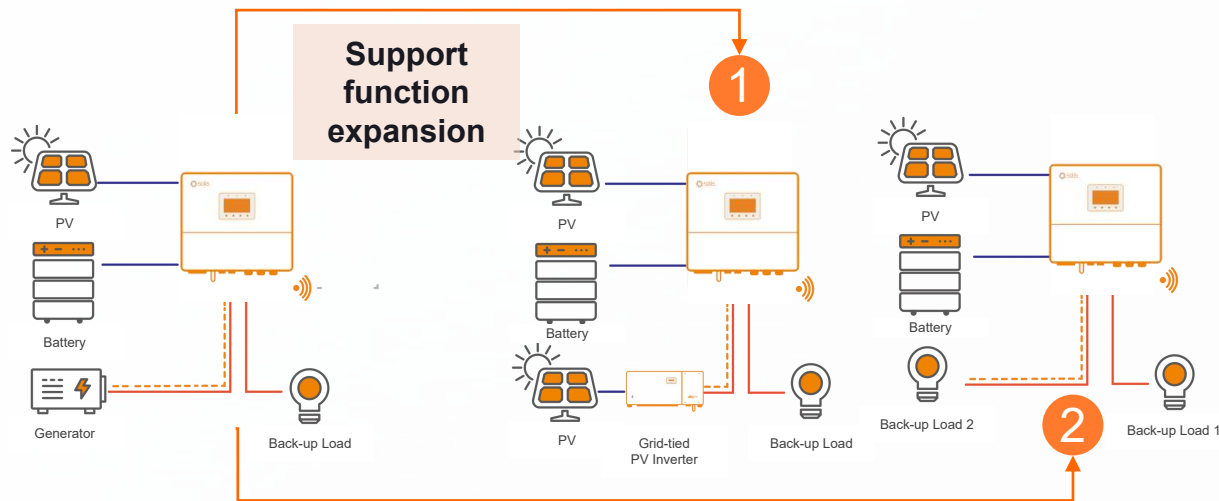
CH4: Grid current waveform



Efficient and Reliable

Compatible with generators - supports multi-source networking

- Provides independent generator interface
- The connection between the generator and inverter does not require changes to the original circuit
- Supports generator control for improved economic performance
- Compatible with mainstream generators worldwide, with strong applicability
- Supports peak-shaving in both “self-use” and “generator” mode



**independent
generator interface**

Efficient and Reliable

50A, High current charging and discharging



Three phase high-voltage hybrid inverter

S6-EH3P(12-20)K-H

Battery rated voltage	120~800V
Max. charge/discharge current	50A
Max. charge/discharge power	20kW

Fully charge
1 kwh in just
3 minutes

Quickly charge batteries during the high PV generation, in preparation for power outages

Efficient and Reliable

20A input current per MPPT,
perfectly adapted to the high current
PV modules

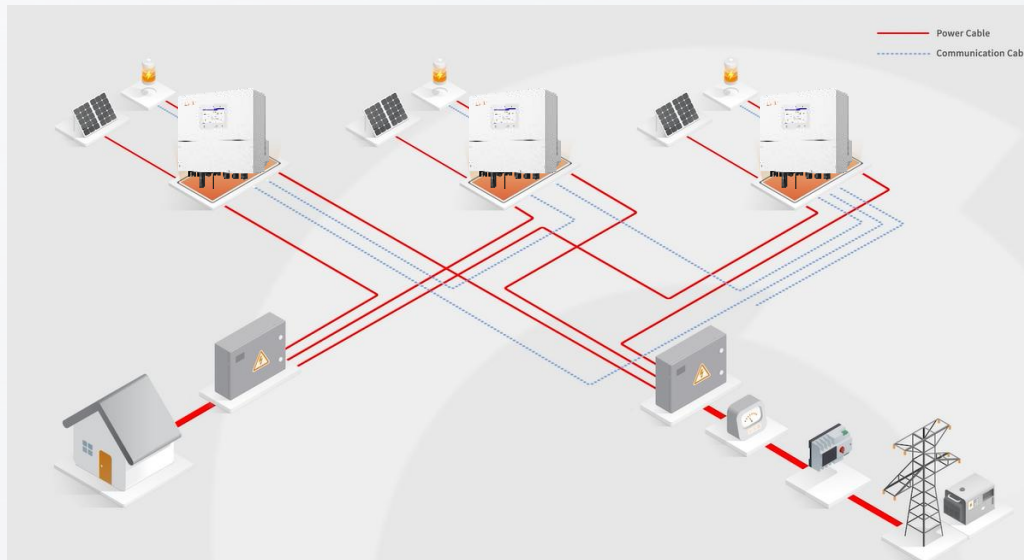
DC capacity increased
by **6~17%**



Efficient and Reliable

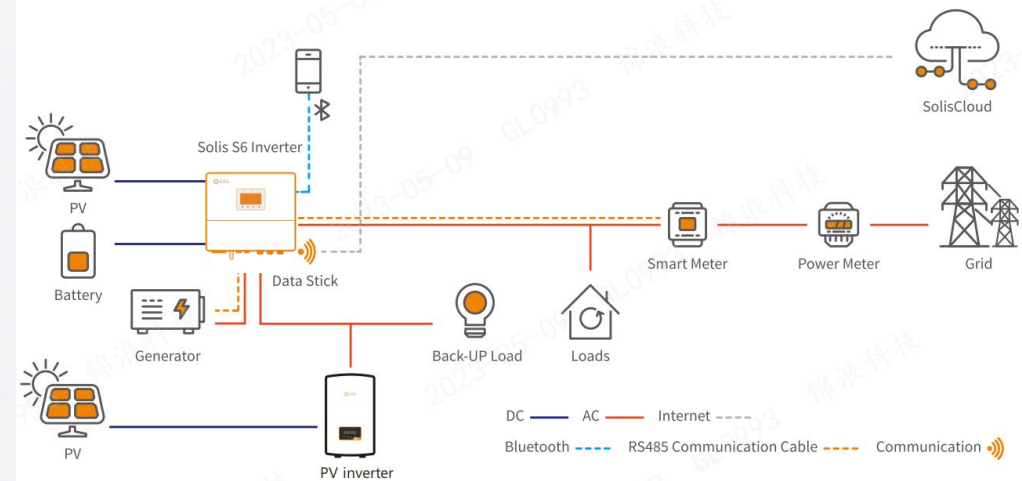
Flexible Expansion - Meet High Power Consumption Scenarios

Support parallel networking to achieve a maximum **120kW** PV&ESS system



Intelligent AC coupling, easily upgrade existing grid-tied system

AC coupling on Backup port



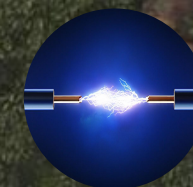


Multiple protection, extreme safety

Electricity safety is a crucial part of household energy storage system. Solis hybrid inverter integrates multiple advanced safety technologies, meeting the highest safety standards and ensuring personal and property safety.



roof safety



**DC reverse protection,
active warning of
hidden dangers**

Helping reduce roof installation hazards and ensuring property safety through anti-reverse function

**AFCI function,
prevent hidden
dangers**

Accurate monitoring of arcs, capable of quickly shutting off inverters within 0.5 seconds, ensuring system safety

System safety

Battery protection

Compatible with global mainstream battery protection protocols
Multiple battery monitoring functions for real-time protection

Electrical protection

Multiple protections for overvoltage, overcurrent, and overheating
Leakage current and insulation short circuit protection

Physical protection

Integrated high-strength metal shell
IP66 dustproof and waterproof

Emergency protection

Built in DC switch
Remote warning&control

Flexible and economical battery selection

01

Flexible customization and expansion of system capacity according to needs

02

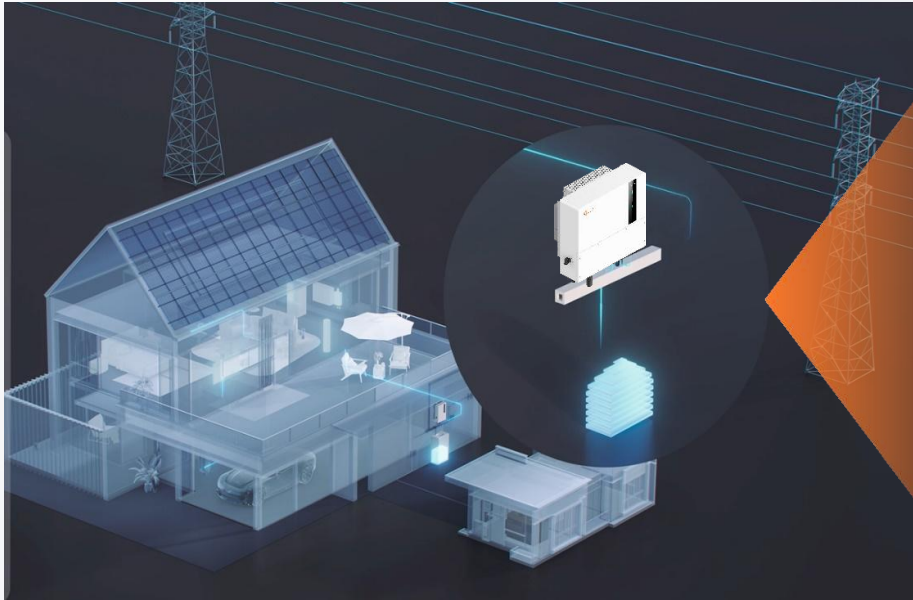
More selection among multiple brands and lower system costs

03

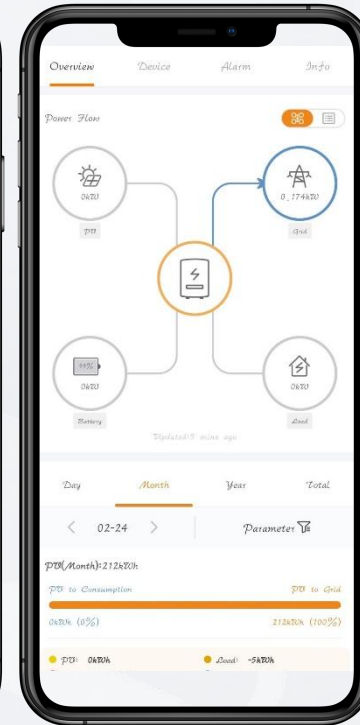
Adapt to local brand batteries, improve configuration efficiency



Flexible and economical battery selection



Real time
monitoring of
battery status



Real time
management of
power generation

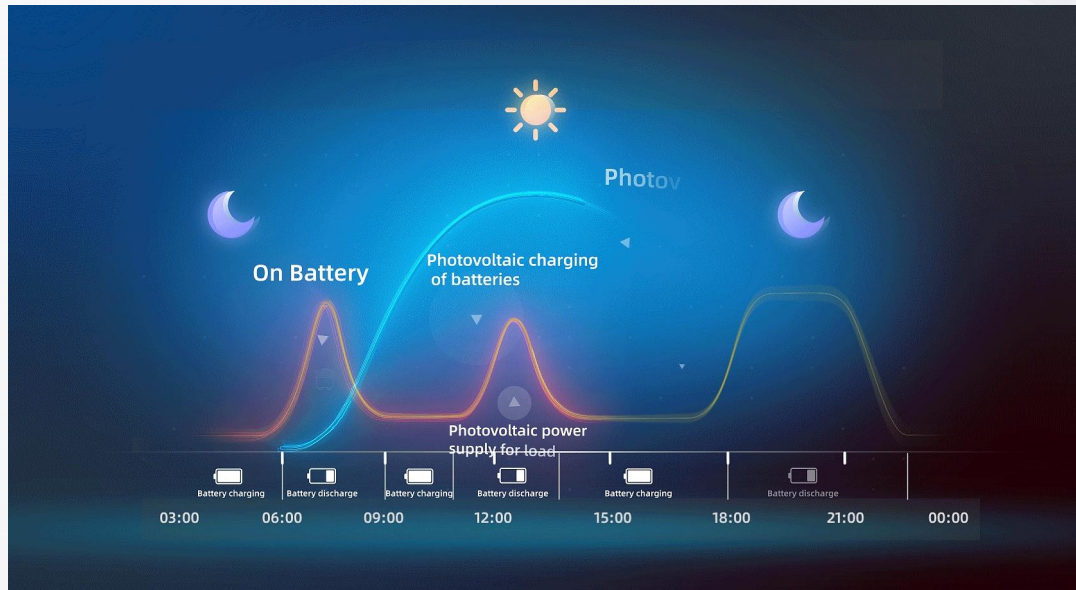


Real time recording
of power generation,
storage, and
consumption

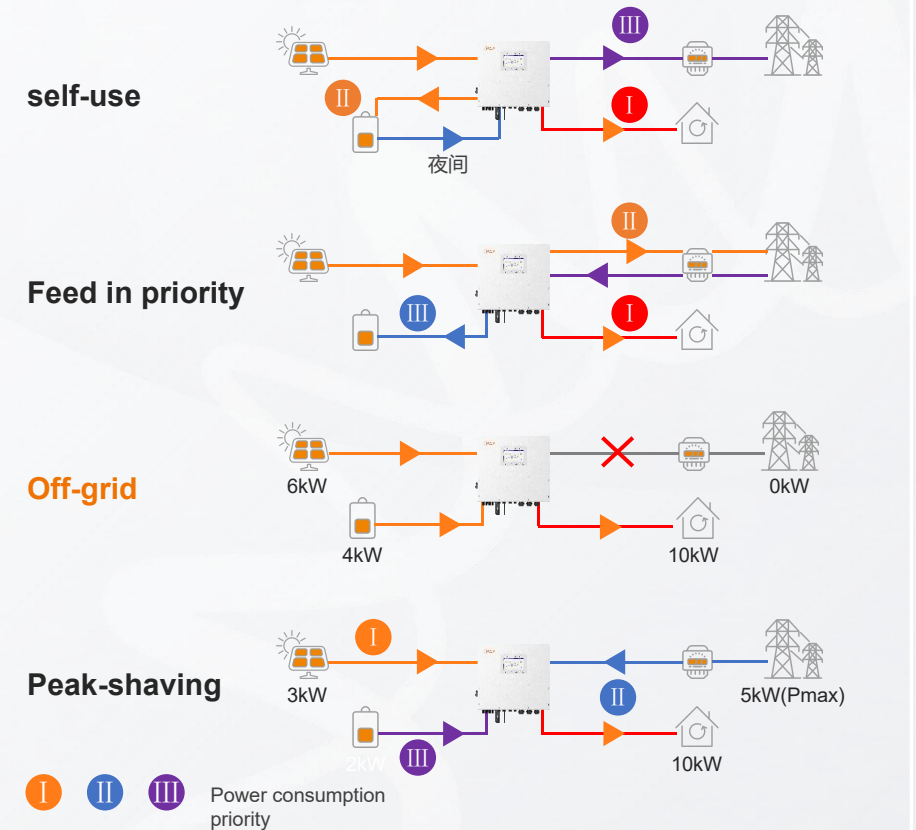
Intelligent & convenient & efficient operation

Intelligent Control - Economically Efficient Energy Use

6 intelligent charging and discharging settings to improve energy economy



Multiple work modes to improve energy efficiency in different scenarios



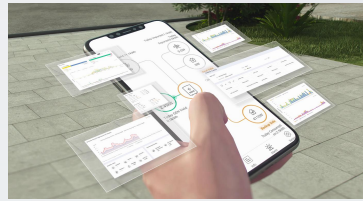
Support battery reserve function ,realize emergency backup power in emergency situations.

Smart functionality

Supports Bluetooth communication for increased convenience

01

Data visualization: information, presented in a user-friendly way



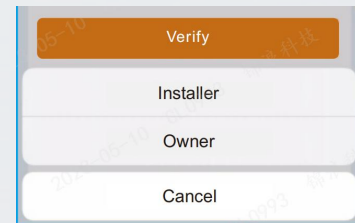
02

Efficient configuration for setting up parallel systems



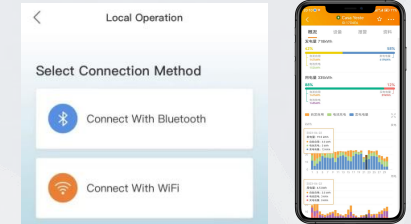
03

Secure login, distinguishing user identities to prevent inadvertent inverter operation and potential malfunctions.



04

Real-time monitoring of system operations via Bluetooth connection.



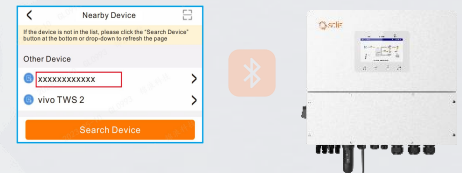
05

The app features setup storage for one-click configuration,



06

Nearby device updates allows for fast and stable upgrades.



Smart functionality

Soliscloud-Intelligent Digital O&M

Solisccloud is an intelligent online monitoring and maintenance system developed by Solis

Integrating real-time monitoring, accurate notifications, intelligent alarm, efficient O&M, remote upgrades control, large screen visualization and statistical analysis.

Real time monitoring and automatic calculation of energy consumption in various dimensions such as inverters, PV plants, and household

Quickly locate the fault point of a PV system and assist the operation and maintenance personnel to quickly complete the on-site repair work.



Leading cloud
computing
platform



Data security
and reliability



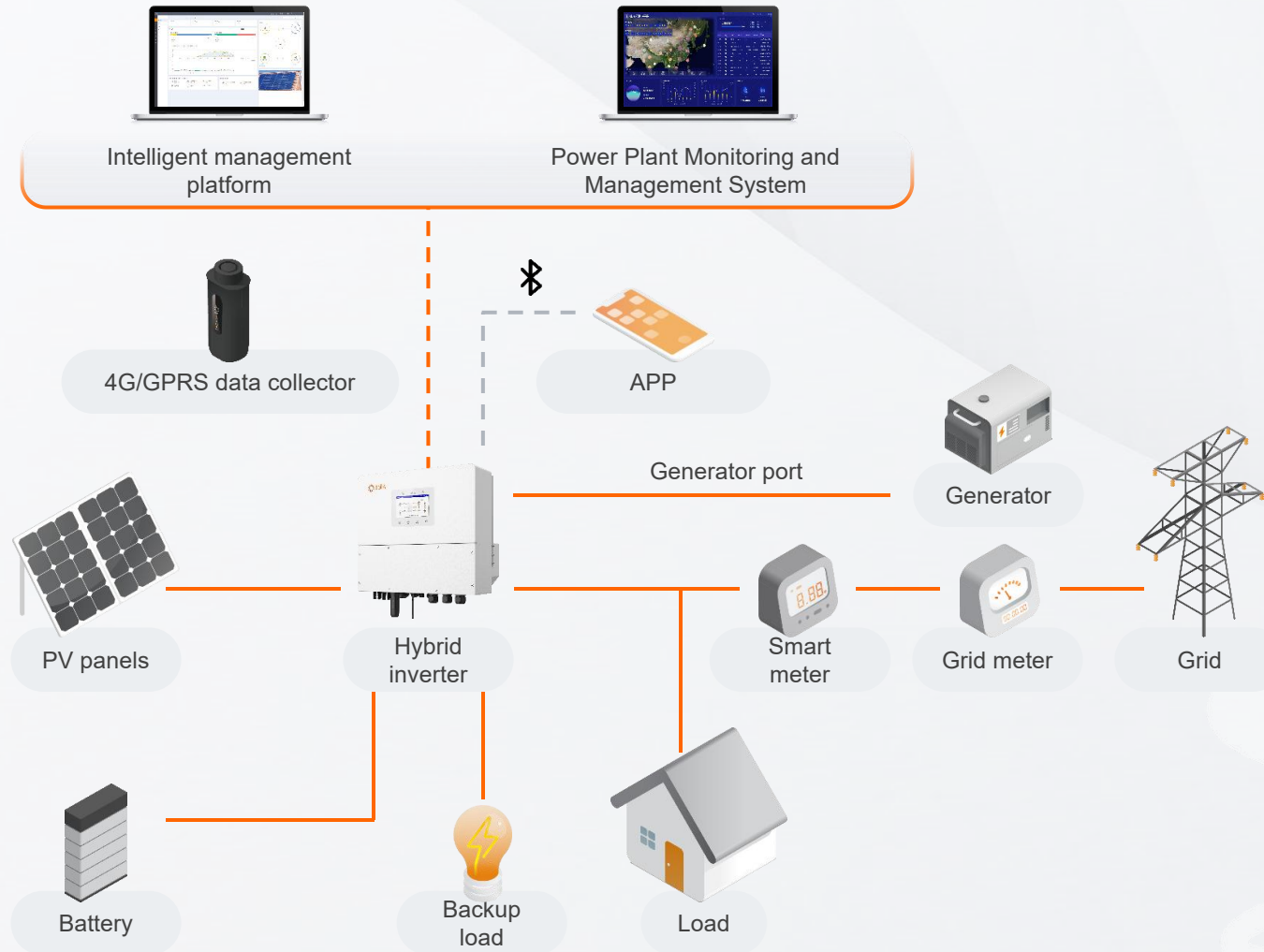
Convenient
operation



User friendly
interface



Smart functionality



20A input current per MPPT , support various high power PV panels, 6 customized charge/discharge settings maximize the economy of household energy. Support parallel connection system , up to 120KW.

24-hour power intelligent backup management and energy consumption monitoring provide more economical power,UPS level switching less than 10 ms, intelligent and reliable power supply.The preferred product for residential and small C&I.

103 About Solis





Solis History



Solis: The World's **3rd** Largest PV Inverter Manufacturer

2005

2005

Ginlong Technologies was founded by **Yiming Wang**

2006-2010

2006

First Asian inverter company obtained **G83** and entered the UK market

2009

First Asian inverter company obtained **UL1741** certification and entered the US market

2010

Obtained **AS4777 / AS3100** certification and entered the Australia market

2011-2016

2016

4th Generation inverters hit the market

First ranked among the **top PV brands** by EUPD research

2017-2021

2019

First ranked among the **Top 10** Inverter shipments globally

Ginlong (Solis) listed as a **public company** (Stock Code: 300763.SZ)

Ginlong (Solis)
Ranked 3rd among Asian Brands by BloombergNEF Bankability

2021

First became world **3rd largest** PV inverter manufacturer

Ranked among the **top 500** global new energy companies

2022-2023

2022

World **3rd largest** PV inverter manufacturer

National laboratory qualification CNAS Certification

6th Generation inverters hit the market

2023

Forbes China's **Top 50** Innovative Enterprises

2024

Ranks among the **top PV brands** by EUPD research for **9 consecutive years** (2016-2024)



锦浪科技股份有限公司
GINLONG TECHNOLOGIES CO., LTD.



Global Reach, Local Expertise



HQ

35

Service Centers

In-country inverter experts committed to your success:

Hassle-free service delivered by local technicians available by phone and on-line.

Solis after-sales support defines service excellence.

Spain, Portugal, UK, Ireland, France,
Switzerland, Austria, Netherlands,
Germany, Italy, Sweden, Poland,
Lithuania, Romania, Greece, Turkey

Canada, USA,
Mexico, Brazil, Chile

China, Korea, Pakistan, India,
Myanmar, Thailand, Vietnam,
Philippines, Malaysia, Singapore,
Indonesia, Sri Lanka

South Africa, Australia

Solis: The World's 3rd Largest PV Inverter Manufacturer



Solis After-sales Services





Mission

Developing Technology to Power the World with Clean Energy

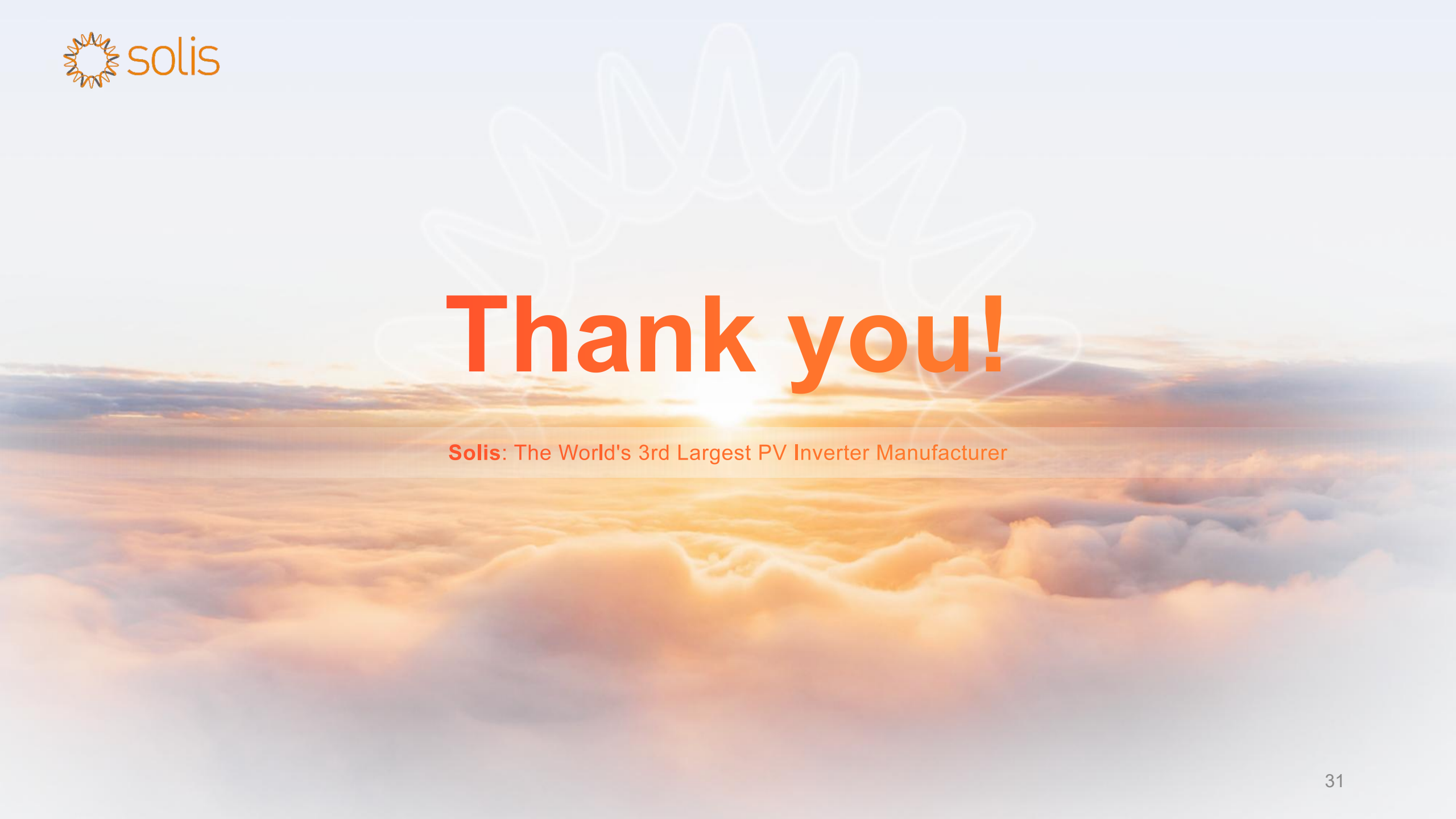
Vision

Product Centric
Customer Focused

Values

We will meet the needs of customers around the world with our innovative products and contribute to prosperous sustainable living.





Thank you!

Solis: The World's 3rd Largest PV Inverter Manufacturer