Solis S6 Advanced Power Hybrid Inverter

S6-EH3P(29.9-50)K-H

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Technical Support Engineer

6/14/2024

Ginlong Technologies Co., Ltd.

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01 Company profile

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 the world's **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)

Company Profile

4500+
Global Employees

800+
R&D Team

80+GW
Capacity

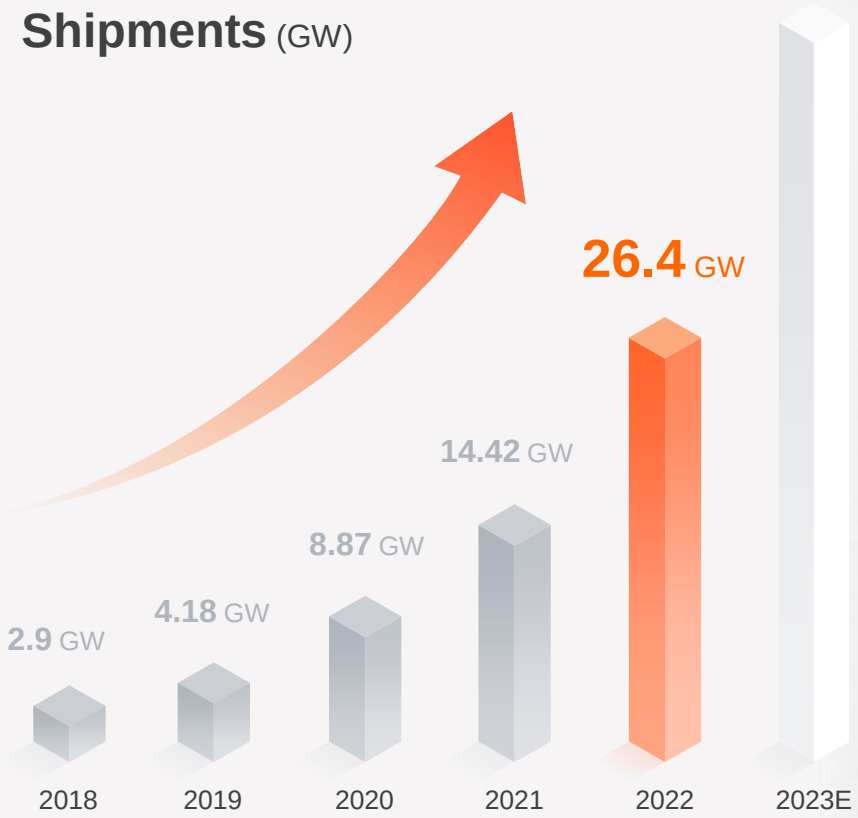
26+GW
2022 Shipment

USD2.8B
Total Assets

19Y
History

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

Rapid Growth in Shipments



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

Global Leading String Inverter Manufacture

80+GW

Capacity

02 Product Overview

General Introduction

Solis S6-EH3P(29.9-50)K-H

3 Models In Total

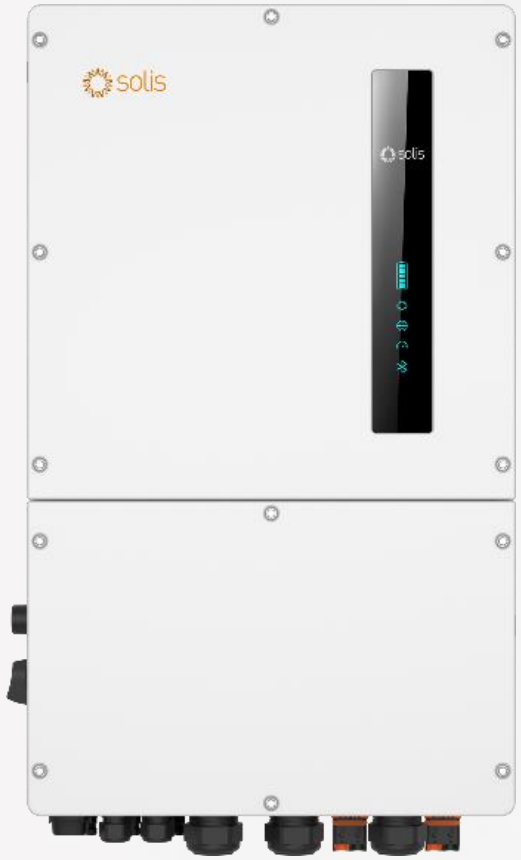
- S6-EH3P29.9K-H
- S6-EH3P40K-H
- S6-EH3P50K-H

Dimension: 530*880*290 mm
Weight: 73 kg
Ingress Protection: IP66
Anticorrosion Grade: C5

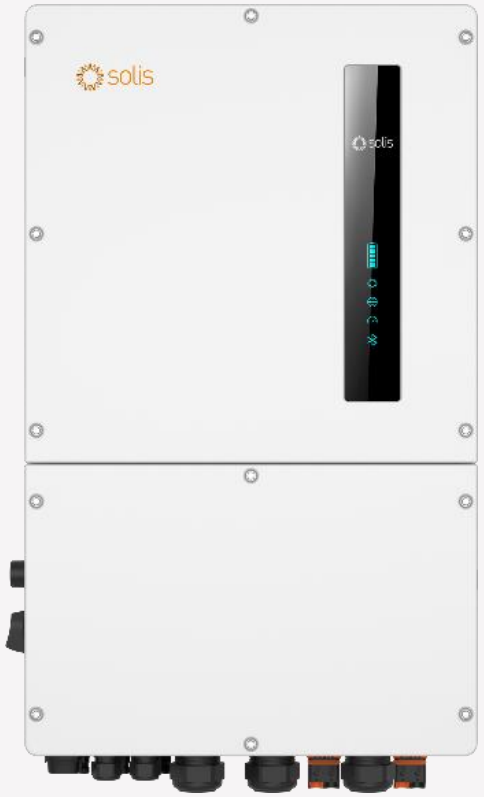
Bottom & Communication Interface

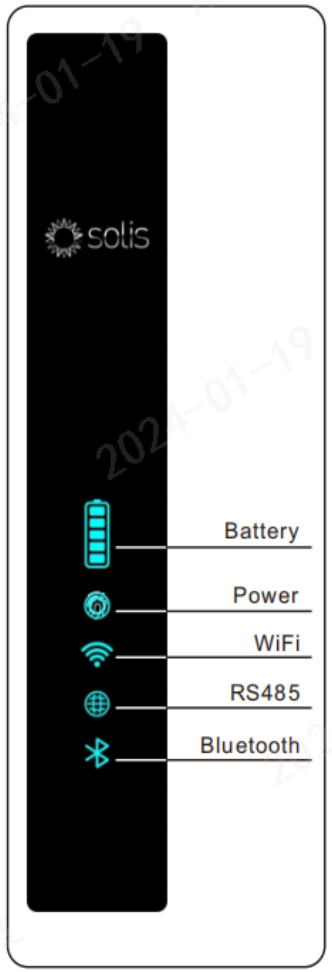
S6-EH3P(29.9-50)K-H

Product Physical Image

Bottom View	Front View	Back View
		

Inverter Indicator Diagram





Light	Status	Description
Battery	Blue Breathing light flashes	Battery 1 charging.
	Green Breathing light flashes	Battery 2 charging.
	Blue Breathing light flashes in reverse	Battery 1 discharging.
	Green Breathing light flashes in reverse	Battery 2 discharging.
	Blue light solid on	Battery 1 Idle.
	Green light solid on	Battery 1 Idle.
	Yellow light solid on	Battery 1 alarm.
	Yellow light flashes	Battery 2 alarm.
	OFF	No battery or not working.
Power	Blue Solid ON	Normally Operating.
	Yellow Solid ON	Warning.
	Red Solid ON or flashing every 3s	Alarm.
	OFF	No Battery or not working.
WiFi	Blue Solid ON	COM Port is using.
	OFF	COM Port is not used.
RS485	Blue Solid ON	RS485 Port is using.
	OFF	RS485 Port is not used.
Bluetooth	Blue Solid ON	Bluetooth Port is using.
	OFF	Bluetooth Port is not used.

Turning On the LED Indicator Lights After a few minutes, the LED indicator lights will turn off to save power. To turn the lights back on, short-press the inverter LED light.

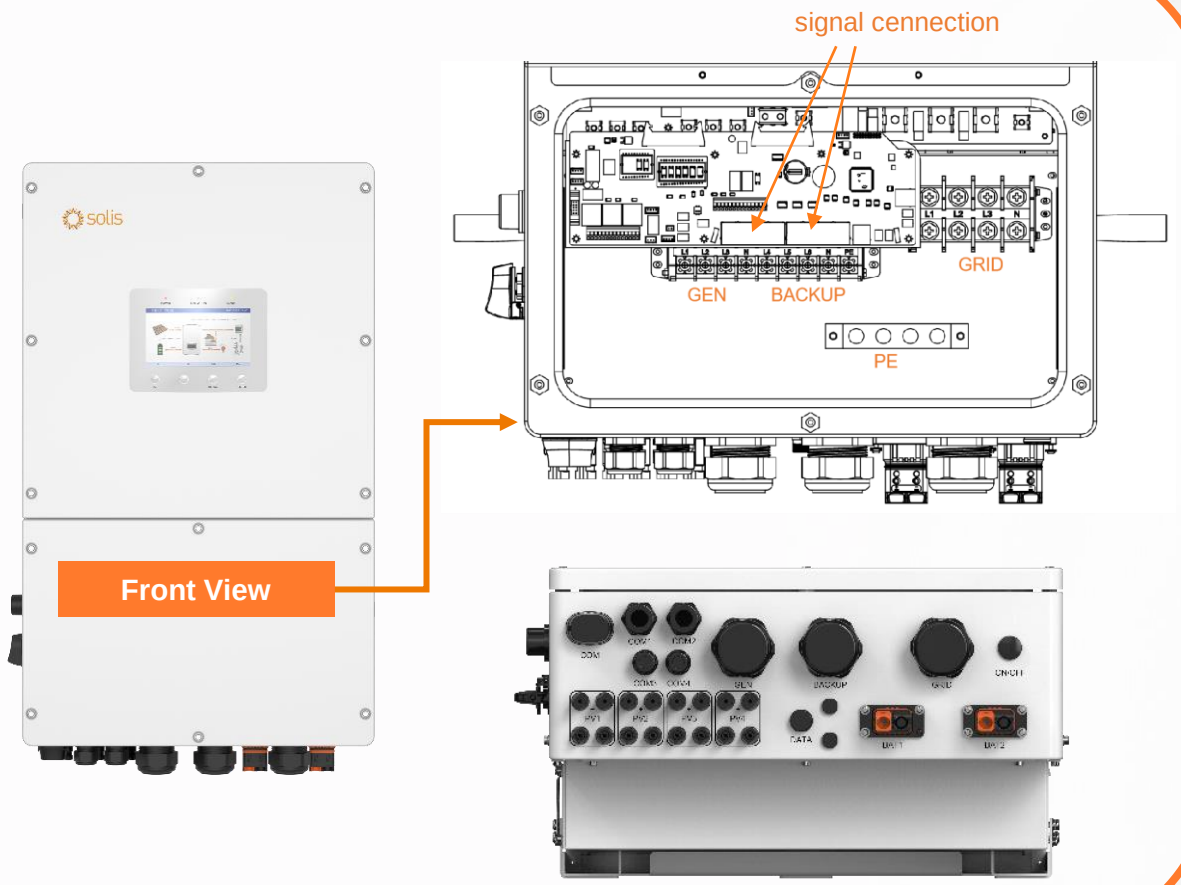
Alarm State

When the inverter has an alarm, the inverter LED light turns red and starts flashing. It is recommended to connect to the inverter with the Bluetooth tool. Then you can determine what the alarm code is.

NOTE:

Battery/WiFi/Ethernet/Bluetooth indicators will automatically turn off after 1 minute. The Power indicator will remain on with lower brightness. Short press the Power indicator will wake up all indicators.

Junction Box



◆ For details of the connections , see the product manual.

◆ Communication Specification

External communication Interface	Communication Object	communication protocol
Battery communication Interface（BMS）	BMS	CAN
Meter communication interface	Smart Meter	RS485
Monitor Interface（COM）	Solis Monitor Devices	RS485
Grid Dispatch Interface（DRM）	Grid Dispatch System	Modbus RTU
RS485 Interface（RS485）	Third-party external devices	RS485
Parallel Interface（Parallel A）	Other inverters	CAN
Parallel Interface（Parallel B）	Other inverters	CAN

- CAN communication is recommended for battery communication. If RS485 is needed, please contact the product manager ;

System Adaptation

- The S6 three-phase high-voltage inverter does not support lead-acid batteries, only approved lithium batteries (see the compatible list for specific models).

Adaptation Object	S6-EH3P30K-H	S6-EH3P40K-H	S6-EH3P50K-H
RSD	×	×	×
AFCI	√	√	√
PLC	×	×	×
PID recovery	×	×	×
IV curve scan	√	√	√
DRM	√	√	√
W4G dongle (Only available in Europe)	√	√	√
GPRS/WIFI dongle	√	√	√
WIFI dongle	√	√	√
WL dongle	√	√	√
S3-logger	√	√	√
Lithium Battery	√	√	√
Lead-acid Battery	×	×	×
CT	√	√	√
Smart Meter	√	√	√

Configurations

- Accessories delivered with the inverter;

	Model	S6-EH3P29.9K-H	S6-EH3P30K-H	S6-EH3P30K-H-LV	S6-EH3P37.5K-H	S6-EH3P40K-H	S6-EH3P50K-H
Standard parts	WL dongle S2-WL-ST	Standard Con.					
	CT	Standard Con. (3PCS)					
	PV terminal	standard (6pairs)	standard (6pairs)	standard (6pairs)	standard (8pairs)	standard (8pairs)	standard (8pairs)
	Battery terminal	standard (2pairs)	standard (2pairs)	standard (2pairs)	standard (2pairs)	standard (2pairs)	standard (2pairs)
	Bluetooth Antenna	Standard Con.					
	DC Switch	Standard Con.					
	Parallel wire	Standard Con. (2meter)					
	RJ45 interface connectors	Standard Con. (*10)					

- Accessories optional;

1	3101010019	LS-single-phase、three-phase rail-type MID meter(split type)	SDM630MCT V2

03 Product Features

1 **4 MPPTs**
8 strings at 20A per string, and up to 96kW usable PV input

2 **140A / 70+70A**
Maximum charge and discharge current

3 **Compatible with mainstream global battery brands**

4 **Two types of generator connections**

5 **Cloud monitoring**
for clear understanding of system status

6 **Supports peak control**
in both 'self-use' and 'generator' modes

7 **Connects up to 6 units in parallel**
on grid or off grid

8 **160% 2s rated power output**
Short-term peak support

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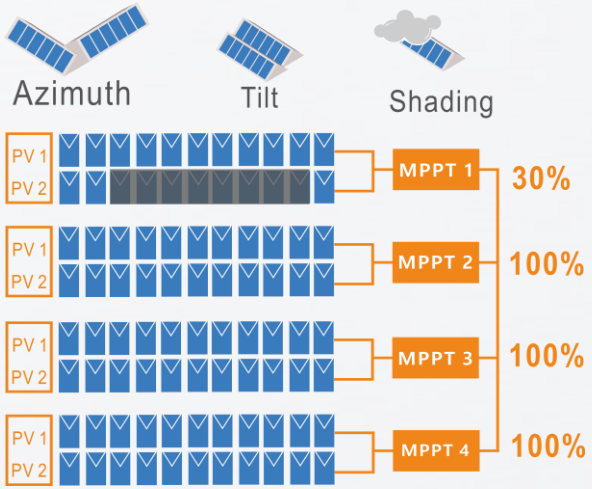
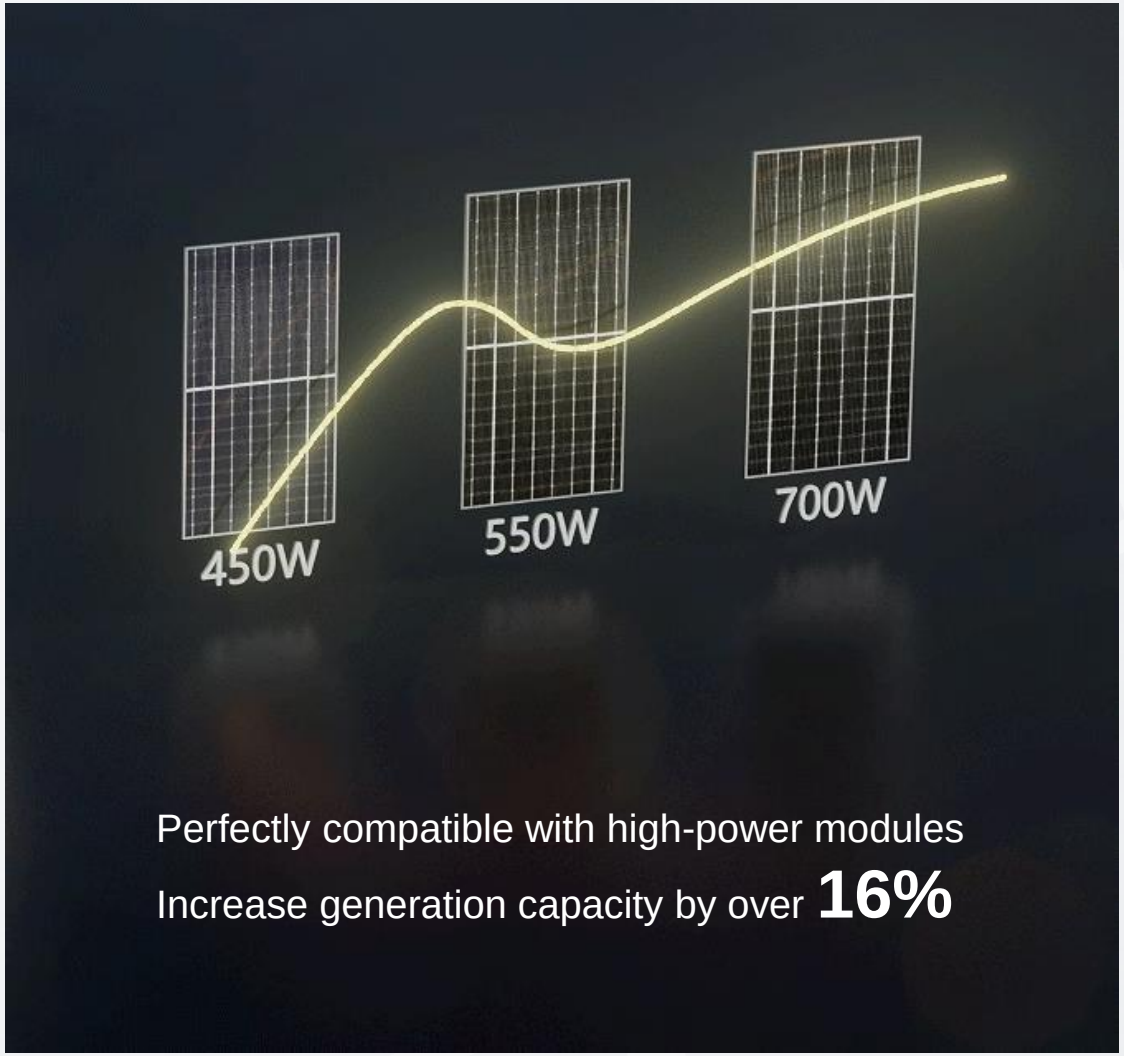
4 MPPT inputs
Up to 20A of single-string current per MPPT

4 MPPT inputs

Up to **20A** of single-string current per MPPT



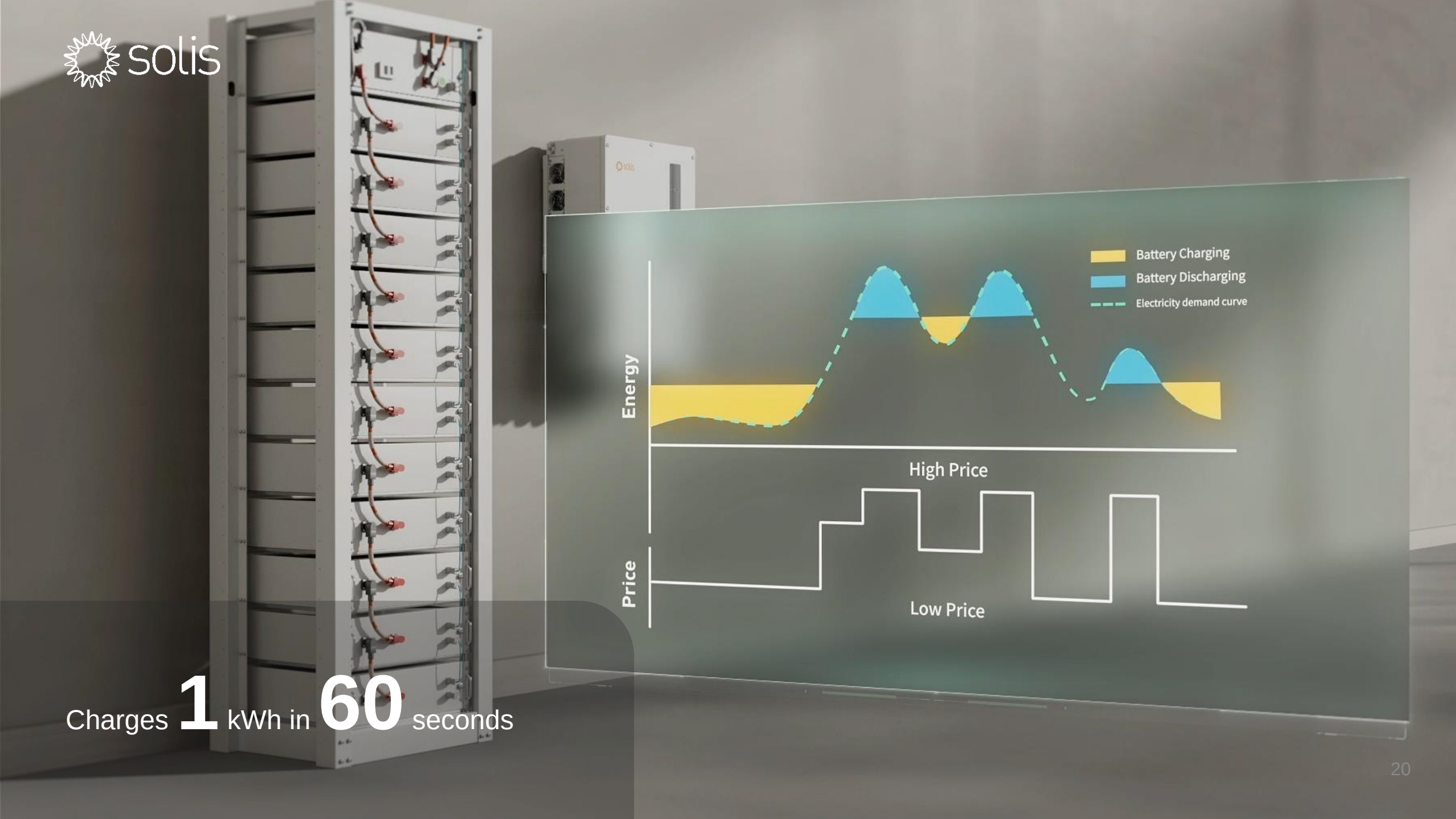


2 **140A / 70+70A**
Maximum charge and discharge current

Compatible with high-current charge and discharge batteries

Maximum charge and discharge current of

140A / 70+70A



Charges **1** kWh in **60** seconds

Compatible with mainstream global battery brands

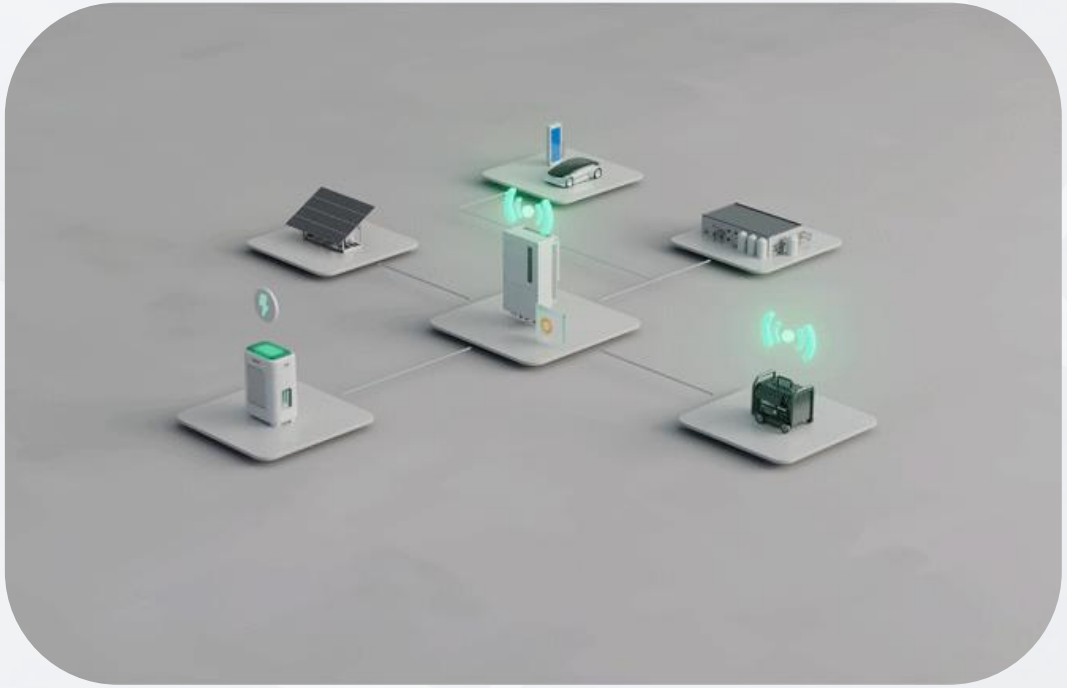
Compatible with

mainstream global

battery brands

Enhanced battery protection and operation functions, prolongs battery life

Supports two types of generator connections



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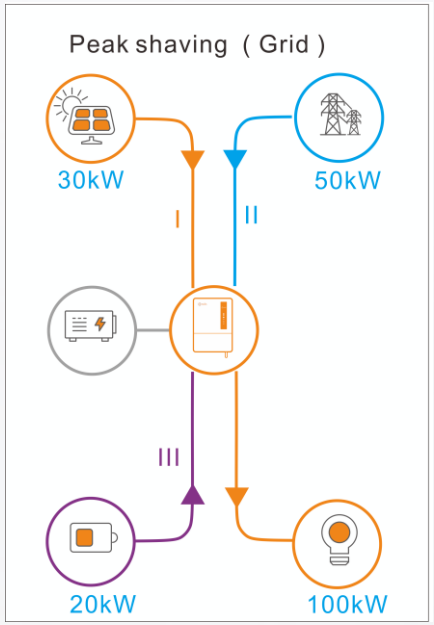
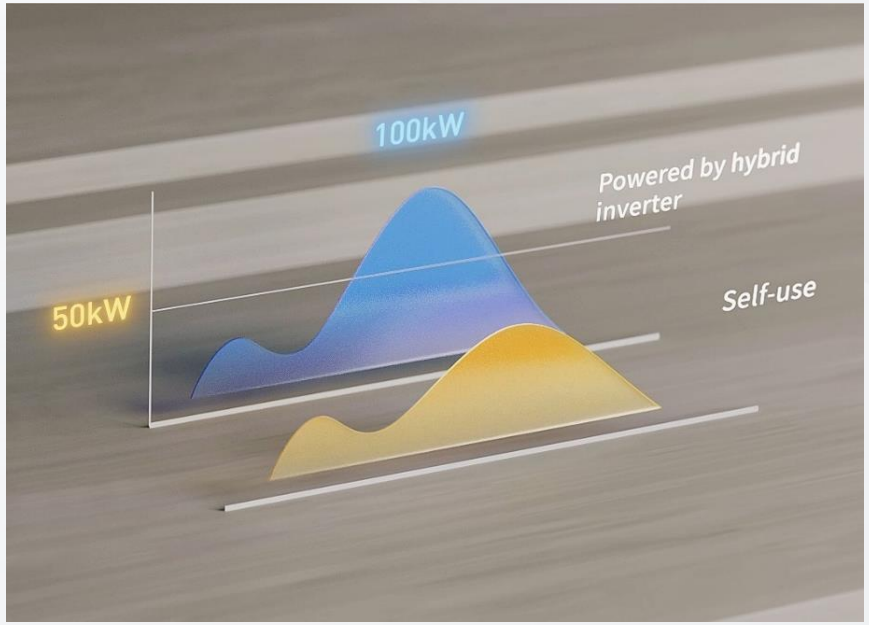
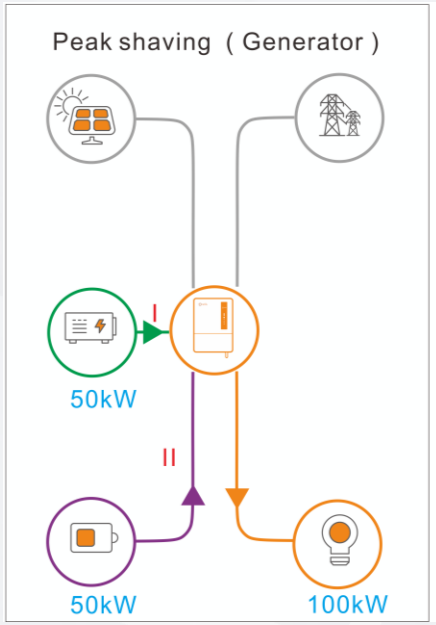
Cloud monitoring
for clear understanding of system status

Cloud monitoring for **clear** understanding of system status

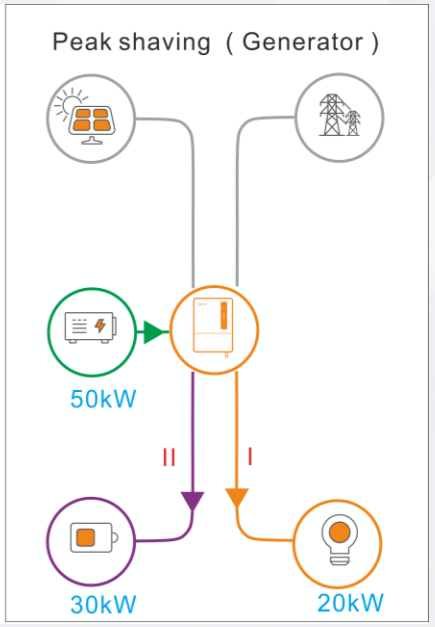
Supports peak control
in both 'self-use' and 'generator' modes







Loads > generator,
Generator + battery supplies power to the loads



Loads < generator,
The generator charges the battery

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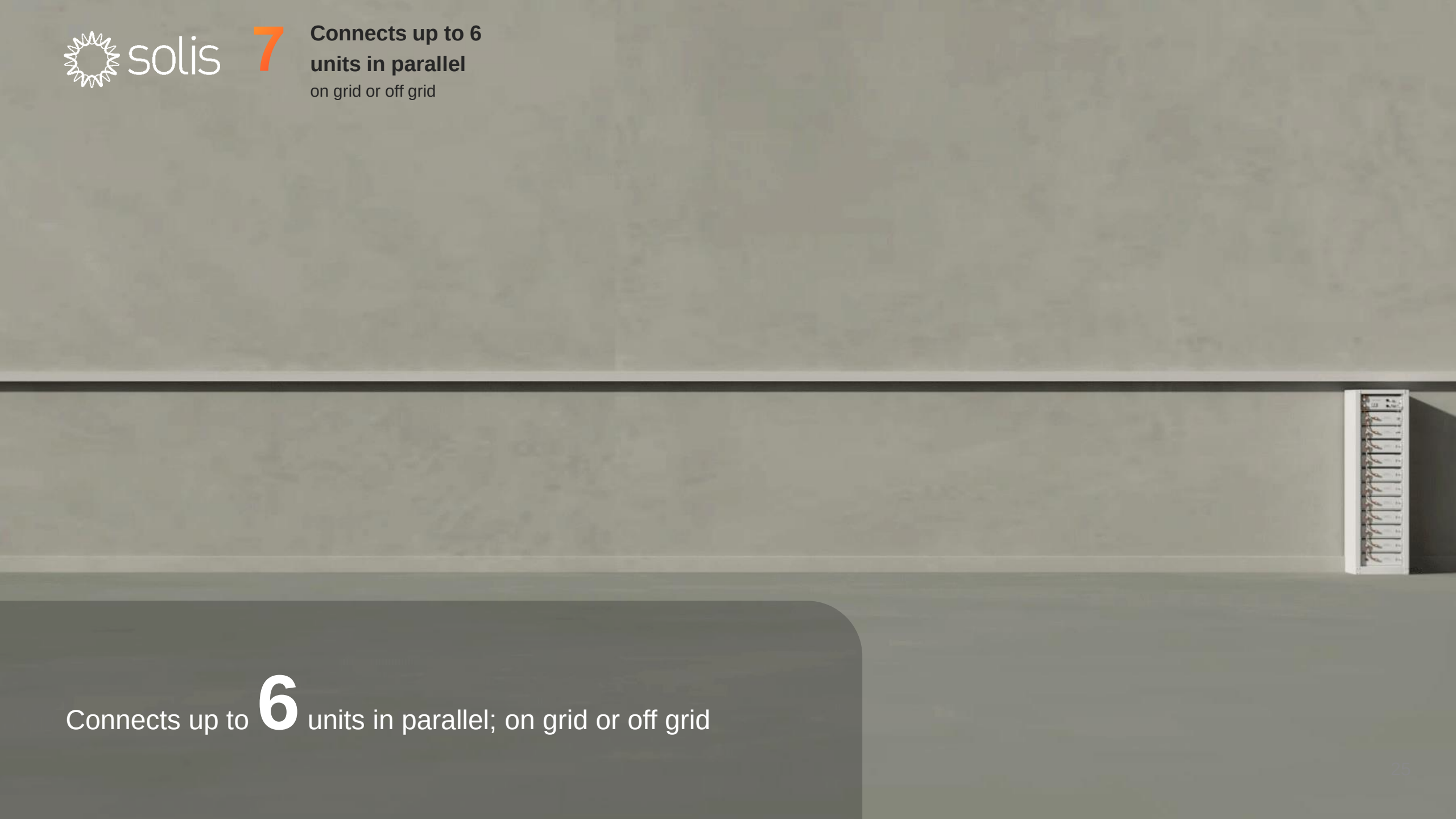
Connects up to 6 units in parallel

on grid or off grid

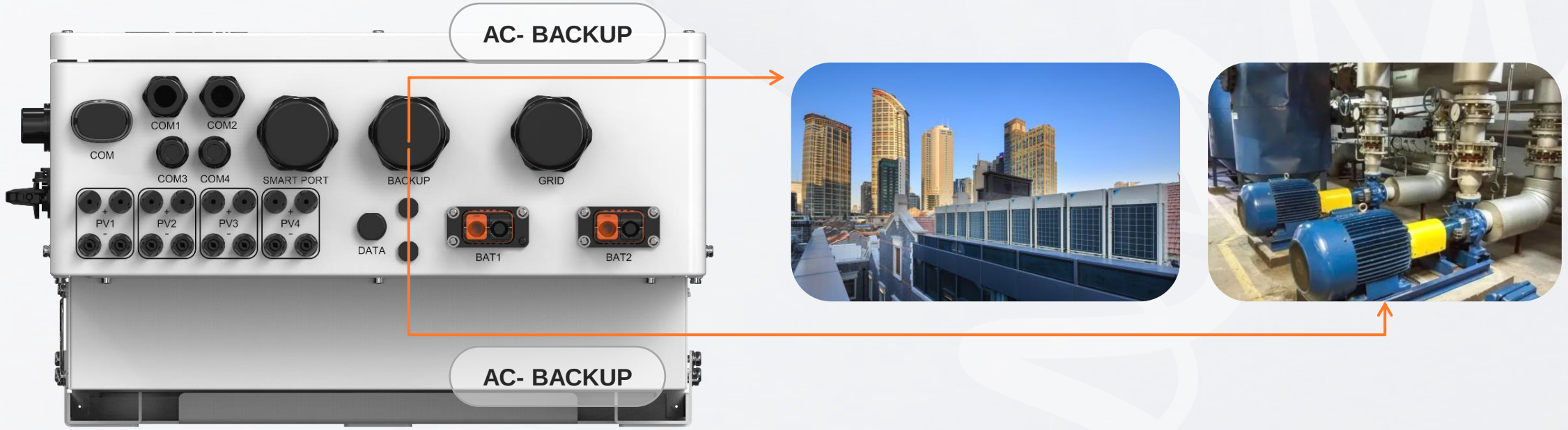


Connects up to **6** units in parallel; on grid or off grid

160% 2s rated power output

Short-term peak support

Short-term peak support of **160%** 2s rated power output



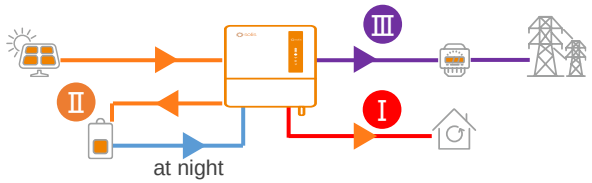
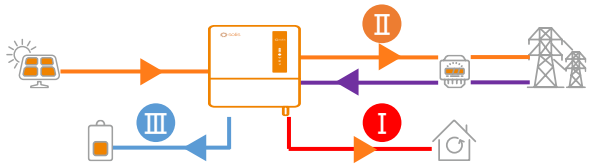
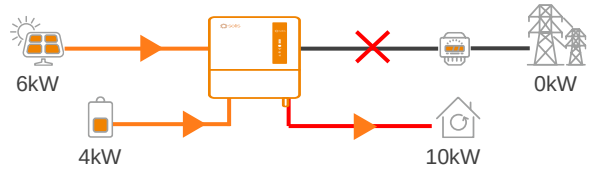
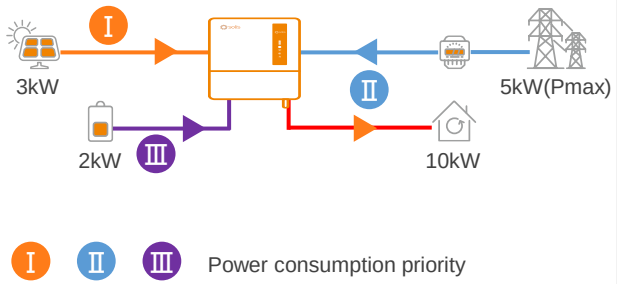
Technical Data

Models	30K-LV	29.9K	30K	40K	50K
Input DC (PV side)					
Recommended max PV array size	60 kW	59.8 kW	60 kW	80 kW	100 kW
Max. usable PV input power	60 kW	59.8 kW	60 kW	80 kW	96 kW
Max. input voltage	1000 V				
Rated voltage	600 V				
Start-up voltage	180 V				
MPPT voltage range	150-850 V				
Max. input current	3*40 A			4*40 A	
Max. short circuit current	3*60 A			4*60 A	
MPPT number/Max. input strings number	3*6			4*8	
Battery					
Battery type	Li-ion				
Battery voltage range	150-800 V				
Max. charge / discharge power	33 kW	29.9 kW	33 kW	44 kW	55 kW
Max. charge / discharge current	70 A*2 (1)				
No. of battery inputs	2				
Max. charge / discharge power of each input	33 kW	32.1 kW	33 kW	40 kW	40 kW
Communication	CAN/RS485				
Output AC (Grid side)					
Rated output power	30 kW	29.9 kW	30 kW	40 kW	50 kW
Max. apparent output power	30 kVA	29.9 kVA	30 kVA	40 kVA	50 kVA
Rated grid voltage	3/N/PE, 127 V / 220 V 3/N/PE, 133 V / 230 V		3/N/PE, 220 V / 380 V 3/N/PE, 230 V / 400 V		
Rated grid frequency	50 Hz / 60 Hz				
Rated grid output current	78.7 A / 75.3 A	45.4 A / 43.2 A	45.6 A / 43.3 A	60.8 A / 57.7 A	76 A / 72.2 A
Max. output current	78.7 A / 75.3 A	45.4 A / 43.2 A	45.6 A / 43.3 A	60.8 A / 57.7 A	76 A / 72.2 A
Power factor	>0.99 (0.8 leading - 0.8 lagging)				
THDi	< 3%				
Input AC (Grid side)					
Max. AC passthrough current	152 A / 152 A	90.8 A / 86.4 A	91.2 A / 86.6 A	121.6 A / 115.4 A	152 A / 144.4 A
Rated input voltage	3/N/PE, 127 V / 220 V 3/N/PE, 133 V / 230 V		3/N/PE, 220 V / 380 V 3/N/PE, 230 V / 400 V		
Rated input frequency	50 Hz / 60 Hz				
Input Generator					
Max. input power	30 kW	29.9 kW	30 kW	40 kW	50 kW
Rated input current	78.7 A / 75.3 A	45.4 A / 43.2 A	45.6 A / 43.3 A	60.8 A / 57.7 A	76 A / 72.2 A
Rated input voltage	3/N/PE, 127 V / 220 V 3/N/PE, 133 V / 230 V		3/N/PE, 220 V / 380 V 3/N/PE, 230 V / 400 V		
Rated input frequency	50 Hz / 60 Hz				

Technical Data

Models	30K-LV	29.9K	30K	40K	50K
Output AC (Back-up)					
Rated output power	30 kW	29.9 kW	30 kW	40 kW	50 kW
Max. apparent output power	1.6 times of rated power, 2 s				
Back-up switch time	< 10 ms				
Rated output voltage	3/N/PE, 127 V / 220 V 3/N/PE, 133 V / 230 V		3/N/PE, 220 V / 380 V 3/N/PE, 230 V / 400 V		
Rated frequency	50 Hz / 60 Hz				
Rated output current	78.7 A / 75.3 A	45.4 A / 43.2 A	45.6 A / 43.3 A	60.8 A / 57.7 A	76 A / 72.2 A
THDv (@linear load)	< 2%				
Efficiency					
Max. efficiency	97.8%				
EU efficiency	97.4%				
BAT charged by PV Max. efficiency	98.5%				
BAT charged/discharged to AC Max. efficiency	97.5%				
Protection					
Anti-islanding protection	Yes				
Output over current protection	Yes				
Short circuit protection	Yes				
Integrated DC switch	Optional				
DC reverse-polarity protection	Yes				
Surge protection	DC Type II / AC Type II				
Integrated AFCI (DC arc-fault circuit protection)	Yes (2)				
General Data					
Dimensions (W*H*D)	530*880*290 mm				
Weight	73 kg				
Topology	Non-isolated				
Self-consumption (night)	<25 W				
Operating ambient temperature range	-25 ~ +60°C				
Relative humidity	0-95%				
Ingress protection	IP66				
Cooling concept	Intelligent redundant fan-cooling				
Max. operation altitude	4000 m				
Grid connection standard	G98 or G99, VDE-AR-N 4105 / VDE V 0124, EN 50549-1, VDE 0126 / UTE C 15 / VFR:2019, RD 1699 / RD 244 / UNE 206006 / UNE 206007-1, CEI 0-21, C10/11, NRS 097-2-1, TOR, EIFS 2018.2, IEC 62116, IEC 61727, IEC 60068, IEC 61683, EN 50530, MEA, PEA				
Safety/EMC standard	IEC/EN 62109-1/-2, IEC/EN 61000-6-1/-3				

Work Modes

	Working mode	Working logic	Usage
	**Self of use**	Load priority: load>battery>grid Power supply priority: PVr>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. No Grid available.
	**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_discharge+P_max+PV < P_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.

04 System Introduction

Product Features

Product Features of Solis S6 Three Phase High-voltage Hybrid Inverter

- Integrated 4 MPPTs ,up to 20A input current per string;
- High efficiency charge/discharge Up to 2*70A total Charge and Discharge= 140A;
- DC/AC ratio up to 200% of the rated AC inverter capacity;
- 2 second 160% surge power backup overload capability,
- UPS switching ＜10 ms;
- Supports Unbalanced and Half-Wave Loads on both the Grid and Backup Port;
- Built-in Port to connect Diesel Generator and Grid tied AC coupled inverter, applicable to off-gird scenario and the retrofit of an existing PV plant;
- Ingress protected to IP66 with high environment adaptability; High abrasive resistance C5 coated.
- Compatible with lithium batteries, with Multiple battery protection functions to extend battery lifetime;
- Support battery wakeup function.
- Battery reserve function to meet the backup demand during power outages;
- 24h self-consumption monitoring, even without PV modules;
- Bluetooth connection to mobile phone, make the setting and operation easier.
- Remote firmware upgrade for inverter.
- Remote inverter control
- Time of use settings with 6 customizable charge/discharge timeslots with SOC levels

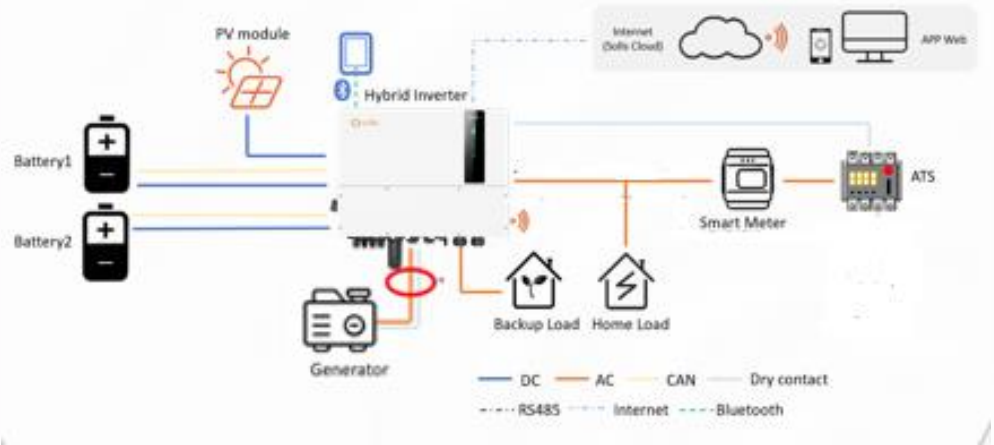
S6-EH3P(29.9-50)K-H

Key Functions

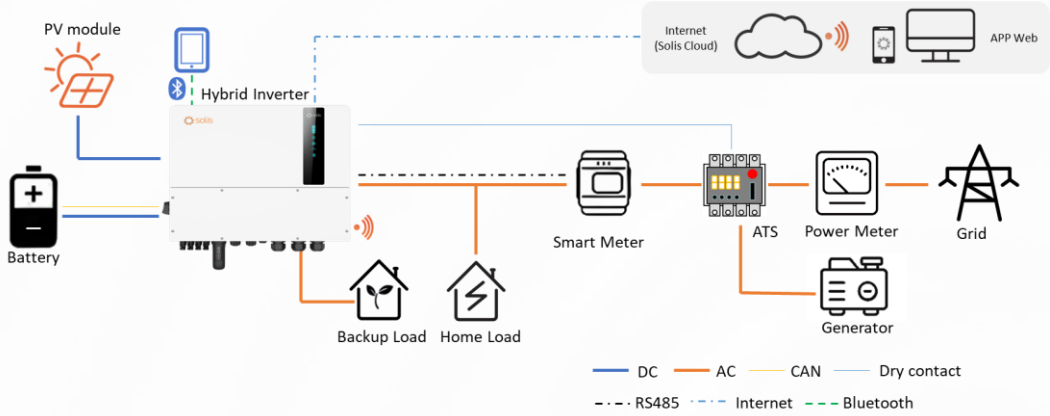
Functions	Working logic	Usage
TOU function	Support 6 customisable charge/discharge time settings，while the battery will charge/discharge at a set current.	This function applies the area with Peak-valley Price, set the system to charge the battery in valley price and discharge in peak price to improve benefits.
Battery reserve function	Load Priority: battery>load>grid Power supply priority: PV>grid	This function applies the area that has frequent power outages , to ensure that reserved battery capacity is reserved for grid outages.
Feed in power limit function	Feed in power will be limited according a set value.	This mode applies area where export is allowed but limited by the utility.
ECO function	To protect the battery, If PV power is lower than 100W and SOC below overdischarge SOC, The inverter will take power from the grid instead of battery, to maintain standby state,indicator and communication.	/
Battery Wake up function	Battery wake-up can be supported in case of only PV or only Grid or only one of the two Batteries is available. This function supports manual and automatic operation, the battery can be awakened from the dormant state and charged above the overdischarge SOC. Wake up voltage and timeframe can be set: Voltage: default 120V, range :120-600V; Time : default 180s,range :20s-300s; The wake-up current depends on the battery, up to 6A.	/
Battery Healing Function	When the lithium battery maintains low power for a long time, the battery SOC measurement is not accurate，It is necessary to charge the battery to 100 % from low power level to ensure the healthy and stable operation of the battery. Working logic：PV+grid charge the battery from Forcecharge SOC to overdischarge SOC , then grid stops charging, PV gives priority to charging the battery to Battery Healing SOC. And the battery does not discharge before reaching the set Battery Healing SOC.	/
Battery Peak shaving function	In this function, the force charge power will be dynamically adjusted and not exceed the set value minus the load power when force charging. This fully depends on the available battery capacity for this function.	/

System with Generator

Generator on Gen port side



Generator on Grid side

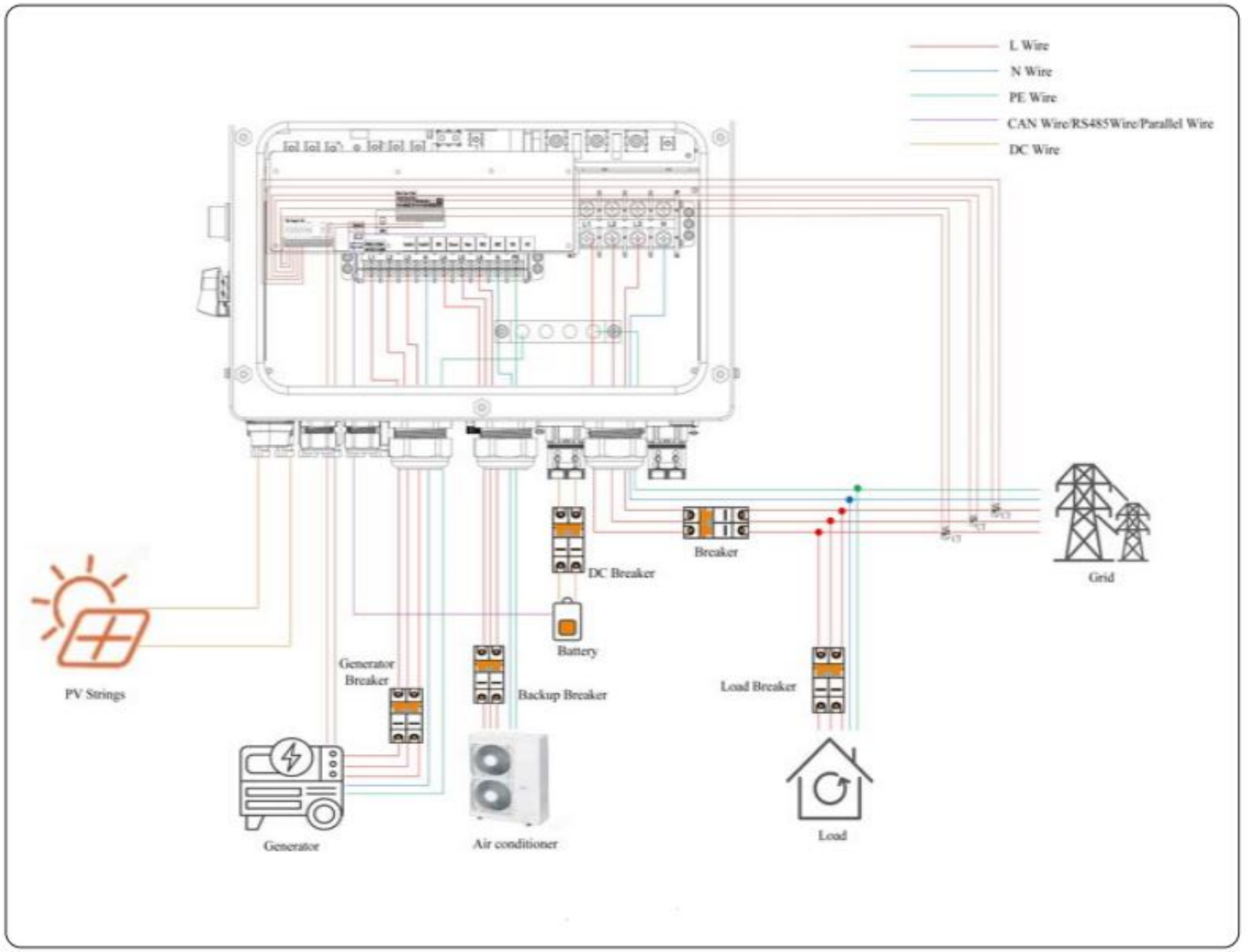


NOTE:

- In single or parallel ,Diesel Generator can be connected either to the AC-Gen port or Grid Port via ATS.
  If via AC-Gen port, it will only supply power to the Backup load ;
- When the generator is connected to the system, it is necessary to correctly select the location of the generator on the APP to avoid system failure or generator damage ;

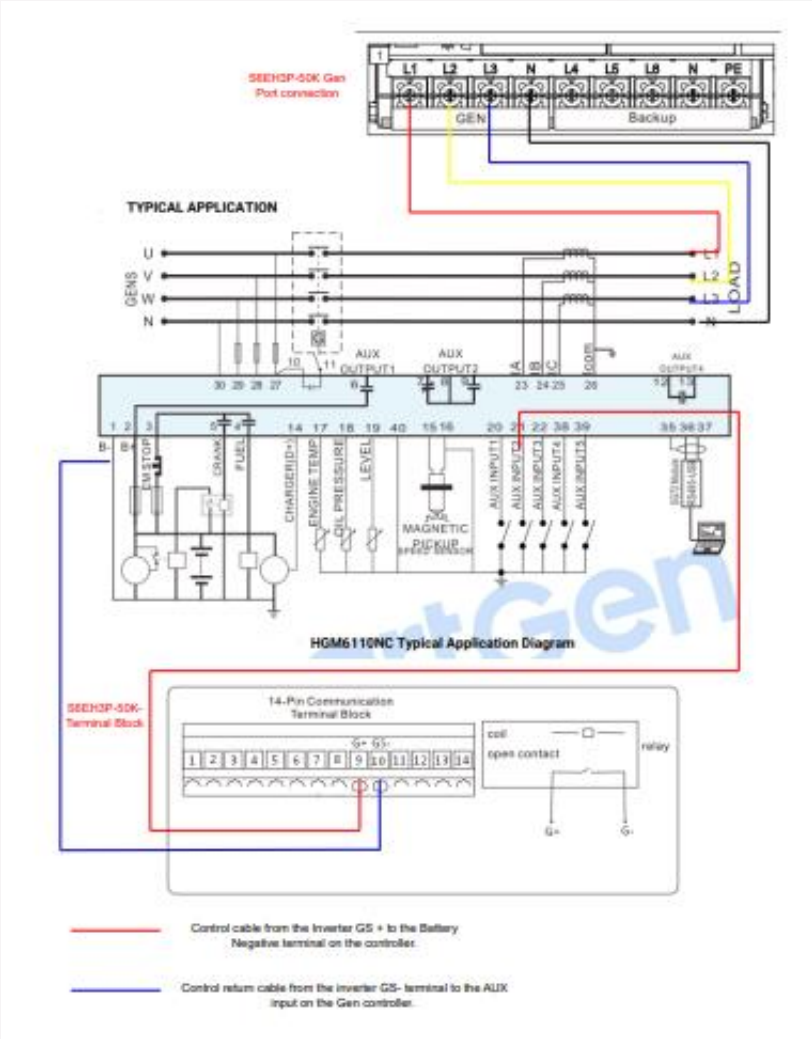
System with Generator

Generator connected on the GEN Port



System with Generator

Generator on GEN Port side with remote Start and Stop



NOTE:

- The G- terminal is a voltage-free dry contact signal for connecting with generator's NO relay to start up the generator when necessary.

Generater Control Logic

Generally, the access of Diesel Generator is in the off-grid scenario, or in the area that has frequent power outages.

Work logic is as follows:

I. When the grid is not available, the battery is discharged to GEN_Start_SOC，the generator starts to power the loads and charge the battery to GEN_Exit_SOC,then stop the generator.

II. If the load power > the generator rated power in (i), the battery will be discharged to power the load to until Over discharge_SOC, then generator may shutdown due to overload and the load power off.

III. If the generator fail to start in (i),the battery will be discharge to Overdischarge_SOC,then the load power off.

IV. If the system goes into the end of （iii），the battery will not discharge before charged to Overdischarge_SOC+ Overdischarge_Hysteresis_SOC (set by user).

Control logic is as follows:

The logic of DG control:

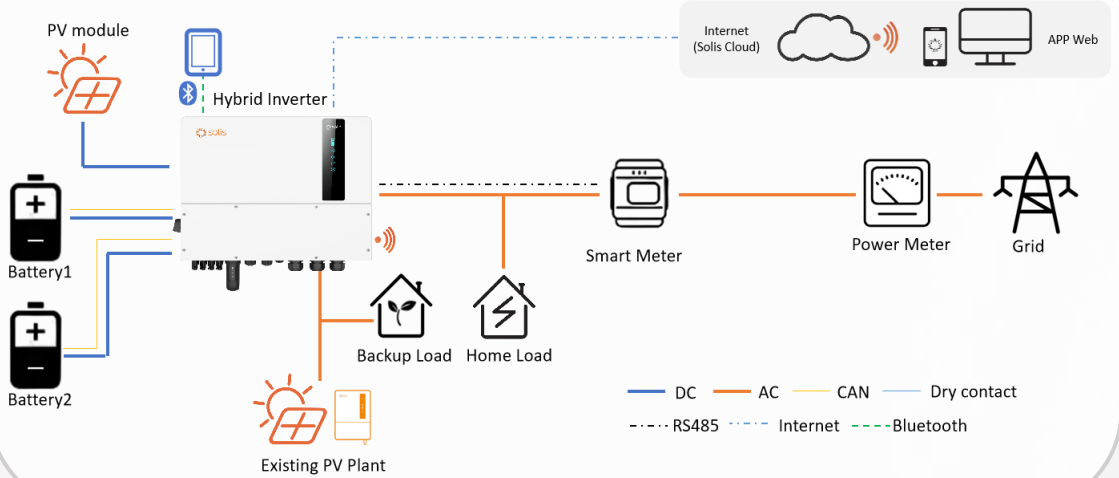
- To start the generator, relay pull-in, dry contact short circuit.
- To stop the generator, relay release, dry contact open circuit.

The logic of ATS feedback:

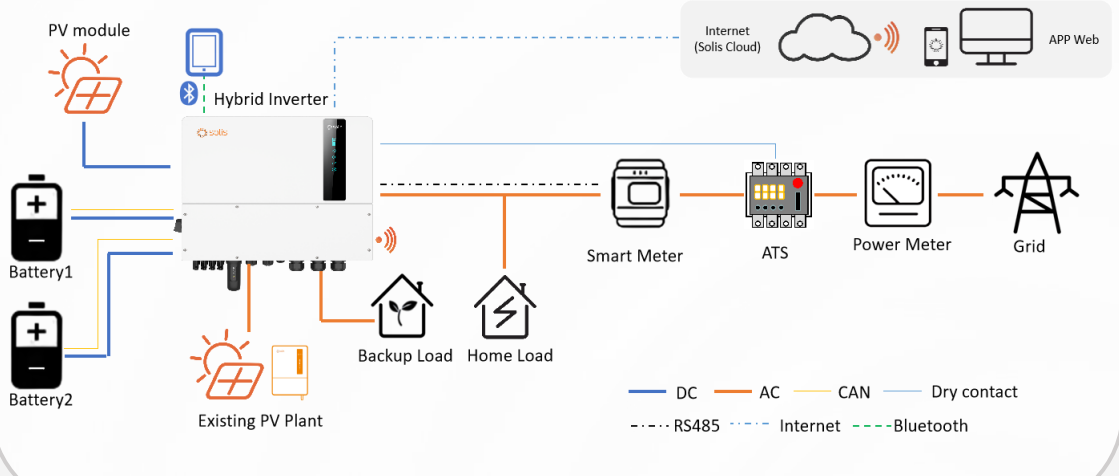
- Output 230V AC voltage when inverter is connected to the grid .
- Output 0V when inverter is connected to the generator.

System with Gird-tied Inverter

Gird-tied Inverter on Backup port



Gird-tied Inverter on Gen port



NOTE:

- Grid-tied inverter can be connected via AC-Gen port or AC-Backup port.
- With existing PV Plant connected to the system, it is recommended that： Grid-tied inverter power < rated AC power of S6 inverter ;
- In on-grid scenario, when the grid tied inverter is connected, the system cannot control the output power of the grid-tied inverter, so Feed-in limitation cannot be realized ;
- When connected in off-grid scenario, the grid-tied 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-tied inverter.
- The grid-connected inverter can be connected with Hybrid inverter in parallel . In order to realize Feed-in limitation, it is necessary to add EPM or S3-Logger devices.
- When the system is connected to the generator, it cannot be connected to the grid-tied inverter, because of a risk of damaging the generator ;

Grid-tied Inverter Control Logic

Grid-tied inverter

The working logic is as follows:

- On-grid operation logic :

PV-hybrid + PV-grid-tied power the load and then charge the battery, the excess power will be fed into the grid. The system does not restrict the output of AC coupled Grid-tied Inverter.

- Off-grid operation logic :

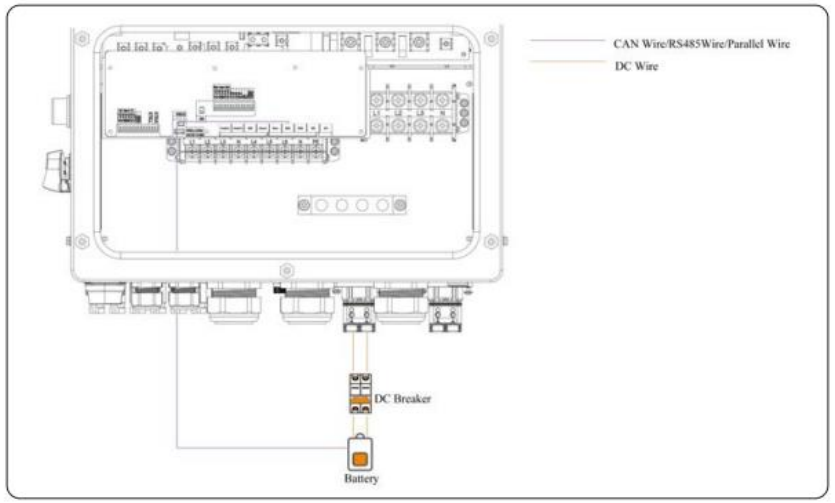
PV-hybrid + PV-grid-tied power the load and then charge the battery, until the battery reaches AC Coupling-OFF-SOC, the system will restrict the output power of AC coupled Grid-tied Inverter to zero.

The Access of Battery

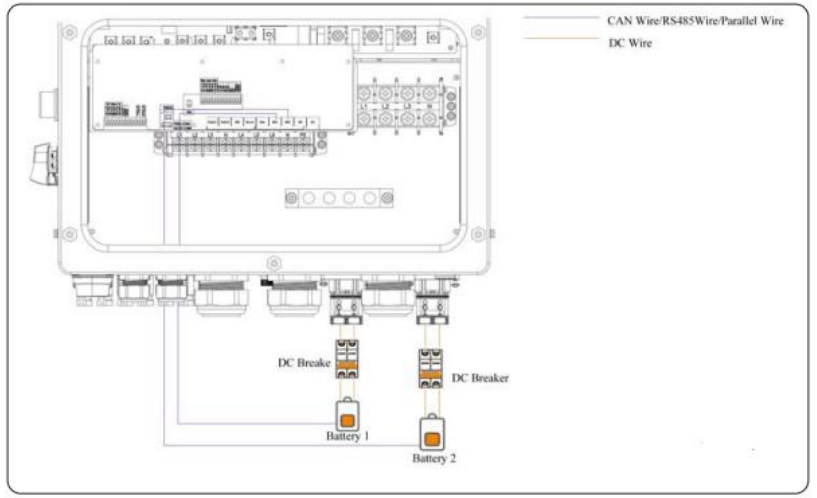
- support three method to connect the batteries for both single system and parallel system

The Access of Battery

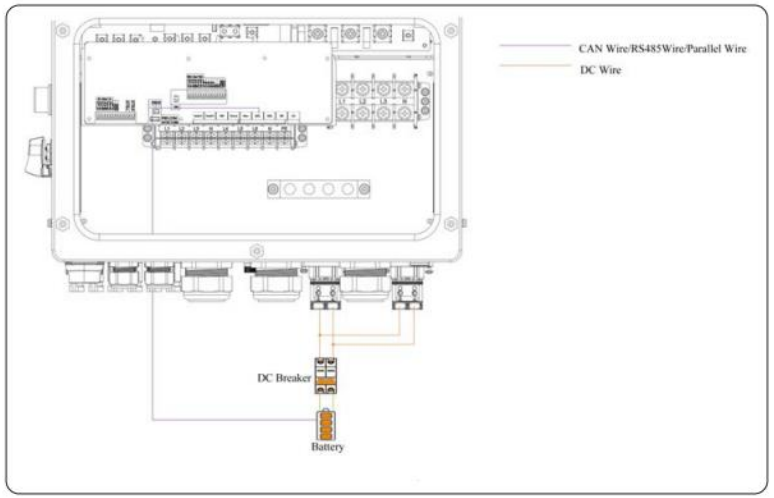
- The inverter supports three method to connect the lithium batteries for both single system and parallel system



- If you have only one battery, you MUST connect it to DC 1 port on inverter, and communication cable MUST be connected to BMS 1 port on the inside terminal block.

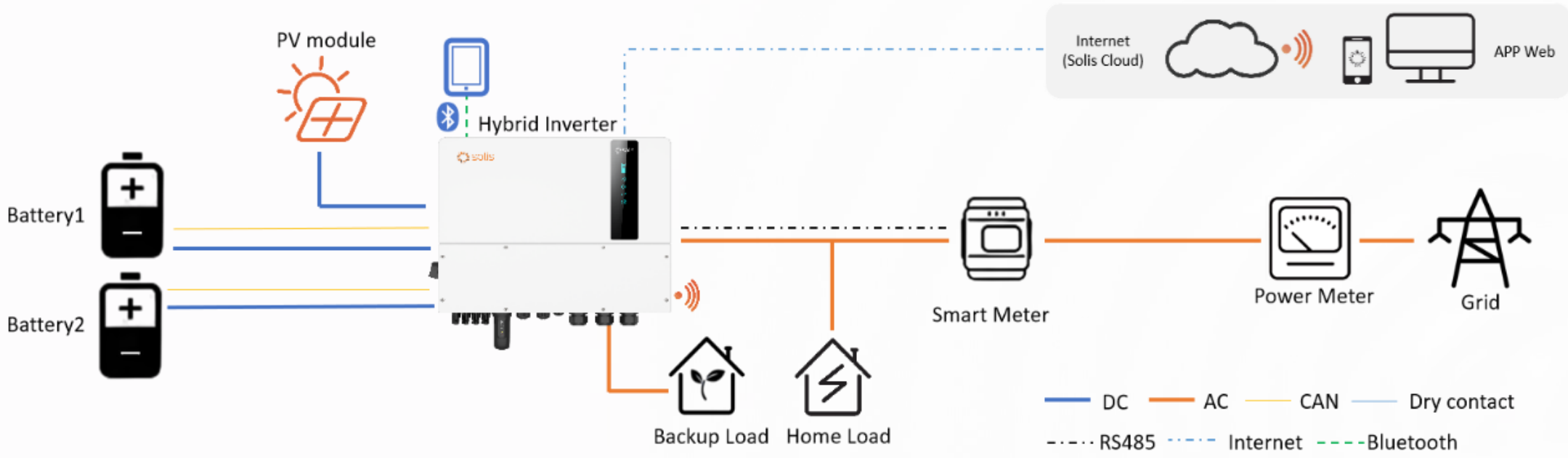


- If you have only two battery, you MUST connect the first battery bank to DC 1 port on inverter, and communication cable MUST be connected to BMS 1 port on the inside terminal block then you MUST connect the second battery bank to DC 2 port on inverter, and communication cable MUST be connected to BMS 2 port on the inside terminal block.



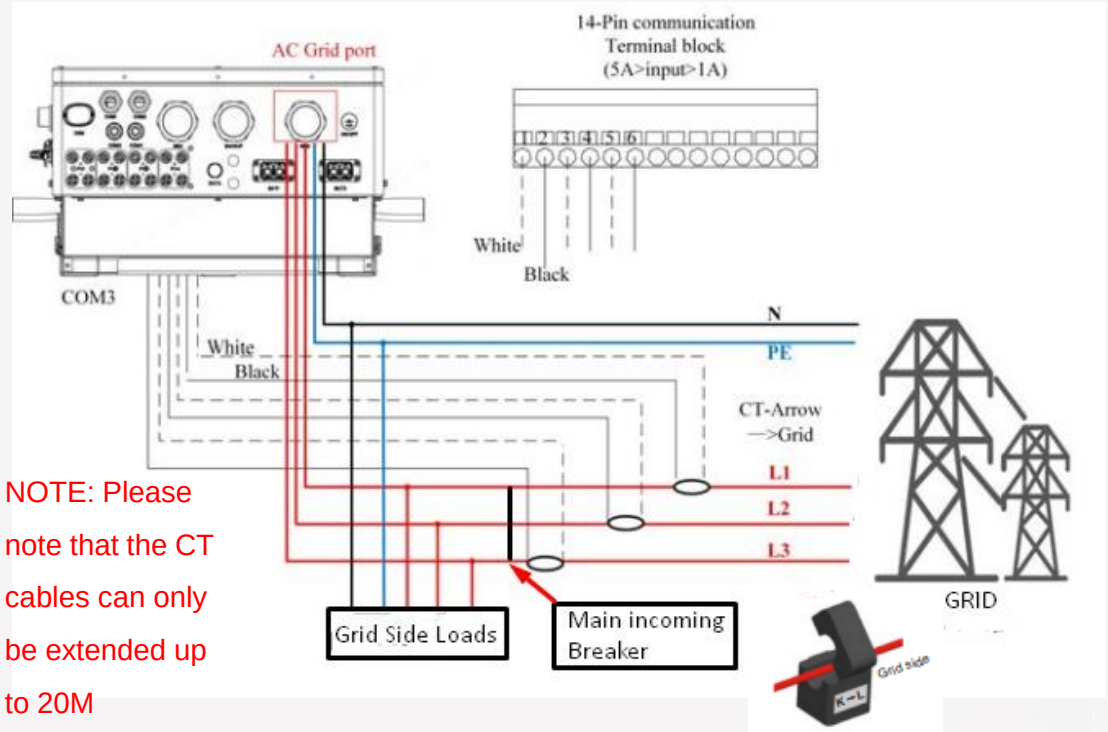
- NOTE: For this battery wiring mode, the communication wire must be connected to the BMS 1 port of inverter.

Single system



Inverter Meter or CT Wiring Diagram

CT Positioning

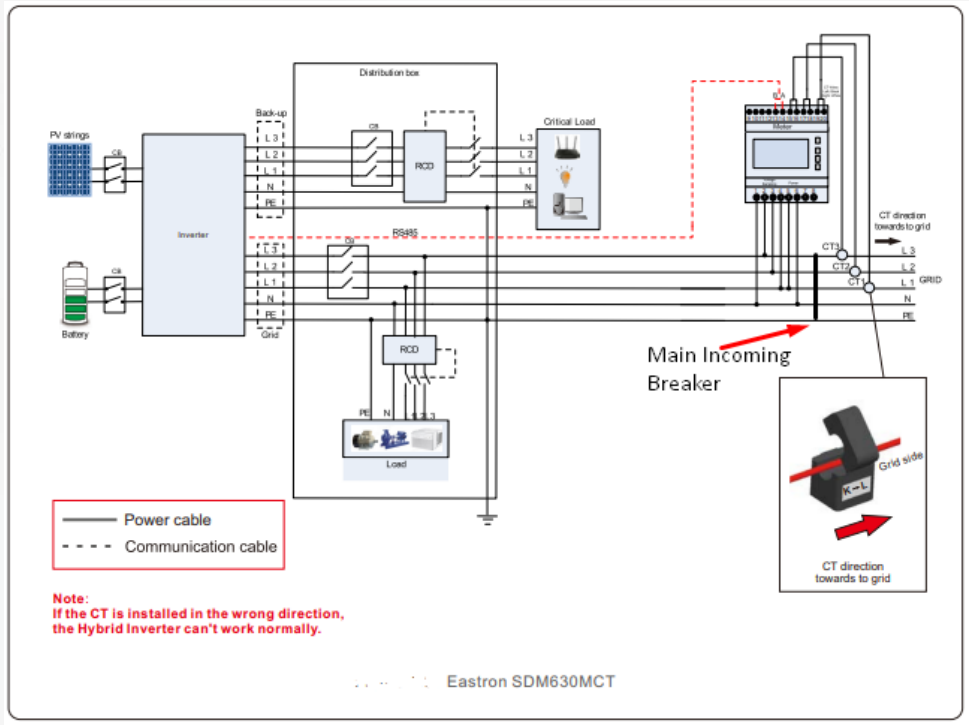


NOTE: Please note that the CT cables can only be extended up to 20M

- NOTE: Please note that the CT orientation must be correct, otherwise the system will not work properly.
- Lead the CT wires through the COM3 port at the bottom of the inverter and connect the CT wires to the 14pin communication terminal block.

CT Wire	14 PIN Communication Terminal Block
White	Pin 1 (From Left to Right)
Black	Pin 2 (From Left to Right)
White	Pin 3 (From Left to Right)
Black	Pin 4 (From Left to Right)
White	Pin 5 (From Left to Right)
Black	Pin 6 (From Left to Right)

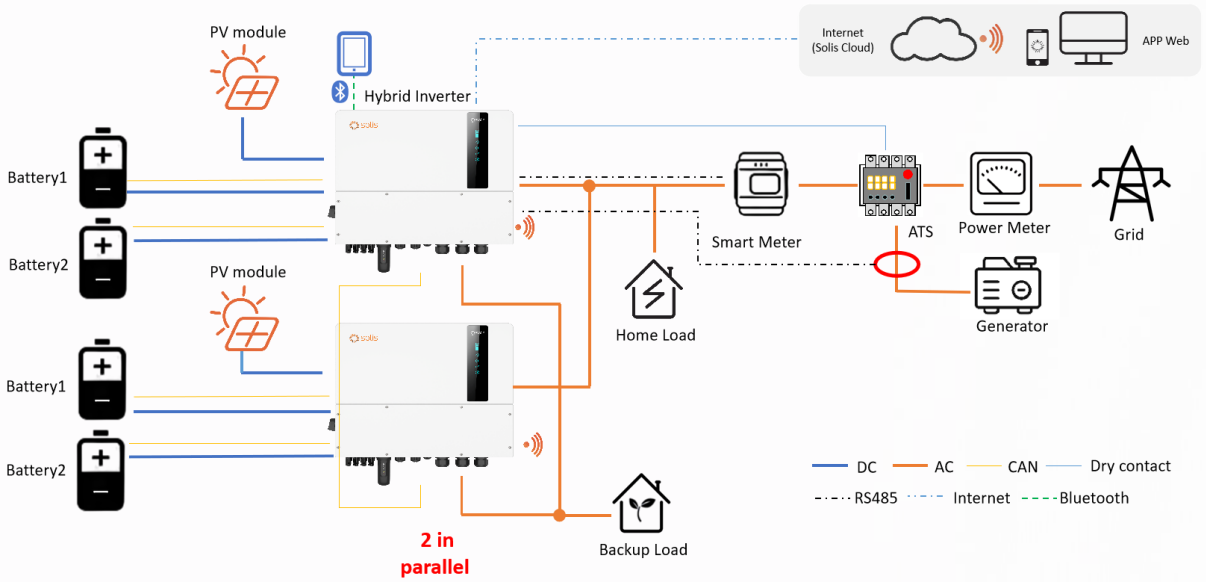
Meter & CT Positioning



- The Solis S6-EH3P(29.9-50)K-H Series inverters are able to connected standard Eastron meters to fulfill the control logic of the self-consumption mode, export power control, monitoring, etc. Eastron 3ph meter (With CT): SDM630MCT V2 (Provided by default).
- CAUTION: Make sure the AC cable is totally isolated from AC power before connecting the smart meter or CT.

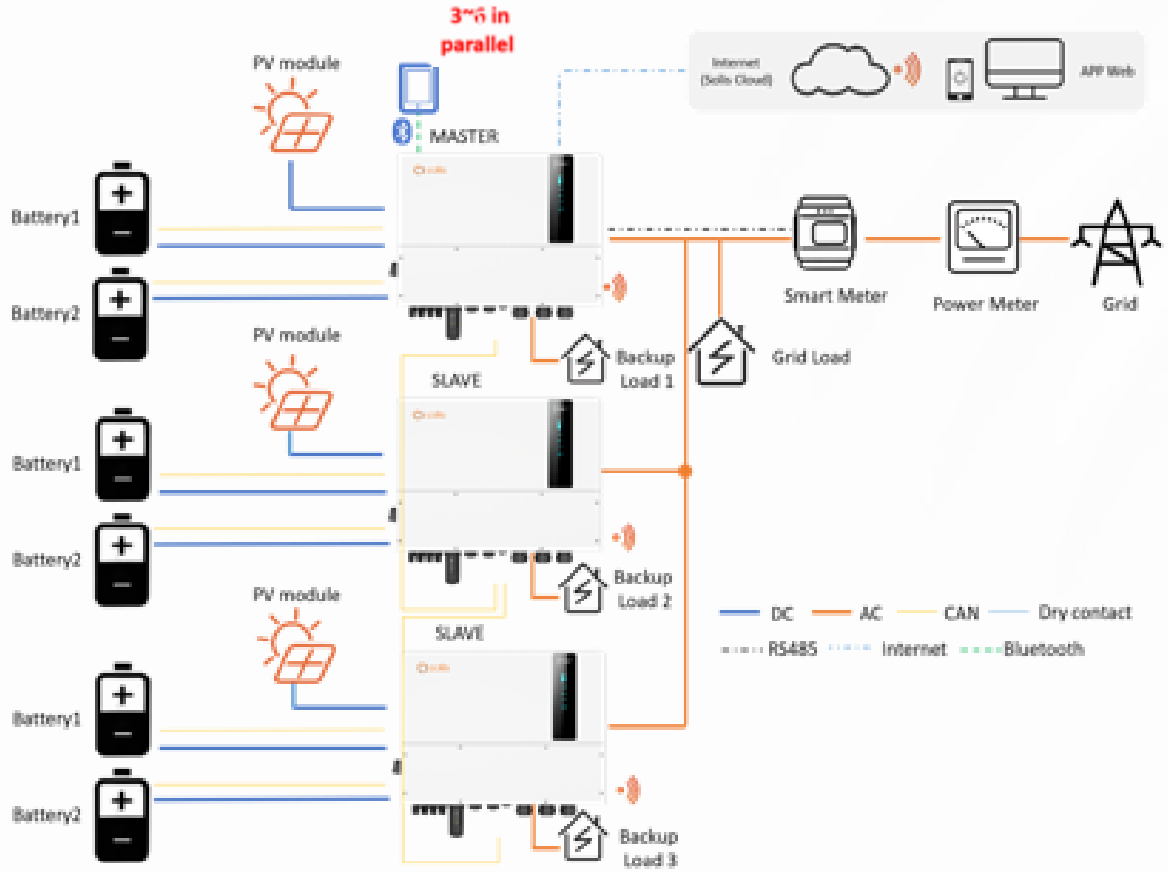
Compatible Smart Meter Model	Meter RS485 Pin Definition
SDM630MCT	Pin 13 – RS485B, Pin 14 – RS485A

2 Parallel System



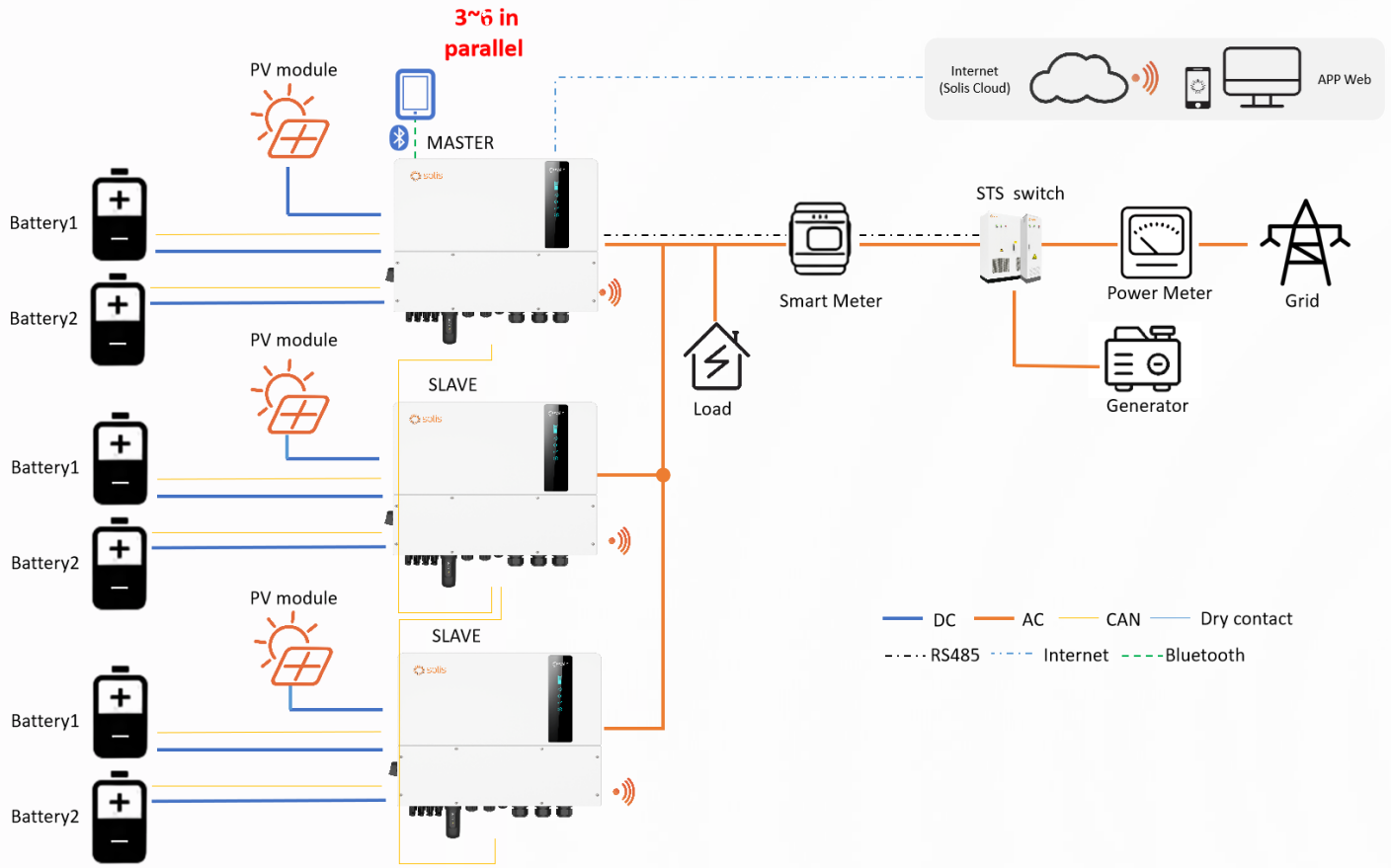
- Support maximun 6 in parallel,up to 300KW;
- In parallel-system scenarios, it is recommended that the specification and total capacity of battery on the master and slave inverter be the same; If it's different, it is recommended to connect the battery of larger capacity to the master inverter , if the battery with larger capacity is connected to a slave inverter , it may fail to fully discharge in heavy load scenarios.
- Parallel connection of different model inverters is not supported.(Like 30K and 50K can't be connected in parallel).
- The AC-Backup port can be connected in parallel（up to 6 in parallel connections）, after parallel connection,and the single-phase output capacity is 1 / 3 of the total power.
- Parallel connection of BAT port is not supported between each inverter.
- In parallel-system scenarios, The system will preferentially charge the battery with the lowest power. To achieve such a working logic, it is necessary to enable ' Grid charging ' ;
- The CT delivered with the inverter supports maximum 180 KW(380VAC), and a higher power parallel system requires an optional CT ;
- Maximum CT distance (20M) for longer distances it is recommended to get Eastron 3phase energy meter. (SMD630)

3~6 Parallel System （Normal Configuration）



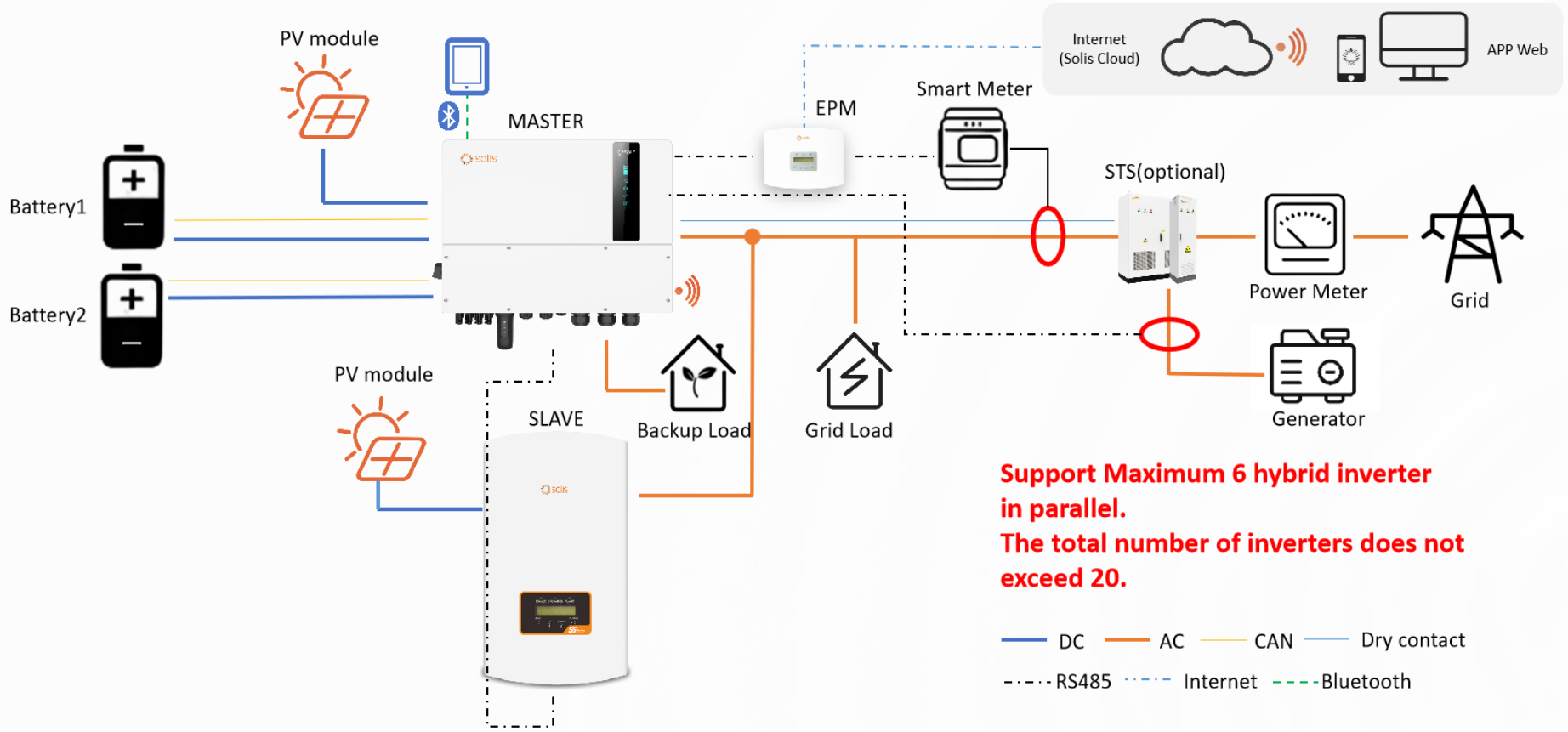
- In normal parallel system, the backup port is not connected in parallel.

3~6 Parallel System （Advanced Configuration）



- With change over switch, the system switch to off-grid mode in 10ms， when the grid is lost.

Mixed Parallel System（EPM） (May 30th)



- EPM devices only have one RS485 communication port， supports maximum 20 inverters in parallel.
- Change over switch panel is optional devices to ensure uninterruptible power supply to critical load , when the grid is not available.

Capacity Configuration

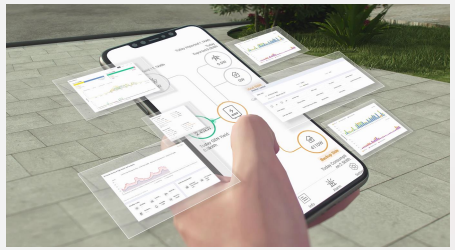
- The required output voltage range of third-party battery is 150V ~ 800V,up to 70A*2 charge and discharge current;
- With existing PV Plant connected to the system，it is recommended that： Grid-tied inverter power＜ rated AC power of S6 inverter；
- The maximum input power of the Grid port and Gen port of S6 inverter supports 2 times the rated power. It is recommended that the generator power is 2 times the rated Grid power of S6 inverter. To support the battery charge and load power.

Scenarios	S6-EH3P30K-H	S6-EH3P40K-H	S6-EH3P50K-H	Backup Parallel output capability (for 50K)	Backup single-phase output（For 50K）1/3	Battery Capacity Recommendation (For 50K，Backup 2h，0.5C)
	AC capacity	AC capacity	AC capacity			
1 single	30K	40K	50K	50K	16,6K	50KWh*2
2 in parallel	60K	80K	100K	100K	33,3K	50KWh*2*2
3 in parallel	90K	120K	150K	150K	49,9K	50KWh*2*3
4 in parallel	120K	160K	200K	200K	66,6K	50KWh*2*4
5 in parallel	150K	200K	250K	250K	83,3K	50KWh*2*5
6 in parallel	180K	240K	300K	300K	99,9K	50KWh*2*6

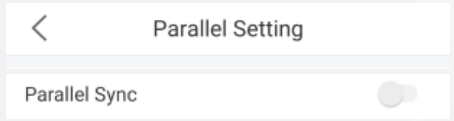
05 App Introduction

Advantages of Connecting Through Solis App

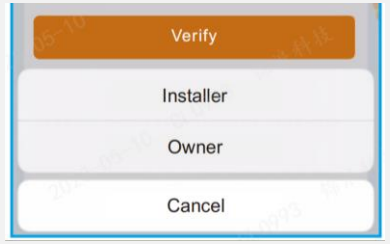
01 With large screen display of the phone， More rich, easier to operate, more humanistic characteristics.



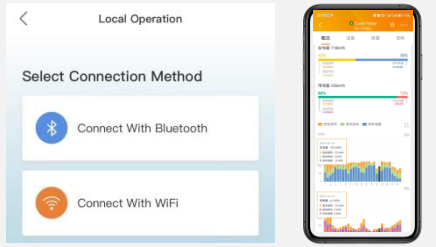
02 In the establishment of parallel system, with synchronization Settings, fast and efficient



03 Log in to the APP, it can distinguish the identity of the login account to avoid the normal operation the inverter caused by misoperation.

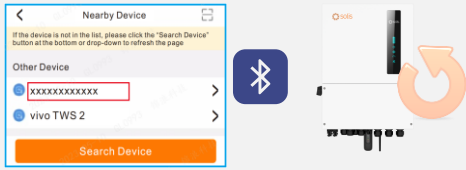


04 Support Bluetooth connection, realize APP view system operation.

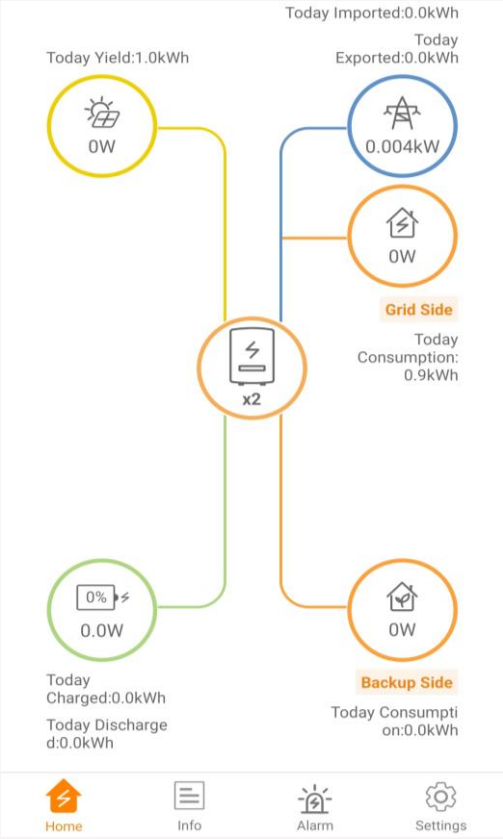


05 APP has storage function, to achieve one key setting.

06 The inverter can be upgraded from the near end for rapid stability.



Advantages of Connecting Through Solis App

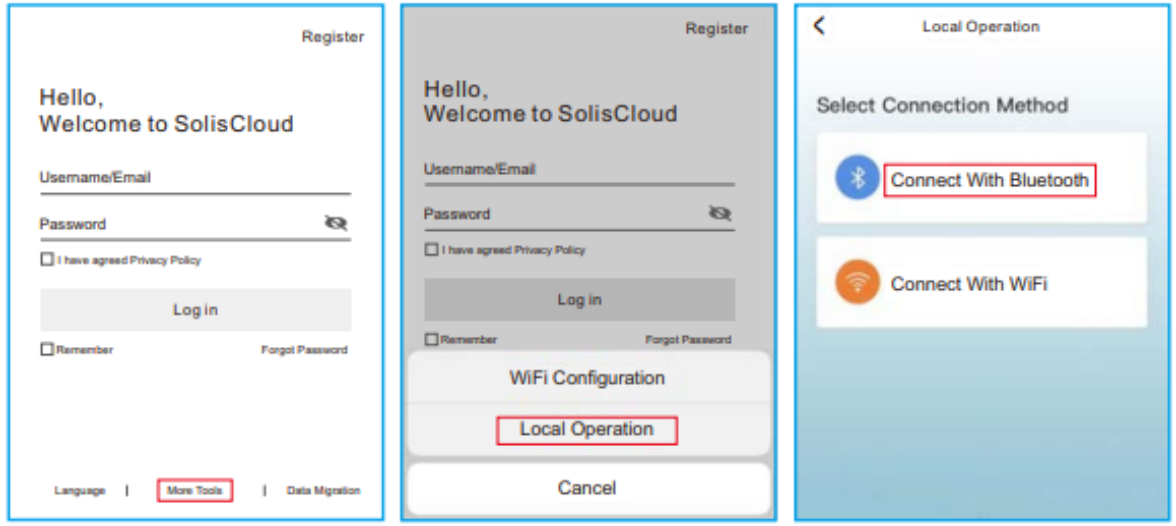


Once connected to Bluetooth you can get the Battery, PV, Load, grid side and Grid information from just the home page screen.

Advantages of Connecting Through Solis App

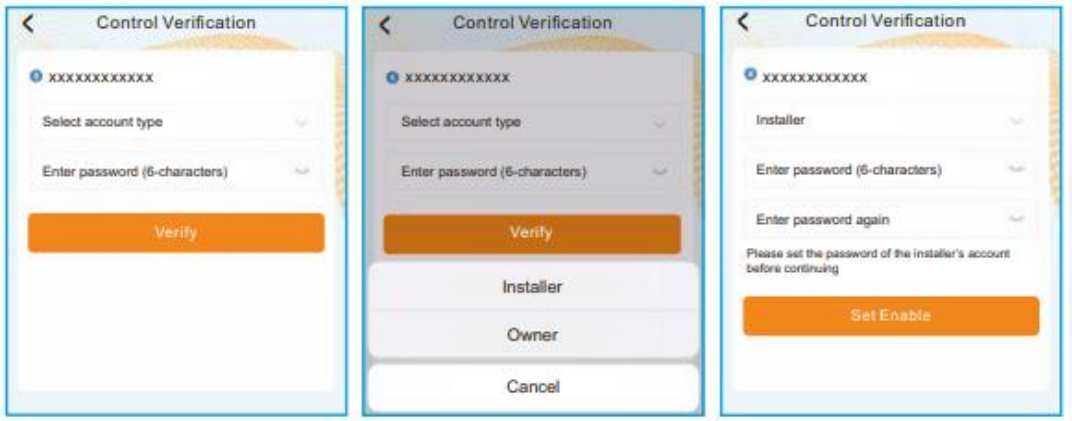
Log in the APP via Bluetooth

Step 1: Connect with Bluetooth. Turn on Bluetooth switch on your mobile phone and then open the Soliscloud APP. Click “More Tools”->”Local Operation”->”Connect with Bluetooth”



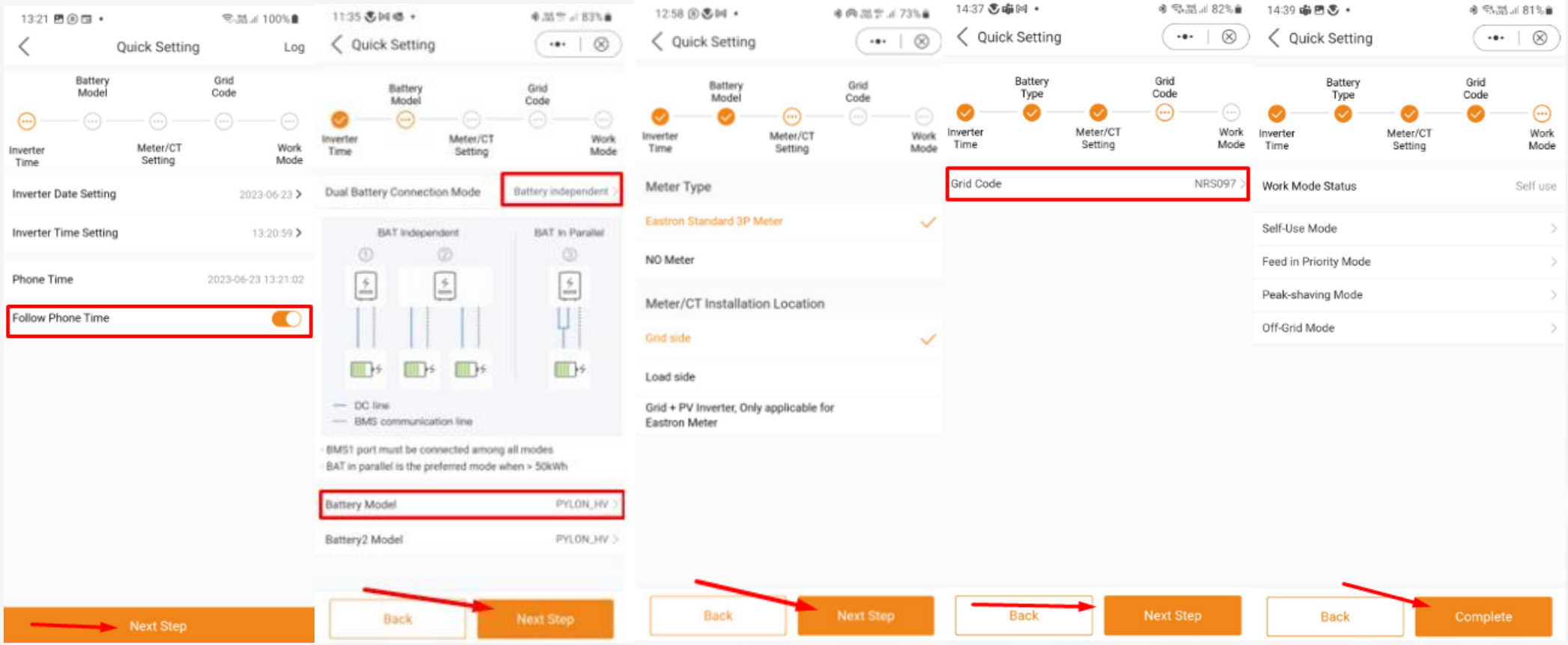
Step 2: Select the Bluetooth signal from the inverter. (Bluetooth Name: Inverter SN)

Step 3: Login account. If you are the installer, please select the account type as Installer. If you are the plant owner, please select the account type as owner. Then set your own initial password for control verification. (The first log-in must be finished by installer in order to do the initial set up)



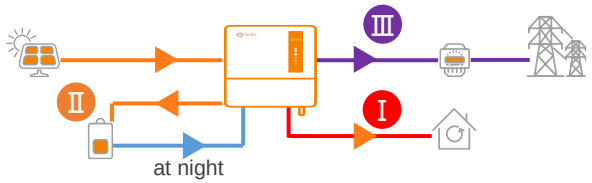
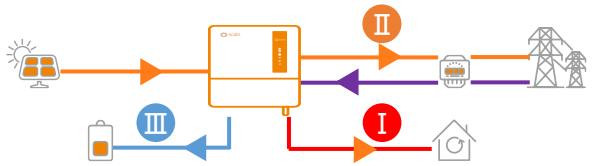
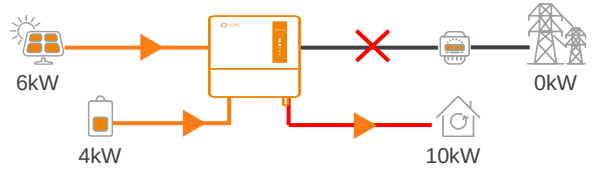
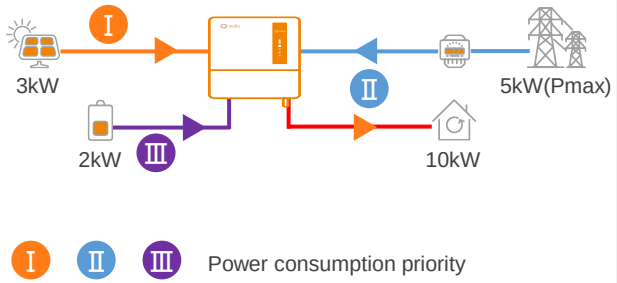
NOTE: If you are creating a password as an installer, keep this password Generic throughout your company.

Introduction to APP - Quick Settings



If this is the first time the inverter has been commissioned, you will need to first go through the Quick Settings. Once this has been done, these settings can be changed later， If there are other special requirements, such as Generator set up or AC Coupling you need to check Solischeck APP for further Settings

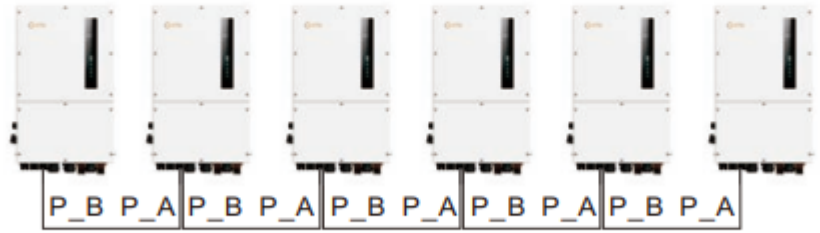
Work Modes

	Working mode	Working logic	Usage
	**Self of use**	Load priority: load>battery>grid Power supply priority: PVr>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. No Grid available.
	**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_discharge+P_max+PV < P_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.

Parallel Systems Set Up

Parallel Inverter Connection

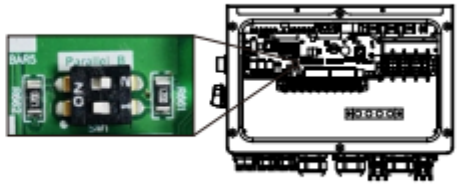
Up to 6 units of the inverter can be connected in parallel.
Please connect the paralleled inverters by using P-A and P-B terminals.
Standard CAT5 with shielding layers internet cable can be used.

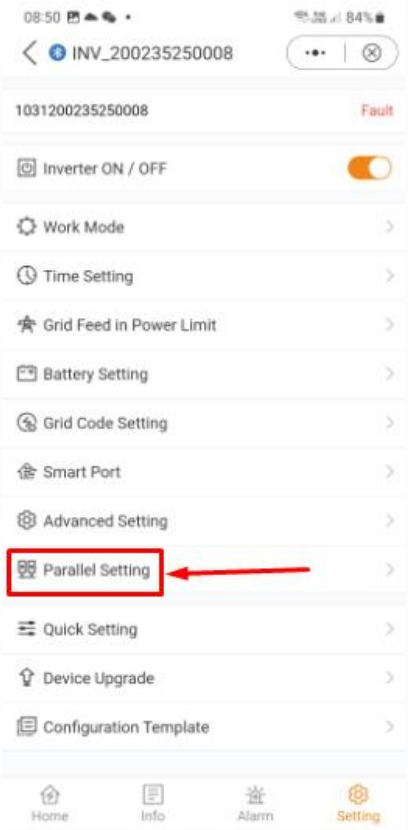


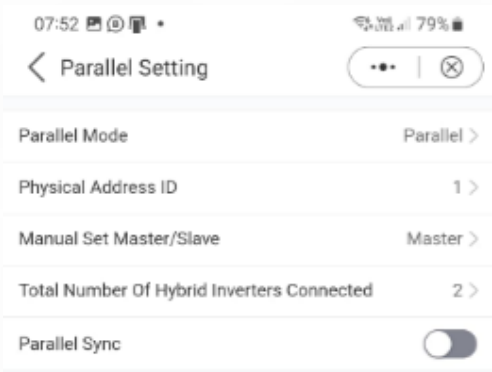
Parallel Terminal Connection

NOTE:

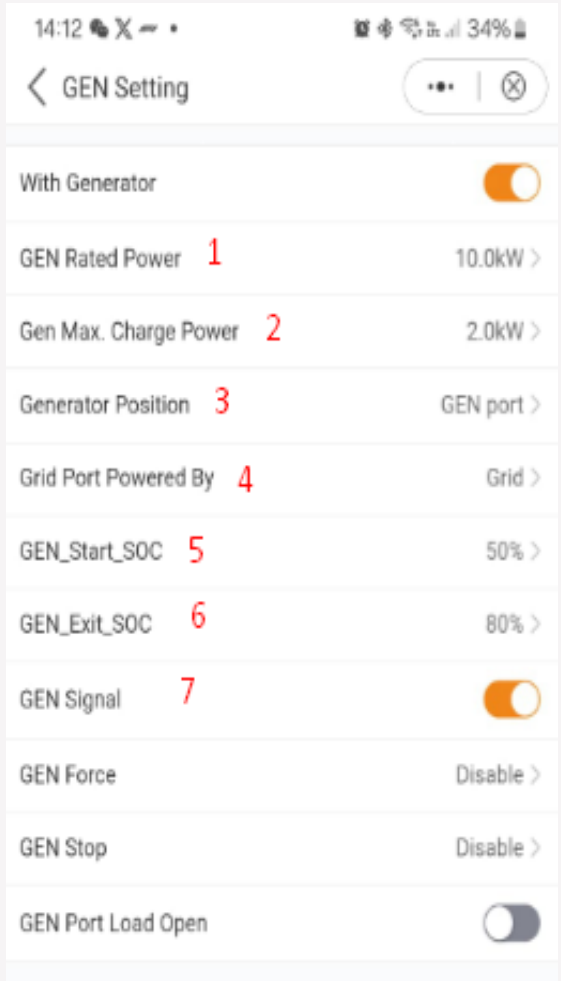
If the parallel machine is connected to the first and last consoles of the parallel connection, you need to put the DIP switch on the ARM board to ON, and the middle machine is all OFF.





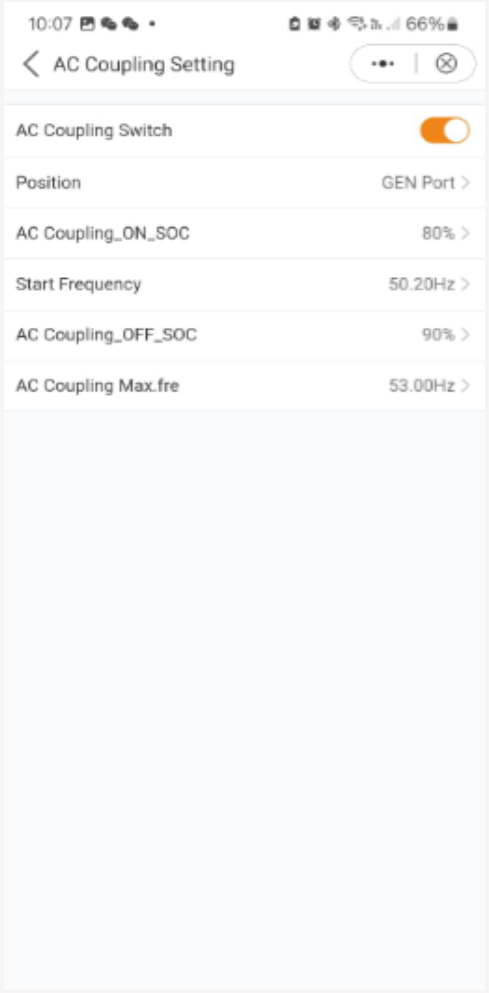


Generator settings



1. Enter the size of the generator that is being used.
2. Select the Max Charge power the Gen can charge the batteries.
3. Here you need to select where the Generator is coupled for example this Gen is coupled on the actual inverters Gen Port.
4. Generally, this setting is left to default “Grid "when connecting the Generator to the GEN Port.
5. You need to set an SOC based on where you want the Gen to start.
6. Set the Exit SOC for the Gen to stop.
7. The Gen Signal needs to be ON if you are using the auto start function.

AC Coupling Settings

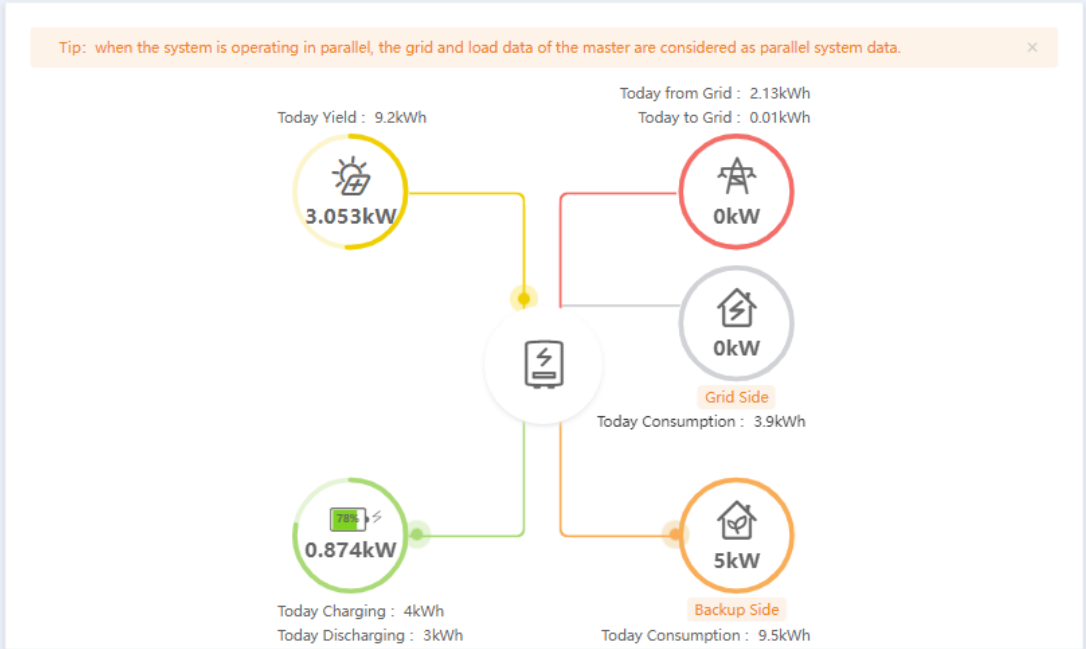


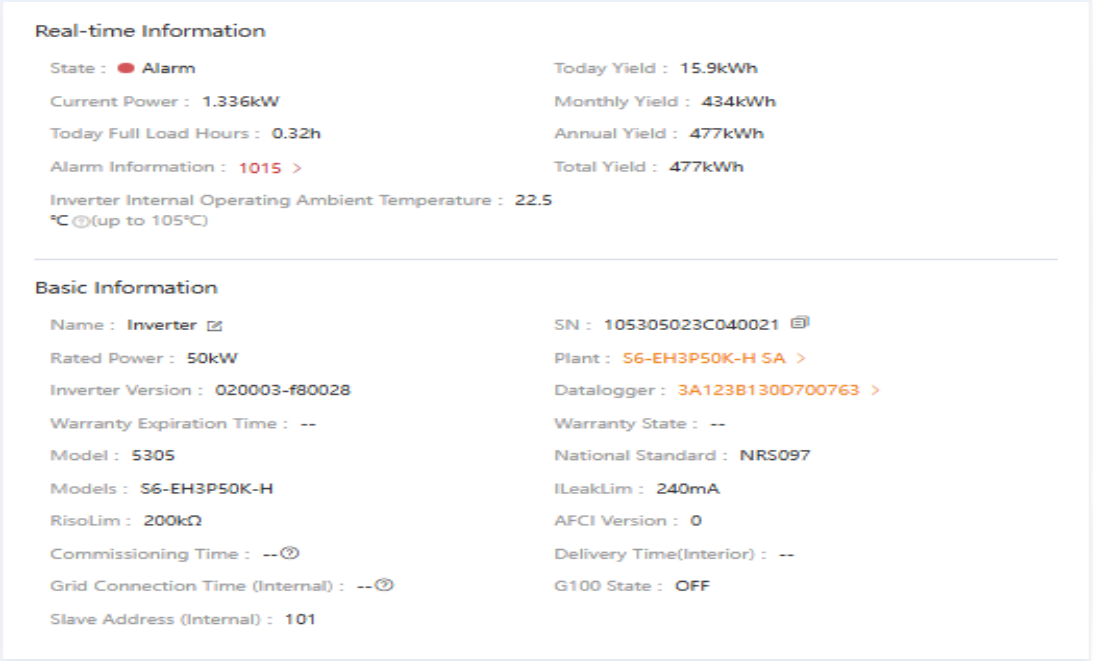
Parameter Settings

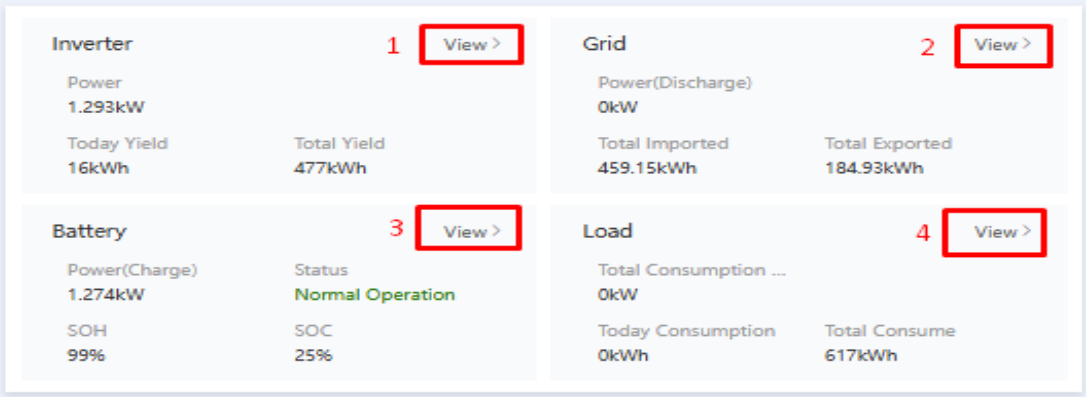
1. AC Coupling switch must be turned on.
2. Two positions for connecting the grid-tied inverter as possible depending on whether a generator is used or not.
   a. Gen Port: Set the Gen Port position if the grid-tied inverter is installed on the inverter's generator port.
   b. Backup Port: Set the Backup position when the grid-tied inverter is coupled to the inverter's backup output.
3. AC Coupling OFF SOC must be set to the required percentage.
4. AC Coupling Max value is the Stop value of 52.7Hz set on the battery inverter and must be set the same on the AC PV inverter.
   Example: Start 51Hz and Stop 52.7Hz
5. The "GEN Port load open switch" must also be switched on and can be found in Smart port setting under GEN settings.

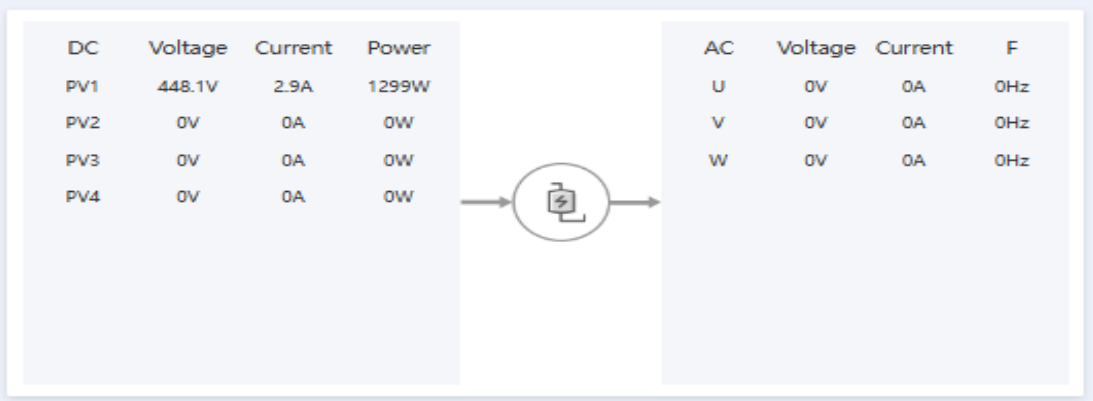
Solis Cloud Platform App

Solis Cloud platform - inverter information display









Solis Cloud Platform App

Solis Cloud platform – Inverter Information

Inverter Information

1

Last Update: Within 1 Min

Self-Use Mode	ON
Time of Use Mode	OFF
Off-Grid Mode	OFF
Battery Wakeup	OFF
Reserve Battery Mode	ON
Allow Grid Charging	Disable
Feed in Priority Mode	OFF
DC Bus Voltage	751V
DC Bus Half Voltage	376.5V
Backup Setting	Enable
Backup Voltage Setting	230V
Backup Frequency Setting	50Hz
EPM Back-flow Power	0kW
EPM Switch	ON
FailSafe Switch	OFF
EPM Real-time Back-flow Power	0W
Off-grid Mode DOD	0%
EPS DOD	19%
EPS Switching Time	2000ms
DC-AC/Rectified Power	0W
Variable Data 1	0
Variable Data 2	0
Variable Data 11	0
GEN Information	›

OFF

Grid Information

2

Total Power	0kW
State Grid	--
Meter Type	Eastron Standard 3P Meter
Meter Location	Grid Side

	Today	This Month	This Year	Total
Energy I...	0kWh	329.18k...	459.15k...	459.15k...
Energy E...	0kWh	151.87k...	184.93k...	184.93k...

	U	V	W	Total
Voltage	232.9V	238.2V	236.9V	-
Current	0A	0A	0A	-
Active P...	0W	0W	0W	0kW
Reactive...	0Var	0Var	0Var	0Var
Apparen...	0VA	0VA	0VA	0VA
Power F...	1			

OFF

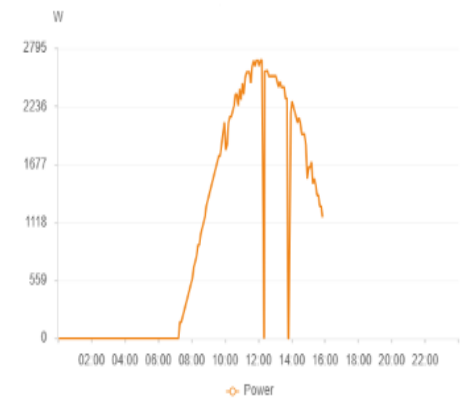
Battery information

3

From Inverter | From BMS

Battery Status	Normal Operation
Battery Model	PYLON_HV
Battery Power	1167.76W
Battery Voltage	530.8V
Battery Current	2.2A

Power | Current | Voltage | 31/05/2024



	Battery Charge	Battery Discharge
Today	13kWh	0kWh
This Month	440kWh	300kWh
This Year	557kWh	351kWh

OFF

Load Information

4

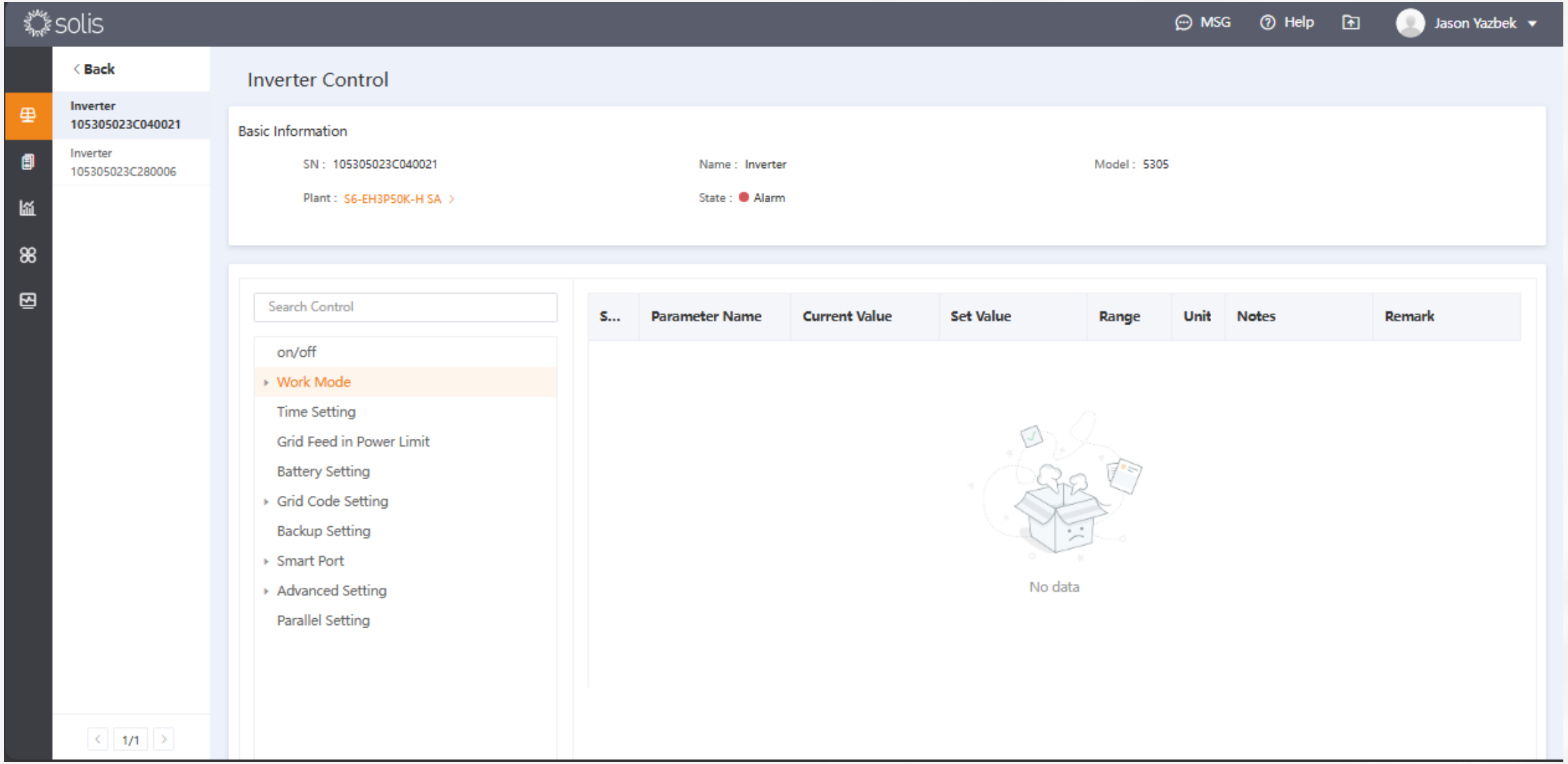
Last Update: Within 1 Min

Total Consumption Power	0kW
Grid Load Power	0kW
Backup Load Power	0kW
Today Consumption	0kWh
Today Grid Load Consumption	0kWh
Today Backup Load Consumption	0kWh
Total Consume	617kWh
Total Grid Load Consumption	250kWh
Total Backup Load Consumption	391kWh
Backup Active Power A	10W
Backup Reactive Power A	0Var
Backup Apparent Power A	30VA
Backup Active Power B	10W
Backup Reactive Power B	0Var
Backup Apparent Power B	10VA
Backup Active Power C	10W
Backup Reactive Power C	0Var
Backup Apparent Power C	20VA
Backup AC Voltage	232.9V
Backup AC Current	0A
Backup AC Voltage B	231V
Backup AC Current B	0A
Backup AC Voltage C	232.8V
Backup AC Current C	0A

OFF

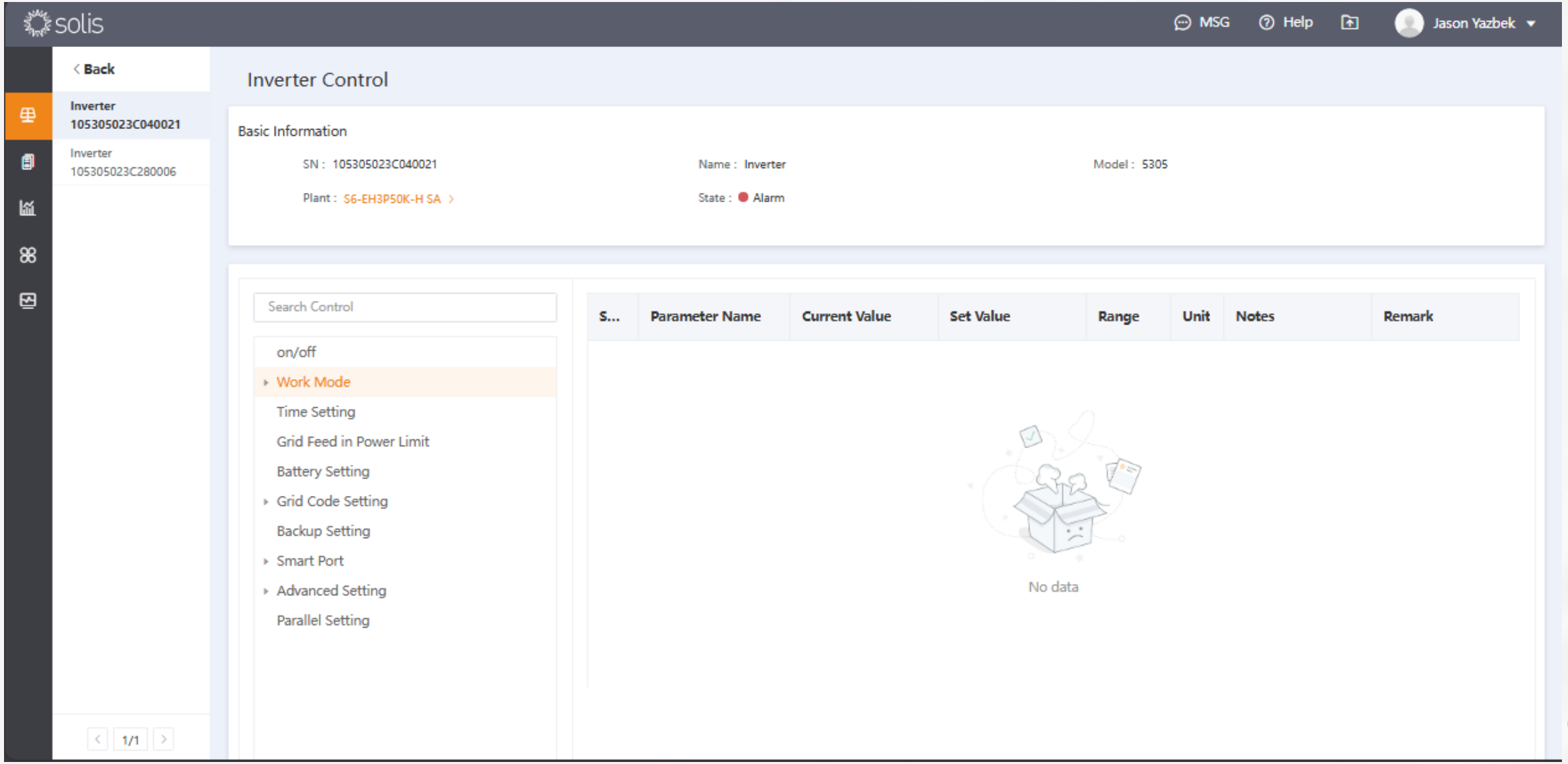
Solis Cloud Platform App

Solis Cloud platform - Inverter Control



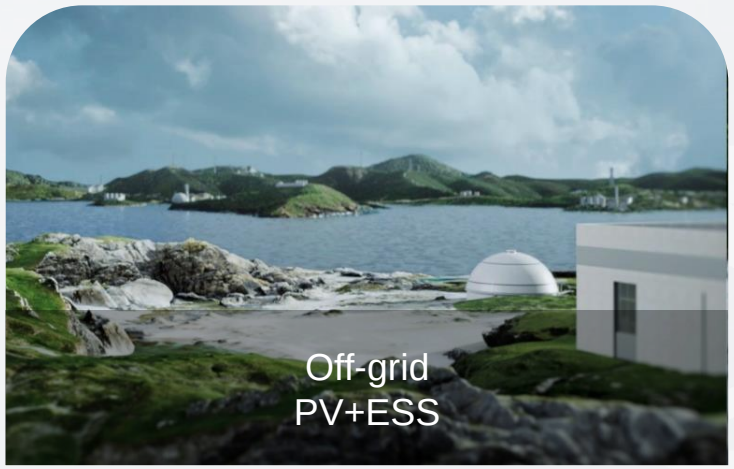
Solis Cloud Platform App

Solis Cloud platform - Inverter Control

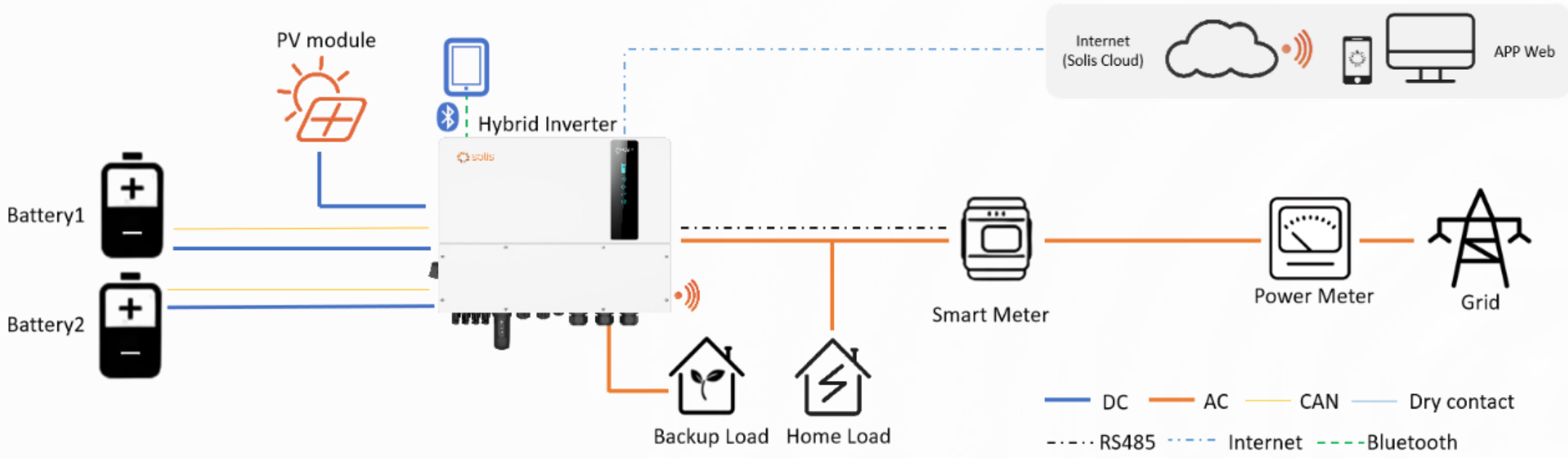


06 Application Scenarios

Suitable for to public buildings/hospitals/factories/islands…

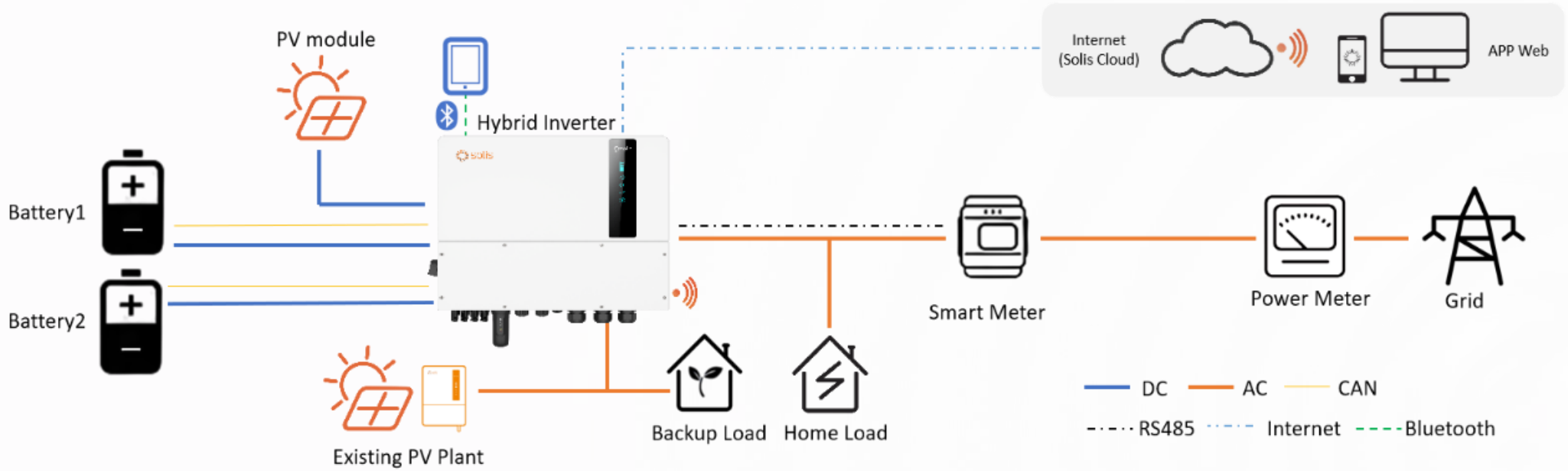


On-grid Scenario : PV+ESS （30KW~50KW/0~100KWh）



Retrofitting Scenario : PV+Existing PV Plant+ESS

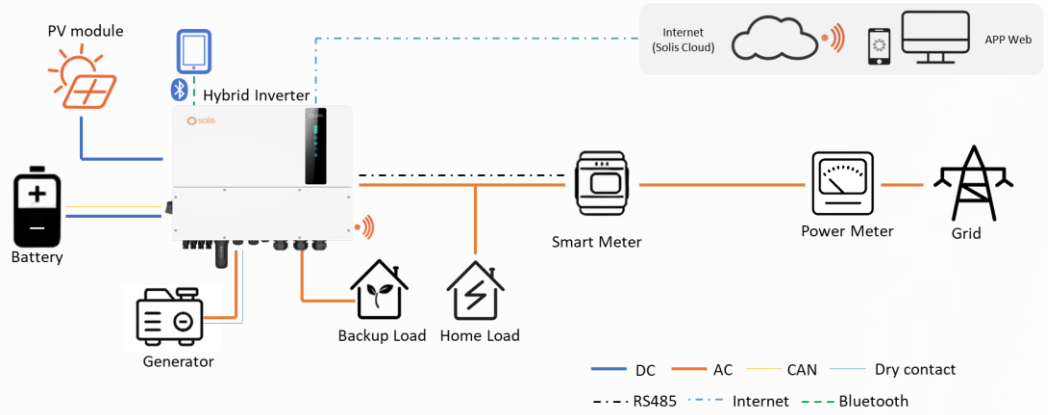
Intelligent AC coupling Function, easily upgrade existing PV plant.



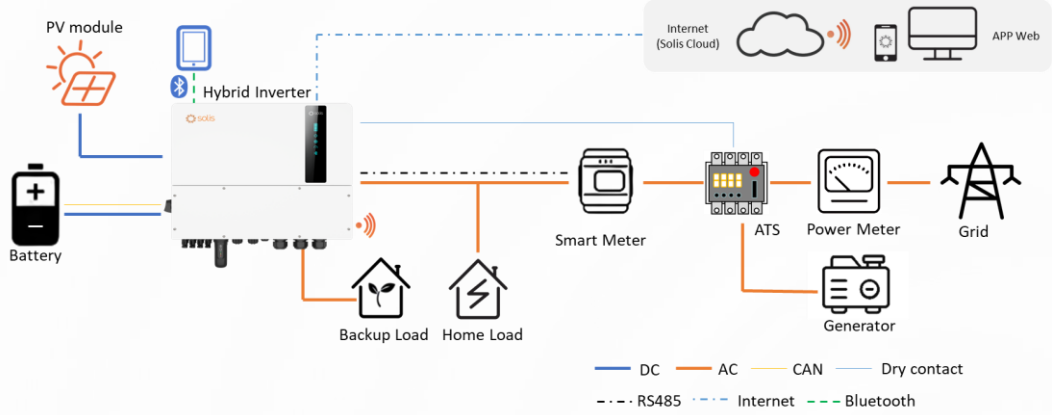
- With existing PV Plant connected to the system it is recommended that : Grid-tied inverter power < rated AC power of S6 inverter ;

Scenario with Genset：PV+ESS+DG（weak-grid)

Generator on Gen port side



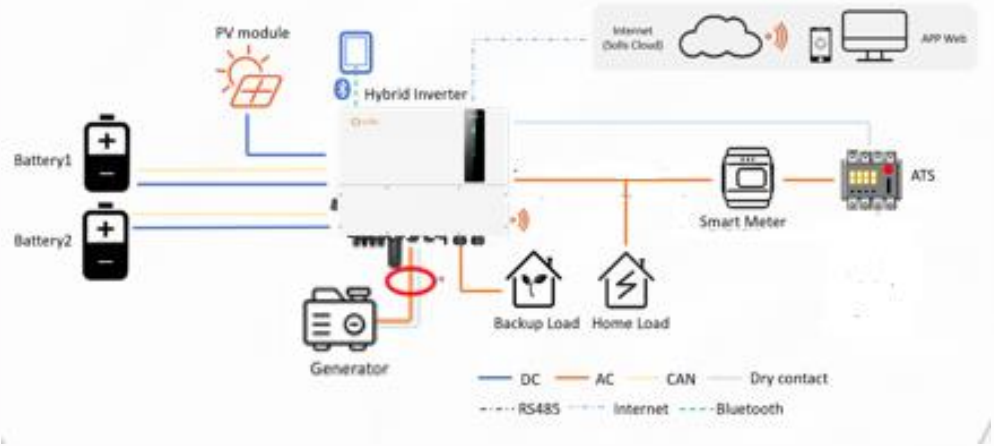
Generator on Grid side



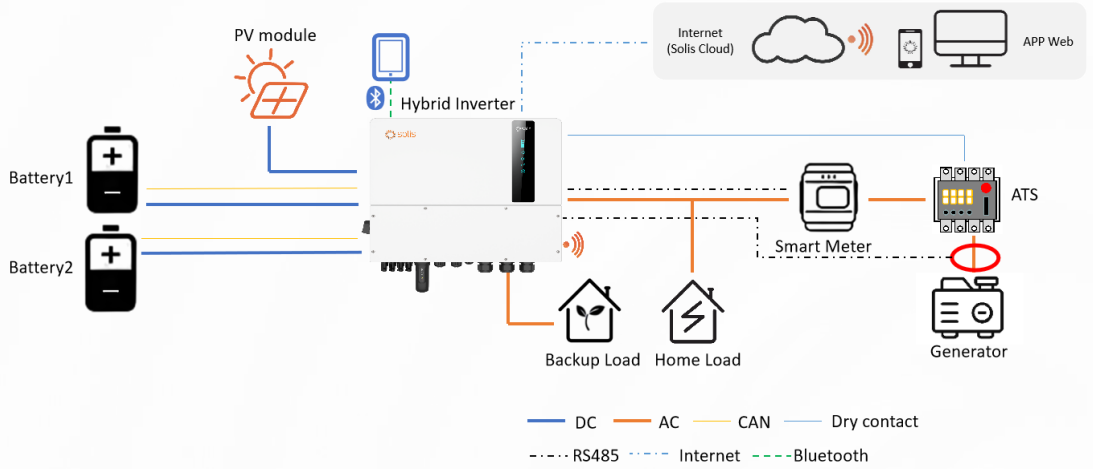
- Diesel Generator can be connected via both AC-Gen port or ATS.
- When the generator is connected to the system, it is necessary to correctly select the location of the generator on the APP to avoid system failure or generator damage ;

Off-grid Single Scenario： PV+ESS+DG

Generator on Gen port side

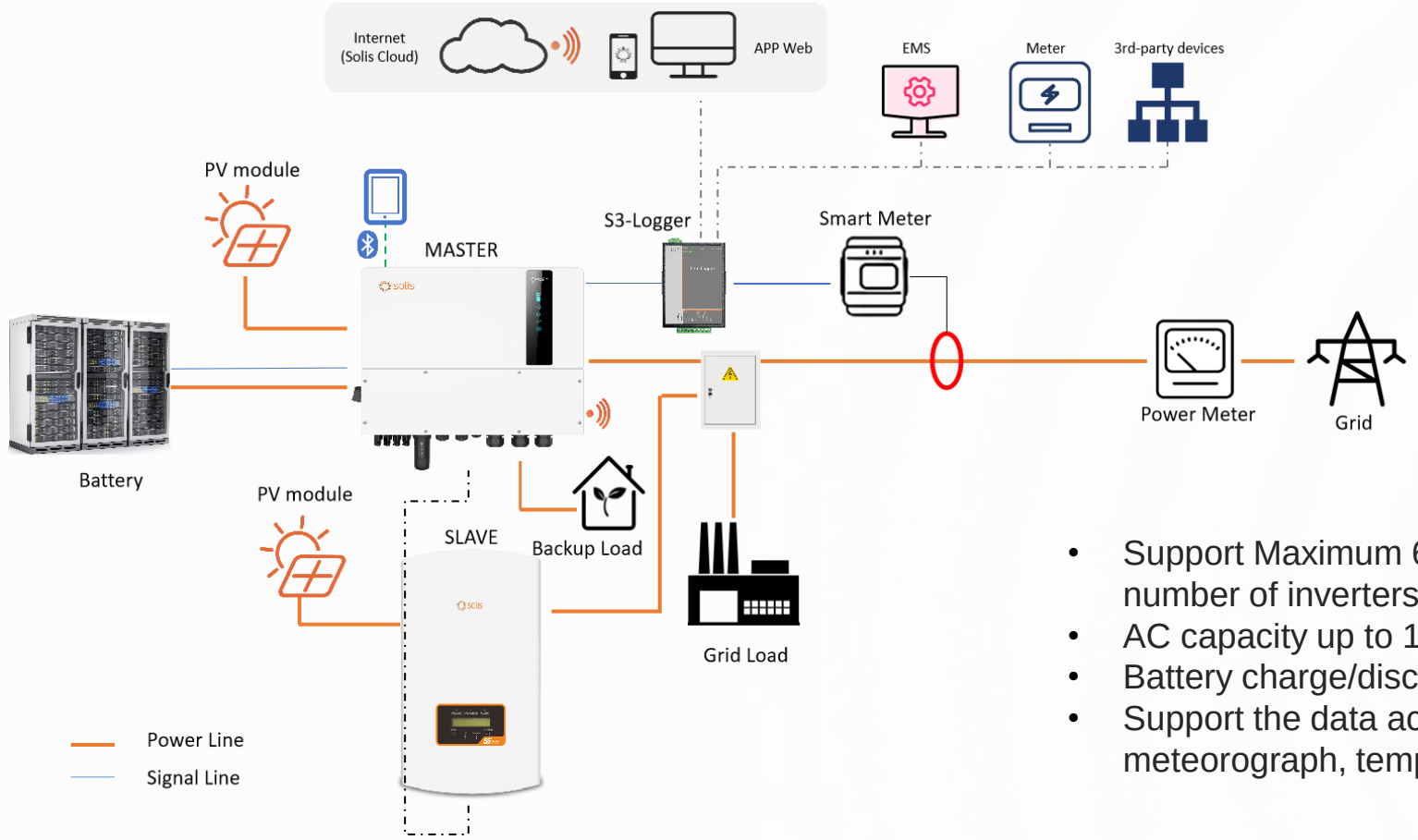


Generator on Grid side



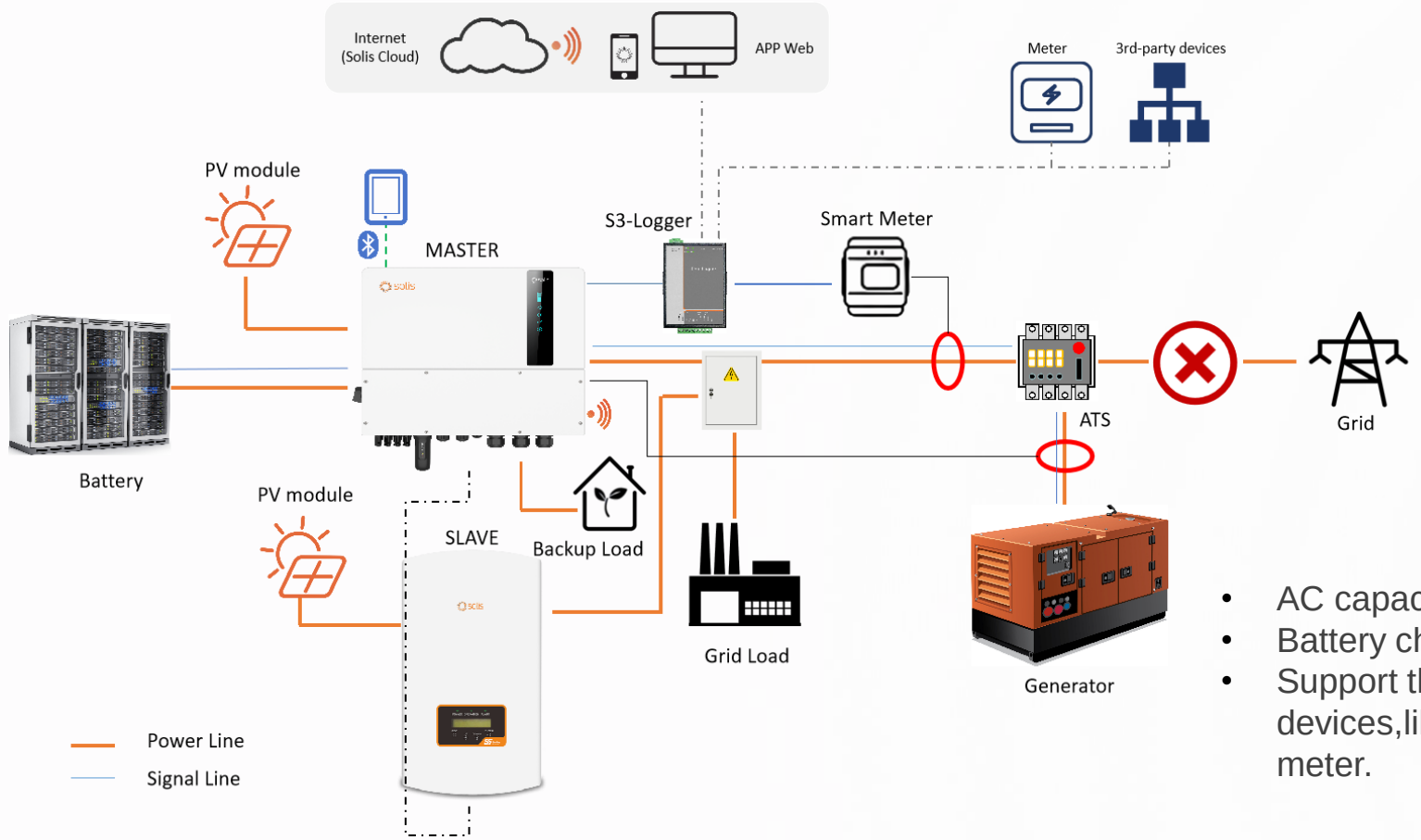
- Off-grid scenario applications do not require access to CT or meter；
- When the generator is connected to the system, it is necessary to correctly select the location of the generator in the APP to avoid system failure or generator damage ;
- In off-grid scenario,If the generator is conneted via AC-Gen port, it will only supply power to the Backup load ; if it is necessary to supply power to the grid side, it is recommended that the generator be connected through ATS ;

Parallel system for C&I Scenario (30KW~1MW/0~600KWh)



- Support Maximum 6 hybrid inverter in parallel, the total number of inverters does not exceed 60.
- AC capacity up to 1MW.
- Battery charge/discharge power up to 300KW.
- Support the data access of third-party devices,like meteorograph, temperature sensor, meter.

Off-grid Parallel Scenario with Generator (30KW~1MW/0~600KWh)



- AC capacity up to 1MW.
- Battery charge/discharge power up to 300KW.
- Support the data access of third-party devices,like meteorograph, temperature sensor, meter.

07

Solis service

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

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

Canada, USA, Mexico, Brazil, Chile

South Africa, Australia

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

Solis' Nationwide Fast Response After-Sales Service

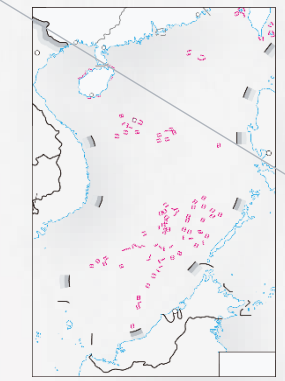
Customer Hotline: 400-101-6600

11 Service Centers

Ningbo, Northeast, Ludong, Luxi, North China, Central China, East China, South China, Jianghu, Northwest, Hangzhou Bay

40 Service Points

Ningbo, Jining, Dezhou, Weifang, Linyi, Yantai, Laiwu, Pingyin, Shenyang, Harbin, Cangzhou, Tangshan, Baoding, Xingtai, Shenzhou, Zhengzhou, Hebi, Luoyang, Taiyuan, Zhumadian, Xi'an, Zhongwei, Yancheng, Changzhou, Hai'an, Kunshan, Hefei, Bozhou, Ganzhou, Wuhan, Zhuzhou, Dongguan, Quanzhou, Nanping, Longyou, Jiaxing, Wenling, Cixi, Hainan, Hangzhou Bay



Global HQ

Ningbo

The first inverter enterprise to pass the twelve-star after-sales service system certification.

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

Solis After-sales Services

Fast speed

Provide warranty stock to customers which will be replaced by customers

Customers first send their stock for replacement, then Solis will send new inverters to the customers

Solis local after-sales warehouse sends replacement inverter

High utilization rete of overseas standby machine

Solis on-site maintenance and processing

Low overall service cost

solis

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.

Ginlong Technologies Co.,Ltd

Website: https://www.solisinverters.com/za

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South Africa Adress: 1487 Seilskip road, Laserpark, Hioneydew,

Roodepoort, Gauteng

South Africa Technical Contact details

Service email: saservice@solisinverters.com

Technical Documents Share

Thank you!

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