User Manual

Commercial Energy Storage
Three Phase High Voltage
Hybrid Inverter

Applicable Models:
S6-EH3P60K10-LV-YD-H-US
S6-EH3P75K10-LV-YD-H-US
S6-EH3P100K10-NV-YD-H-US
S6-EH3P125K10-NV-YD-H-US
S6-EH3P150K10-NV-YD-H-US

Version 1.1 Release Date: 2026/05/06

Important Notes

- Product specifications are subject to change without notice. Every attempt has been made to make this document complete, accurate and up-to-date. Individuals reviewing this document and installers or service personnel are cautioned, however, that Solis reserves the right to make changes without notice and shall not be responsible for any damages, including indirect, incidental or consequential damages caused by reliance on the material presented including, but not limited to, omissions, typographical errors, arithmetical errors or listing errors in the material provided in this document.

- Solis accepts no liability for customers' failure to comply with the instructions for correct installation and will not be held responsible for upstream or downstream systems Solis equipment has supplied.

- The customer is fully liable for any modifications made to the system; therefore, any hardware or software modification, manipulation, or alteration not expressly approved by the manufacturer shall result in the immediate cancellation of the warranty.

- Given the countless possible system configurations and installation environments, it is essential to verify adherence to the following:
  - There is sufficient space suitable for housing the equipment.
  - Airborne noise produced depending on the environment.
  - Potential flammability hazards.

- Solis will not be held liable for defects or malfunctions arising from:
  - Improper use of the equipment.
  - Deterioration resulting from transportation or particular environmental conditions.
  - Performing maintenance incorrectly or not at all.
  - Tampering or unsafe repairs.
  - Use or installation by unqualified persons.

- This product contains lethal voltages and should be installed by qualified electrical or service personnel having experience with lethal voltages.

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1. Introduction

1.1 Inverter Description

This Solis hybrid inverter series is designed for commercial solar plus energy storage applications where the power grid is 480V, 240V, 220V or 208V three phase.
The inverter is able to maximize self-consumption while also providing backup power whenever grid power is lost. It can also utilize peak-shaving and time charging modes. The inverter is able to connect directly to a generator as well. The Solis S6 series consists of the following inverter models: 100kW,125kW,150kW, 60kW-LV and 75kW-LV (LV = “Low Voltage” 240V, 220V or 208V)

Figure 1.1 Frontal View

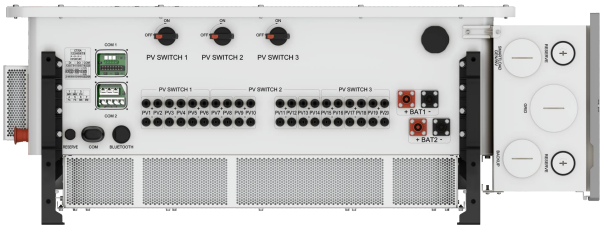


Figure 1.2 Bottom View (Wire Box)

1. Introduction

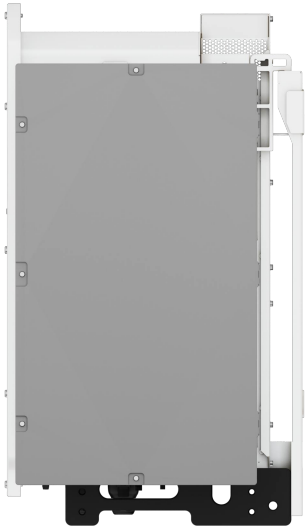


Figure 1.3 Right Side View

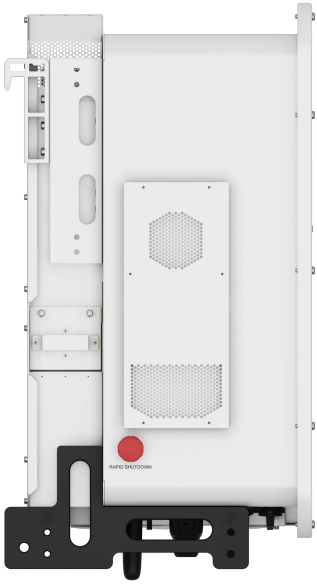


Figure 1.4 Left Side View

1. Introduction

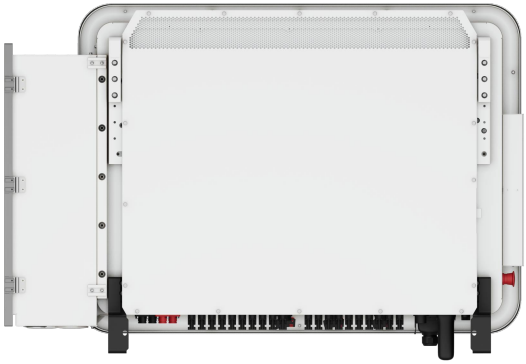


Figure 1.5 Back View

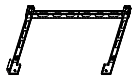
Figure 1.6 Top View

1. Introduction

1.2 Components Included with the Inverter

If any of these items are missing, please contact your local Solis distributor or the Solis service team.

Inverter x1


Back plate x1

Hex Head Bolt Assembly M10*40 x4

Flat Washer Φ10 (C Grade Flat Washer) x4

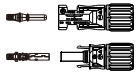
Hex Nut M10 x4

Philips Cross Recess Hex Head Bolt Assembly M10*20 x8

Expansion Bolt M10*70 x4

Phillips recess hex head combination screw M8*20 x2

RJ45 connector x10

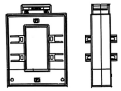

DC connector x20

Battery Quick-Connect Terminal Unlock Tool x1

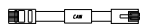
Battery quick-connect terminal (Black) x2

Battery quick-connect terminal (Orange) x2

Handle x4

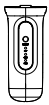

CT x3

CT cables x1



Dual RJ45 Plug Shielded Cable Harness - 5000mm x1

Eastron Meter x1


S2-WL-ST Data logger x1

PV Terminal Unlock Tool x1

Manual x1

NOTE

The CT cable lengths are 5 meters (16.4 ft.) and they cannot be extended.
If the installation requires an extension, an external meter must be installed.

1.3 Tools Required for Inverter Installation

Technician Screwdriver

Torqx T20 Screwdriver

Wire Strippers 12AWG to 6AWG

Wire Strippers 20AWG to 10AWG

LUG Crimping Tool

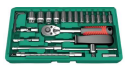
Channel Locks

Multimeter (AC/DC amps)

Drill and Impact Driver

Torque Screwdriver

MC4 Crimping Tool


Socket/Bolt Wrench Tool

hex key: 4mm

1. Introduction

1.4 Inverter Storage

- If the inverter is not installed immediately, please abide by the storage instructions and environmental conditions listed below.
- Use the original box to repackage the inverter, seal with adhesive tape with the desiccant inside the box.
- Store the inverter in a clean and dry place, free of dust and dirt. The storage temperature must be between -22~158°F and humidity should be between 0 to 100%, non-condensing.
- Do not stack more than two (2) inverters high on a single pallet. Do not stack more than 2 pallets high.
- Keep the box(es) away from corrosive materials to avoid damage to the inverter enclosure.
- Inspect the packaging regularly. If packaging is damaged (wet, pest damages, etc.), repackage the inverter immediately.
- Store inverters on a flat, hard surface -- not inclined or upside down.
- Do not remove the desiccant packet that is included with the inverter. It is included to ensure that any residual moisture is absorbed quickly.
- Restarting after a long period of non-use requires the equipment be inspected and, in some cases, the removal of oxidation and dust that has settled inside the equipment will be required.
- Perform an annual visual inspection of the inverter box for signs of damage
- If the inverter has been removed from the box and then replaced, put desiccant packets in the inverter wire box to ensure the internal components stay dry
- Do not store the inverter outside or in a place that does not have environmental controls.

DO NOT STACK
MORE THAN 2 HIGH

2. Safety & Warning

2.1 Safety

The following types of safety instructions and general information appear in this document as described below:

DANGER
"Danger" indicates a hazardous situation which if not avoided, will result in death or serious injury.

WARNING
"Warning" indicates a hazardous situation which if not avoided, could result in death or serious injury.

CAUTION
"Caution" indicates a hazardous situation which if not avoided, could result in minor or moderate injury.

NOTE
"Note" provides tips that are valuable for the optimal operation of your product.

WARNING: Risk of fire
Despite careful construction, electrical devices can cause fires.
- Do not install the inverter in an area containing flammable materials or gases.
- Do not install the inverter in a potentially explosive atmosphere.

2.2 General Safety Instructions

WARNING
Only devices in compliance with SELV (EN 69050) may be connected to the RS485 and USB interfaces.

WARNING
Do not connect PV array positive (+) or negative (-) to ground, doing so could cause serious damage to the inverter.

WARNING
Electrical installations must be done in accordance with local and national electrical safety standards.

WARNING
Do not touch any internal parts until 5 minutes after disconnection from the utility grid, PV array, and battery.

2. Safety & Warning

WARNING

To reduce the risk of fire, over-current protective devices (OCPD) are required for all circuits connected to the inverter.
The DC OCPD shall be installed per local requirements. All photovoltaic source and output circuit conductors shall have isolators that comply with the NEC Article 690, Part II.
All Solis three phase inverters feature an integrated DC disconnect switch.

CAUTION

Risk of electric shock, do not remove the cover. There are no serviceable parts inside, refer servicing to qualified and accredited service technicians.

CAUTION

The PV conductors are energized with high voltage DC when the PV modules are exposed to sunlight.

CAUTION

The surface temperature of the inverter can reach up to 75℃ (167°F). To avoid risk of burns, do not touch the surface of the inverter while it is operating. The inverter must be installed out of direct sunlight exposure.

NOTE

PV modules used with inverter must have an IEC 61730 Class A rating.

WARNING

Operations must be accomplished by a licensed electrician or a person authorized by Solis.

WARNING

Installer must wear personal protective equipment during the entire installation process in case of electrical hazards.

WARNING

The AC Backup Port of the inverter cannot be connected to the grid.

WARNING

Please refer to the product manual of the battery before installation and configuration to the inverter.

Systems using this product shall be designed and built in accordance with the NEC & local electrical codes & standards.

2. Safety & Warning

2.3 Notice for Use

The inverter has been constructed according to the applicable safety and technical guidelines. Use the inverter in installations that meet the following specifications only:

1. Permanent installation is required.

2. The electrical installation must be compliant with all local and national regulations & standards.

3. The inverter must be installed according to the instructions stated in this manual.

4. The inverter must be installed according to the inverter technical specifications.

2.4 Notice for Disposal

This product shall not be disposed of with household waste. It must be segregated and brought to an appropriate disposal facility to ensure proper recycling.

This it to be done in order to avoid negative impacts on the environment and human health. The inverter contains materials that should not end up in a landfill.

Local waste management rules shall be observed and respected.

2.5 Protection Circuitry and Controls

To meet relevant codes and standards, the Solis U.S. three phase inverter line is equipped with protective circuitry and controls. These include Arc Fault Circuit Interrupter (AFCI) & Anti-Islanding Protection.

Arc Fault Circuit Interrupter AFCI:

Edition 2011 of the National Electrical Code®, Section 690.11, requires that all PV plants attached to a building are fitted with a means of detecting and interrupting serial electric arcs in the PV wiring and array. An electric arc with a power of 300W or greater must be interrupted by the AFCI in the time specified by UL 1699B. After five arc fault detections in 24 hours, an AFCI-induced shutdown will be triggered. If this event occurs, the inverter must be manually reset. After clearing the source of the fault, the inverter can be powered back on and allowed to resume normal operation.

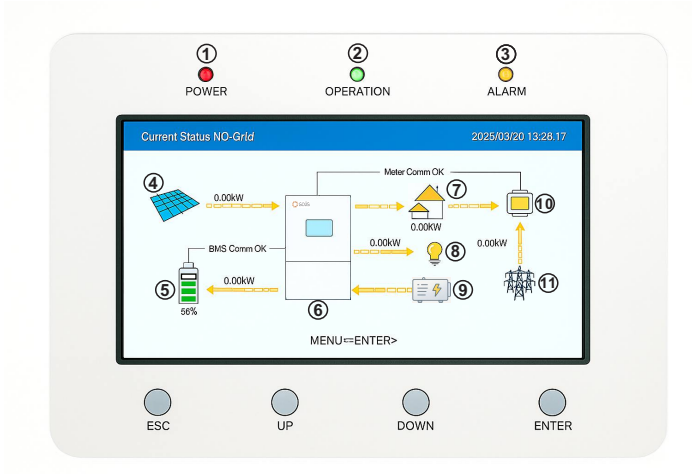
Anti-Islanding Protection:

Anti-Islanding is a condition where the inverter cease to produce power when the grid is not present. Circuitry, along with firmware, has been designed to determine if the grid is present by adjusting the output frequency of the inverter. In the case of a 60Hz resonant system where the inverter is partially isolated from the grid, the inverter programming can detect if there is a resonant condition or if the grid is actually present. It can also differentiate between inverters operating in parallel and the grid.

NOTE:
All Solis inverters come with AFCI and Anti-Islanding protections integrated and enabled by default. The settings cannot be disabled or modified.

3. Overview

3.1 LCD Display Screen and Indicator Lights



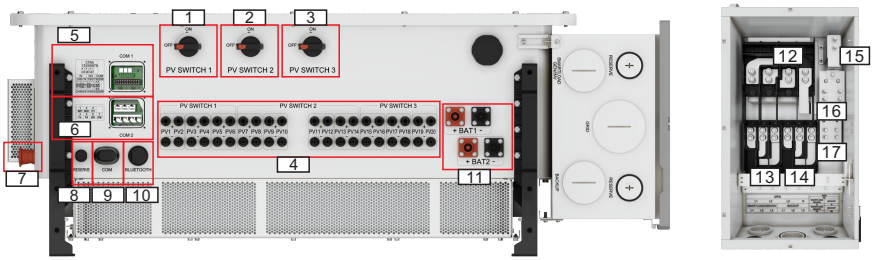
#	Name	Description
1	Power LED	This LED is always red when the inverter has adequate AC or DC voltage. This LED does not indicate any problems.
2	Operation LED	This LED is always green when the inverter is operating normally and producing AC power.
3	Alarm LED	This LED is will light up yellow any time the inverter has an alarm code.
4	PV Icon	Represents PV power being generated in DC kW.
5	Battery Icon	Represents the battery connected to the inverter charging and discharging in DC kW and state-of-charge (SOC)
6	Inverter Icon	Represents the Solis hybrid inverter in the system.
7	Load Icon	Represents the grid-side building load consumption & power being exported to or imported from the grid in AC kW.
8	Backup Icon	Represents backup load consumption on the backup-side of the system in AC kW.
9	Generator Icon	Represents generator power being produced in AC kW.
10	Meter/CT Icon	Represents the energy meter monitoring the consumption power & import/export power to/from the grid in AC kW.
11	Grid Icon	Represents the grid and power being imported from/exported to the utility (grid) in AC kW.

NOTE:

The screen will turn off after a few minutes to conserve energy. Press any button to wake the screen up. Press the Enter button to access the main menu.

3. Overview

3.2 Inverter Wire Box and Connection Points



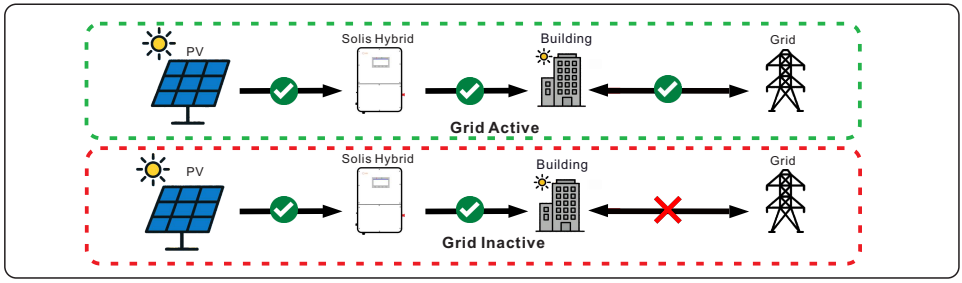
Name	Description
1. PV Switch1	PV switch of the PV1- PV6
2. PV Switch2	PV switch of the PV7- PV14
3. PV Switch3	PV switch of the PV15- PV20
4. PV Module Input	Conduit of PV conductors should be connected here
5. COM1	Communication cables of terminal block should go through this port
6. COM2	Communication cables of terminal block should go through this port
7. RSD	Disables the internal rapid shutdown (RSD) transmitter, initiating rapid shutdown. Engaging this switch disables all AC output from the inverter. Does not turn off battery.
8. RESERVE	Reserved port
9. COM	For Solis data logger connection
10. BlueTooth	A antenna for Bluetooth signal.no need operation
11. Battery Connection	Conduit of Battery conductors should be connected here
12. Grid	AC conductors to the main service panel should be connected here
13. Smart Port	AC conductors to a generator, AC-coupled PV system, or sheddable load connect here
14. Backup	AC conductors to backup loads panel should be connected here
15. Grid PE	Common bus bar for the grid ground conductors to terminate
16. AC Neutral Bus Bar	Common bus bar for all AC ground conductors to terminate
17. AC Ground Bus Bar	Common bus bar for all AC ground conductors to terminate

4. Operating Modes

4.1 PV-Only

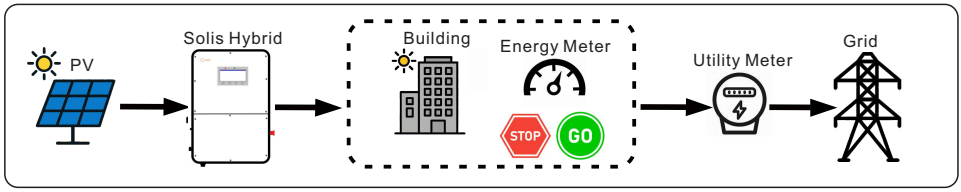
4.1.1 Grid-Tie PV String Inverter

This inverter can be as a PV-only grid-tied string inverter. Only the PV/backup/ grid ports would be utilized. The inverter does have a feature allowing it to provide backup power with only PV. However,under PV-only load conditions, we do not support overload. This feature is great for short-duration (1-2) hour outages during the day with load consumption kept low. Batteries can always be added in the future, keeping the initial installation cost low. Overload faults occurrences and recover times are as follows: First - 30 seconds, Second - 3 minutes, Third, Fourth, Fifth - 10 minutes, Sixth - hard reset is required, no automatic recovery.



4.1.2 Export Power Control

The inverter offers the ability to manage export power. During the system commissioning process, export power control can be enabled. An export power limitation can then be set to the desired kW value. The inverter will then regulate how much power gets sold back to the utility company.



Each Solis hybrid comes with an energy meter, which gets installed externally to the inverter. The energy meter uses three CTs for three-phase, which measure the power being consumed and imported by the building. The hybrid uses the data from this meter to determine whether or not it needs to curtail the PV power to meet the export power limitation. Export power control can be enabled with or without a battery being installed.

Zero-Net Export

The inverter can be set to not export any active power to the utility. This does not end up being zero exportas there is some power that leaks back to the utility each time there is a change in load demand. However, the *net import/export* will be near zero kWh each day when programmed for zero export.

NOTE:

The exported power cannot be kept to exactly zero. Solis export power control function is based on the measurements taken by the provided CTs or an external energy meter. Due to the sampling interval limitation, when there are sudden changes in load consumption small amounts of power will be exported. For stricter zero export applications, it is recommended to install an external backflow trip device. Solis does not sell this device.

4. Operating Modes

4.2 Energy Storage

4.2.1 Overview of Energy Storage Modes

The S6 hybrid is capable of providing AC power to loads using PV and battery power in the event of a grid failure. This is known as ***backup power***. The amount of backup power that each S6 hybrid model can provide is equal to the amount of on-grid power that it can provide. For example, an 60K model can provide up to 60kW of continuous backup power.

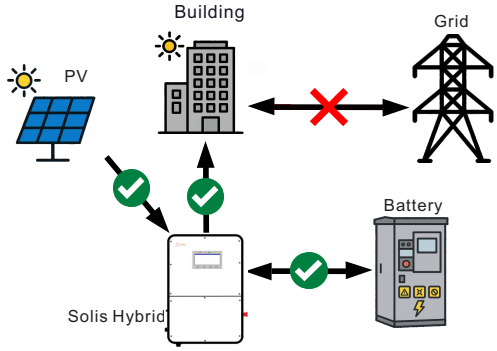


Figure 4.1 Backup power with Solis S6 hybrid

If the primary purpose of the energy storage system is to store as much of the PV power as possible so that it can be used later to offset the consumption of grid power, this is known as energy arbitrage. *Time-of-use*, *self-consumption*, and *peak-shaving* are all examples of ***energy arbitrage***. Typically, the battery will cycle daily as it charges with PV during the day and then discharges in the evening to cover building load demand.

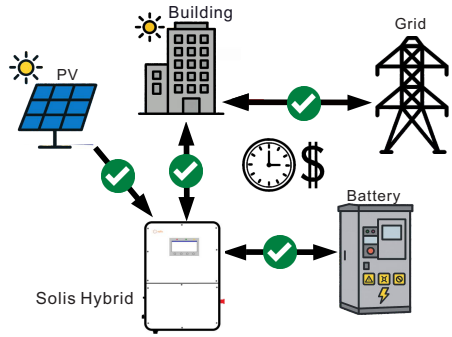


Figure 4.2 Energy arbitrage with Solis S6 hybrid

The S6 hybrid can also operate in an entirely remote system where there is no grid present at all. This is called ***off-grid*** mode. It is very similar to backup in that the inverter will supply AC power to loads with PV and battery power only. However, backup mode is only for grid-connected systems.

NOTE:
The inverter is able to provide off-grid/backup power with only PV and no battery. However, the load consumption must remain less than the available PV power or else an overload fault will occur and the system will shutdown for five minutes.

4. Operating Modes

4.2.2 Energy Arbitrage

The three-phase hybrid inverter has multiple operating modes which can be programmed so that the performance of the system is tailored to the specific needs of each individual system owner.
The backup power function of the inverter can be enabled or disabled independently of the energy arbitrage modes:(1) Self-Use (2) Selling first (3) Off grid (4) Peak-Shaving (Professional Setting)

Self-Use Mode(Self-Consumption)

Self-Use is the default energy storage mode. PV power will always supply the building loads first. Any excess PV power gets stored in the battery. If the battery is fully charged, the remaining power can be exported if the system is configured to allow it. If not, the PV power will be curtailed.

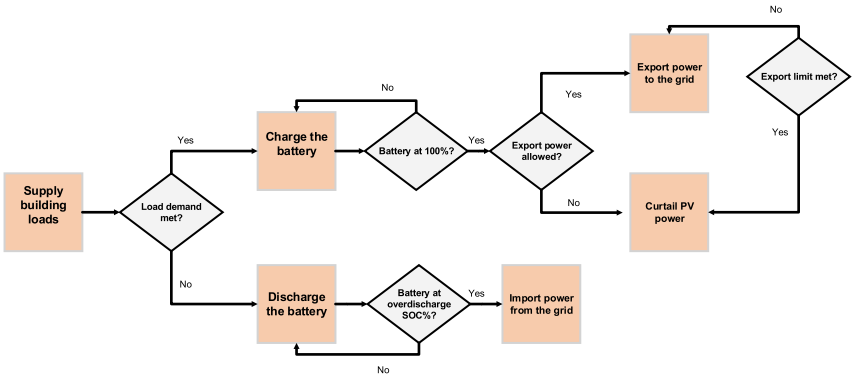


Figure 4.3 Self-Use Mode logic diagram

Selling Fisrt Mode(Export Priority)

This mode can be thought of as export priority mode. The system will first supply the loads with PV power and then it will seek to export the excess PV power, up to the set limit. Once the limit is reached, the remaining power will be stored in the battery. If the battery is fully charged, the PV will at that point be curtailed. This mode is for those who receive an equal rate for power exported or who have a much higher ratio of PV power generated to power consumed.

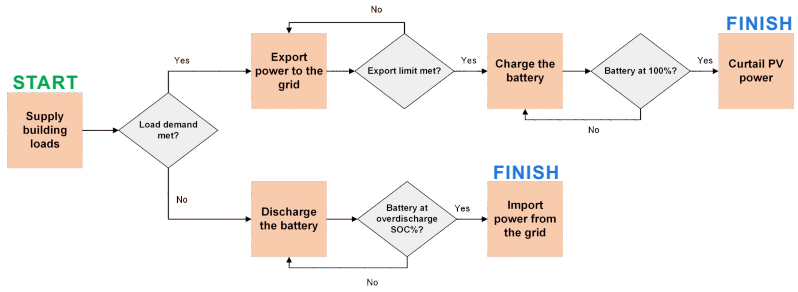


Figure 4.4 Selling first Mode logic diagram

4. Operating Modes

Off-Grid Mode

There is a dedicated mode specifically for 100% off-grid systems which are not electrically connected to the grid at all. This mode should not to be confused with backup mode, which occurs only for grid-tied systems. The logic for Off-Grid mode is the same as Self-Use mode. However, there is no export power control since there is no grid and a generator is often used in place of the grid to supplement the PV and batteries. When PV meets the load and there is still excess energy, this portion of PV charges the battery. If the battery has not reached the generator's "Off SOC" setting, the generator will continue to charge it. Furthermore, the battery must be connected to the inverter when the generator function is in use.

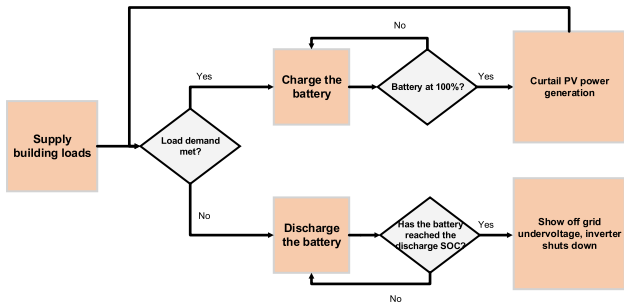


Figure 4.5 Off-Grid Mode logic diagram

NOTE:

To utilize off-grid mode, the inverter must not be connected to the grid at all. There cannot be any conductors landed in the grid terminals.

Peak-Shaving Mode

Peak-shaving mode is ideal for those who pay a variable rate for energy based on the amount of consumed power (kw). This mode limits the power imported from the grid. The inverter will only discharge the battery when the power imported from the grid exceeds a specified amount (kW).

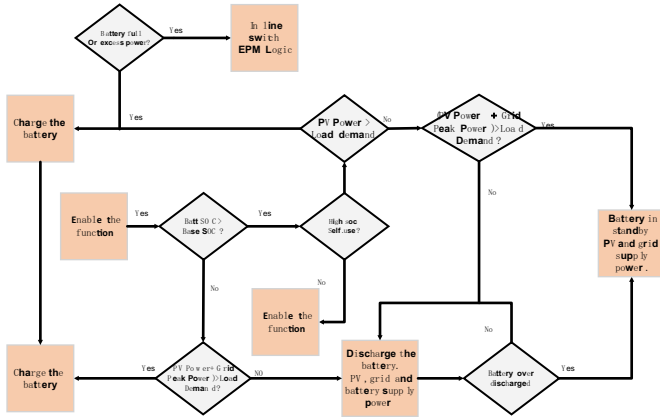


Figure 4.6 Peak-Shaving Mode logic diagram

4. Operating Modes

4.3 DC Coupling vs AC Coupling

4.3.1 DC-Coupling

DC-coupling is the recommended configuration for this inverter. This is because DC-coupling allows the full potential of this inverter to be utilized, maximizing the efficiency of the PV-to-battery charging.

In a DC-coupled system, the PV also gets connected to the inverter in addition to the battery. The inverter will charge the battery directly with DC power from the PV. Typically, DC-coupling is done when additional PV is being added or when the system is new and being installed with energy storage.

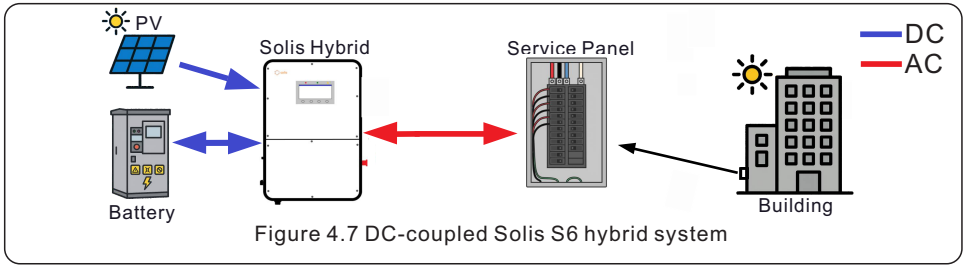


Figure 4.7 DC-coupled Solis S6 hybrid system

The next section explains how the S6 hybrid can be AC-coupled. The next several sections following it will all focus on DC-coupling methods..

4.3.2 AC-Coupling at Grid Port

The Solis S6 hybrid can be DC-coupled or AC-coupled to a building to add energy storage. In an AC-coupled system the energy storage is connected to the AC-side of the system. Typically, the battery and Solis hybrid pairing get connected in parallel with an existing PV system. The battery will charge with PV power from the existing PV system. When AC-coupling with the S6 hybrid, new PV can either be added or not be added to the S6 hybrid, it is up to the system designer. The hybrid would just need to be installed with a compatible high-voltage battery and then be connected to the load center in parallel with the existing PV system.

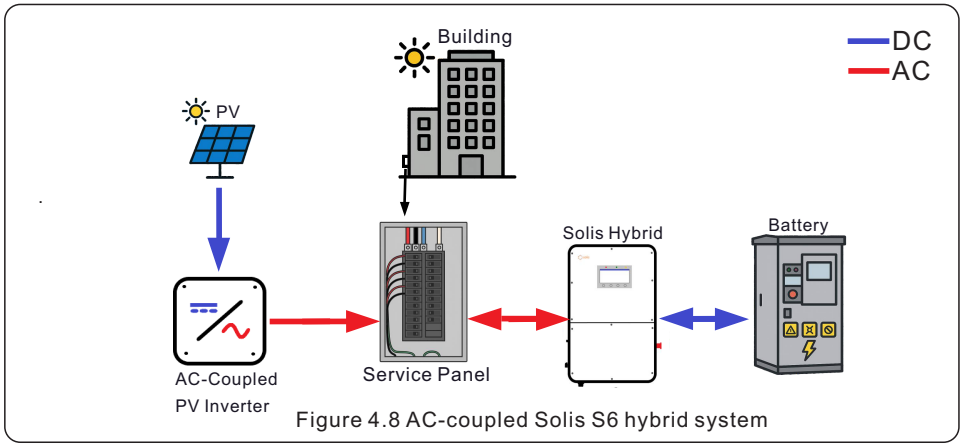


Figure 4.8 AC-coupled Solis S6 hybrid system

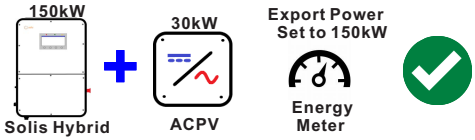
The ability to be AC-coupled makes the Solis S6 hybrid ideal for system retrofits. The hybrid can be installed in place of the old PV inverter but with energy storage added.

4. Operating Modes

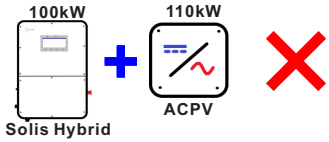
4.3.3 AC-Coupling at the Smart Port

An existing PV system can be AC-coupled (ACPV) to the Smart Port for backup support during outages. ACPV output must be less than the Solis hybrid inverter's rated power."ACPV" refers to any AC-coupled PV system, while "PV" refers to DC-side connections on the S6.The ACPV breaker must be relocated into the backup load center so it remains energized during outages.When grid-connected, monitor grid-side consumption: if combined Solis + ACPV power exceeds the inverter rating, an overload alarm may occur.

The ACPV system connected to the smart port of the system must be smaller than or the same size as the Solis hybrid inverter. Export power must be set so that the maximum export power is equal to the Solis inverter nameplate power rating.



Do not connect an ACPV system to the smart port of the system that is larger than the nameplate power rating of the Solis inverters. If there are multiple Solis inverters, then the combined total power.



It is recommended to install an external contactor switch in series between the Smart Port and the ACPV when connecting the grid-tied inverter to the Smart Port of the inverter. The Smart Port relay cannot be turned off at zero current, which will affect the relay's lifespan.

Suggested Specifications:

Circuit breaker/contactor, three-phase four-wire, rated current above 250A, supporting internal DO control turn-off of the inverter). When it is necessary to stop the AC couple function, first control the external switch to be disconnected, and then cut off the smartload port relay at zero current."

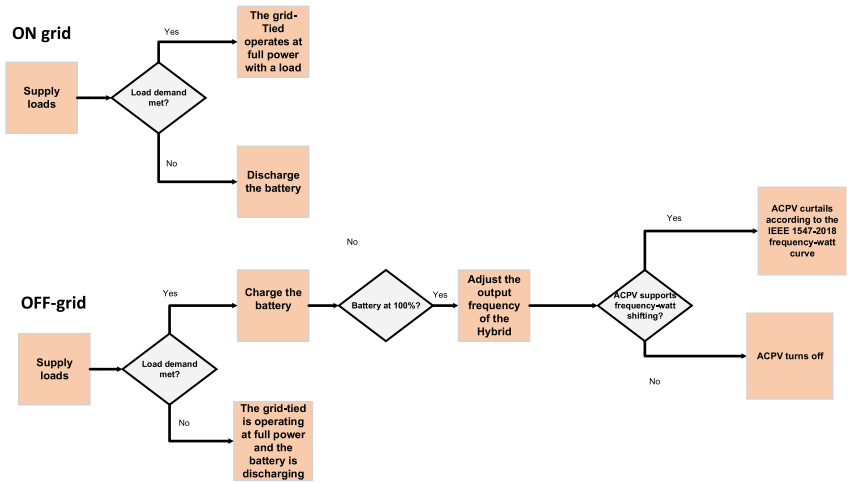


Figure 4.9 AC-Coupling (ACPV) with Backup Operating Logic

4. Operating Modes

Frequency Shifting

There is no direct communication between the Solis S6 hybrid and the AC-coupled PV system. The inverter uses frequency-shifting to modulate the output of the ACPV system. The inverter uses the frequency-watt curve outlined in the IEEE 1547-2018 standard. When in backup mode, the S6 hybrid will begin to shift the AC frequency when it detects that the power supplied by all of the PV, including the ACPV, is greater than the power demanded (consumed). This change in frequency will be detected by the ACPV system. If the ACPV system also supports the IEEE 1547-2018 frequency-watt curve, then its output power will reduce according to that curve. If the ACPV system does not support frequency-watt, then it will shut off as the frequency shifts and then turn back on once the S6 hybrid corrects the frequency.

NOTE:

The maximum output power of the existing PV inverter must be less than the maximum output power of the Solis hybrid inverter. AC coupling can be done on either the grid side or the smart port side. However, if it is on the smart port side, then the max.output power of the existing PV inverter must be less than the maximum output power of the Solis hybrid inverter.

4.4 Backup Power Inverter Paralleling

Up to six hybrid inverters can be installed together in parallel on the backup side of the system . The backup ports of each inverter would terminate in separate overcurrent protection devices within the backup load center.

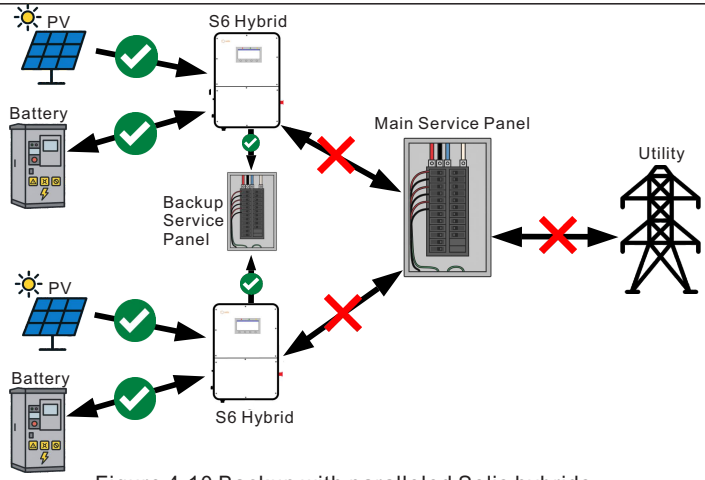


Figure 4.10 Backup with paralleled Solis hybrids

It should first be determined what the maximum continuous current needs to be in order to meet the energy demand of the home. Up to six S6 hybrid inverters can be installed in parallel with PV and batteries to provide continuous backup power. For example, three 150kW hybrids in parallel can provide up to 541.2A (180.4A x 3) of power to the loads in backup mode.

For a system with backup, the average daily power consumed should be less than or equal to the average daily PV power produced on any given day of the year. Otherwise, an overload condition may occur, causing the system to go down temporarily. The chart in Figure 4.16 shows how much continuous backup power can be produced depending on how many inverters are installed in parallel and what size they are.

4. Operating Modes

Surge Capacity & Passthrough Power

The **surge capacity** is how much power the inverter can generate for a small amount of time, usually one hundred milliseconds to ten seconds maximum. Each Solis model has different ratings for passthrough power and surge capacities. Installing multiple inverters in parallel increases the surge capacity and passthrough power.The chart in Figure 4.12 shows the surge capacities and passthrough power ratings for each model.

There will be times when the loads on the backup side consume more power than the inverter is able to provide with PV and battery power. The **passthrough power** is the amount of power that the can pass through the inverter from the grid to the loads when there is not enough PV and battery power available. The passtrough current of the S6-EH3P(100-150)K10-NV-YD-H-US is 250A.

Inverter Model	100s Surge Curent	10s Surge Curent	200ms Surge Curent
S6-EH3P60K10-LV-YD-H-US	202.02A	202.02A	230.88A
S6-EH3P75K10-LV-YD-H-US	216.48A	252.56A	288.64A
S6-EH3P100K10-NV-YD-H-US	168.42A	192.48A	240.6A
S6-EH3P125K10-NV-YD-H-US	210.56A	240.64A	300.8A
S6-EH3P150K10-NV-YD-H-US	216.48A	252.56A	288.64A

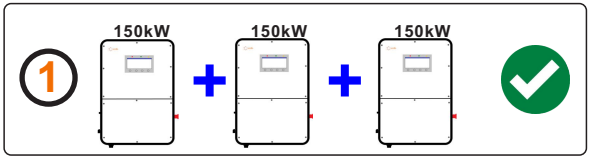
Figure 4.11 Surge Current Ratings based on Surge Duration

4. Operating Modes

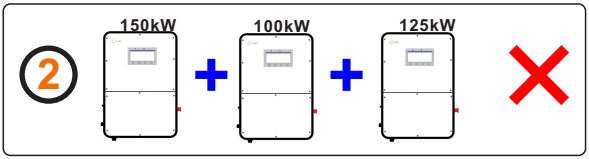
4.4.1Paralleling Limitations and Restrictions

There are a few limitations to installing multiple inverters in parallel for backup power. Please note that these caveats do not apply when only paralleling on the grid-side. The restrictions shown below are only with respect to paralleling the backup-sides together. All inverters in the same system must be on the same firmware version. Please install one Solis data logger per inverter.

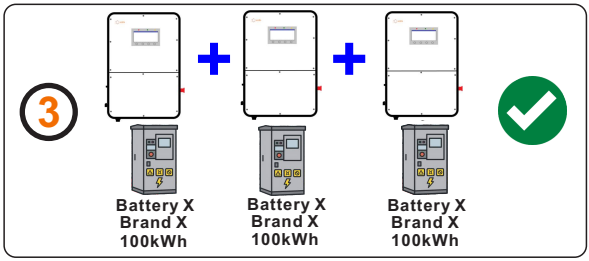
1. Paralleled inverters must be the same size (model number).



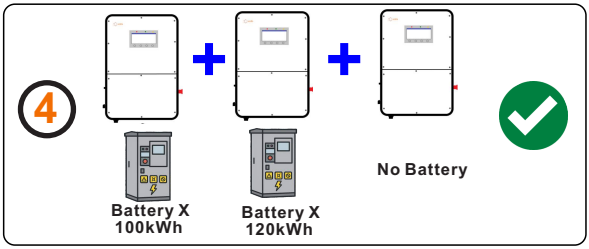
2. Do not parallel inverters that are different sizes. Again, this rule only applies to systems with backup power.



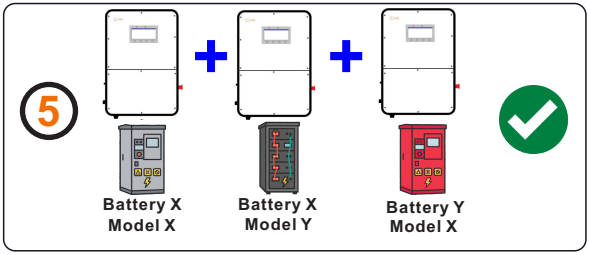
3. Paralleled inverters should have the same capacity (kWh), brand, and model of battery connected for maximum system efficiency. However, mixing and matching different batteries in the same system is acceptable.



4. Supports different capacities, but the capacity difference should be within 50% range. To ensure balanced charging and discharging in parallel, it is recommended that the battery capacity remain consistent.



5. Supports different brands, different models of the same brand, and different batteries connected to the same inverter.



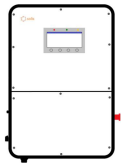
NOTE:
CTs can be connected directly to the inverter without needing to install an energy meter. This only works for 2 inverters. When three or more inverters are being installed, the Eastron energy meter must be installed. The hardware limit for CT mode is set at 600A.

4. Operating Modes

NOTE:
In an off grid parallel system, if the battery capacity is limited and some are connected to the battery while others are not, it is recommended that the battery be connected to the host

4.4.2 Power Control System (PCS)

The Solis S6 hybrid inverter is UL 3141 PCS certified. This means that the inverter is able to regulate the current and limit the loading on the bus bars and conductors. The PCS can limit the power flow as to not exceed any busbar rating limits. With PCS, the 120% rule for breaker sizing becomes irrelevant, you can go up to the busbar rating. For the S6-EH3P150K10-NV-YD-H-US model, the maximum controlled current on the busbar is 180.4A (150kW).



Solis Hybrid Inverter

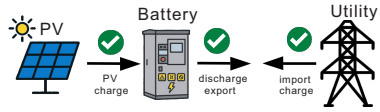
CT

Figure 4.12 Components of a Solis commercial PCS system

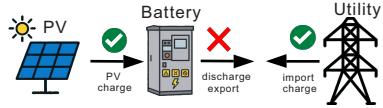
NOTE:
Every S6 hybrid comes with a set of three AKH-0.66-K-80*40-600A CTs and Eastron SDM630-MCT-ETL meter.

Solis Power Control System (PCS) Operating Modes

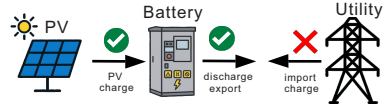
1. Unrestricted Mode: This mode should be used when PCS is not required. The system is permitted to charge the batteries with grid power and can discharge-export battery power to the grid.
This mode is enabled by default.



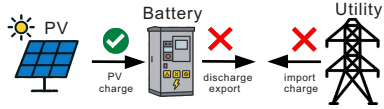
2. Import Only Mode: The system is permitted to charge the battery with grid power but is prohibited from discharge-exporting battery power to the grid.



3. Export Only Mode: The system is permitted to discharge-export battery power to the grid but prohibits the use of grid power to charge the battery.



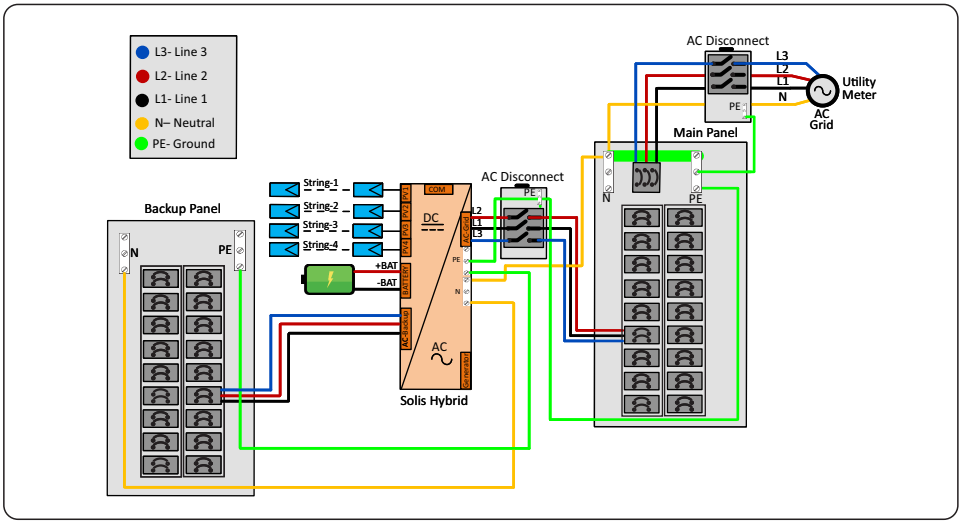
4. No Exchange Mode:. The system is only permitted to charge with PV power and can only discharge to cover loads. The system is prohibited from discharging battery power to the grid.



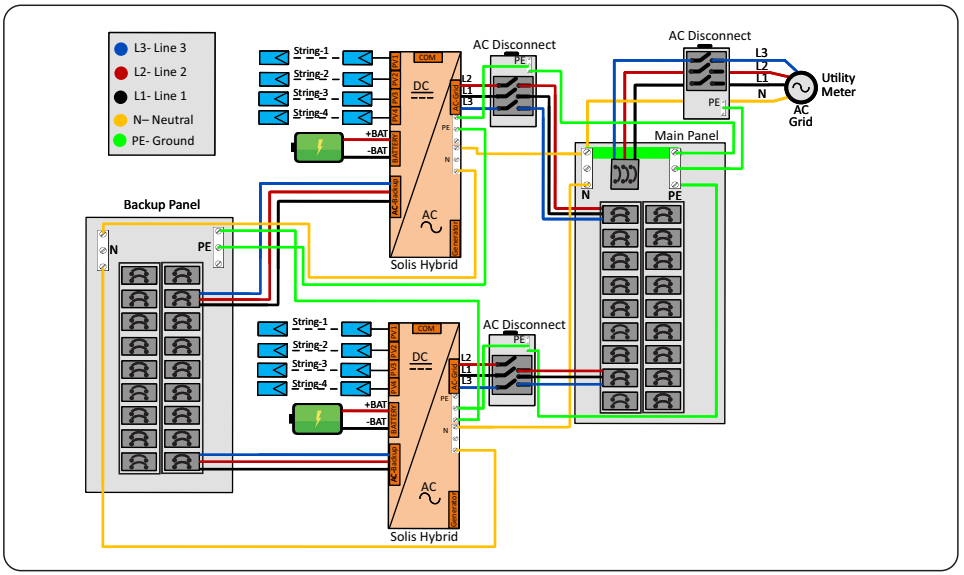
4. Operating Modes

4.5 Wiring Diagrams

4.5.1 Backup System with One Solis Hybrid Inverter



4.5.2 Backup with Multiple Solis Hybrid Inverters



5. Installation

5.1 Select a Location to Install the Inverter

When selecting a location for the inverter, the following criteria should be considered:

Exposure to direct sunlight may cause output power derating due to overheating. It is recommended to avoid installing the inverter in direct sunlight. The ideal location is one where the ambient temperature does not exceed 40°C (140°F)

It is also recommended to install the inverter somewhere the rain and snow will not land directly on it. The ideal installation location is on a north-facing wall under an eave.

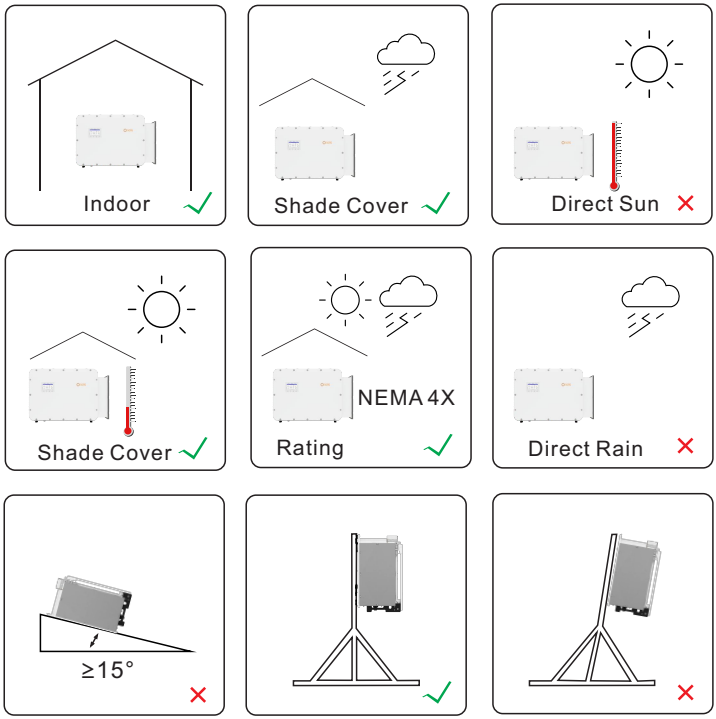


Figure 5.1 Recommended Installation locations

WARNING: Risk of Fire

Despite careful installation, electrical equipment can cause fires.

- Do not install the inverter in an area that contains flammable materials, liquids, or gases.
- Do not install the inverter in a potentially explosive environment.
- The structure on which the inverter is being mounted must be fireproof.

5.1.4 Avoiding direct sunlight

Installation of the inverter in a location exposed to direct sunlight should to be avoided.

Direct exposure to sunlight could cause:

- Power output limitation (with a resulting decreased energy production by the system).
- Premature wear of the electrical/electromechanical components.
- Premature wear of the mechanical components (gaskets) and user interface.

5.1.5 Air circulation

Do not install in small, closed rooms where air cannot freely circulate. To prevent overheating, always ensure that the air flow around the inverter is not blocked.

5.1.6 Flammable substances

Do not install near flammable substances. Maintain a minimum distance of ten feet (three meters) from such substances.

5.1.7 Living area

Do not install in a living area where the prolonged presence of people or animals is expected. Depending on where the inverter is installed (for example: the type of surface around the inverter, the general properties of the room, etc.) and the quality of the electricity supply, the sound level from the inverter can be quite high.

5.2 Post mounting

You can also use the post mounting method to install the inverter,

1. The on-site post need to be fixed to the ground through components.
2. When using post mounting, the minimum ground clearance at the bottom of the inverter should be > 1000mm.
3. Ensure that the surrounding environment meets the working environment requirements of the inverter.
4. For other installation-related matters, please consult Solis technicians.

Here it's the post mounting example schematic diagram.

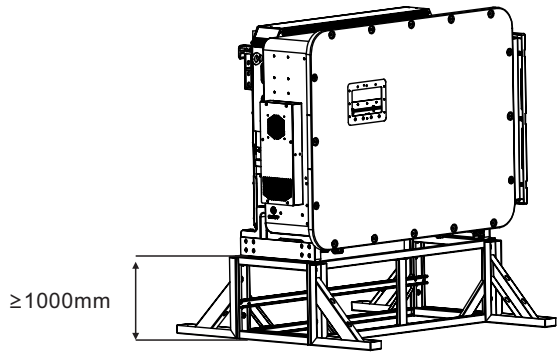


Figure 5.2

5. Installation

When selecting a location for the inverter, consider the following:

WARNING: Risk of Shock

Despite careful installation, electrical devices present a shock hazard.

- Install the equipment out of reach of children if children may be present.
- Ensure that the equipment covers are always in place whenever the equipment is not being serviced.
- Never service live equipment. Always turn the equipment off first. Use a multimeter to verify that conductor voltages are zero.

CAUTION: Hot Surface

- The temperature of the inverter heat sink can reach 167°F. Do not touch the heat sink while the inverter is operating.

The ambient temperature and relative humidity of the installation environment must meet the following requirements:

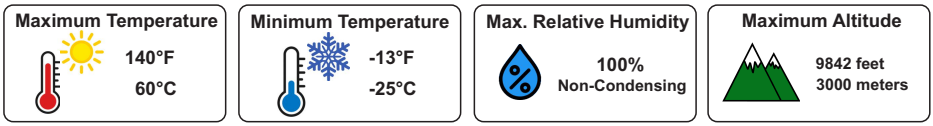


Figure 5.3 Installation environment conditions

Load bearing structure requirements:

Made of nonflammable materials

Max. load bearing capacity ≥ 4 times of inverter weight. About the bearing wall. Only supports wall-mounted installation with solid walls.

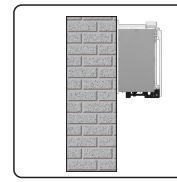


Figure 5.4 Load bearing structure

5.2.1 Clearances

- If multiple inverters are installed on site, a minimum clearance of 31.5 inches should be kept between each inverter and all other mounted equipment. The bottom of the inverter should be at least 39.4 inches above of the ground or floor.
- The LED status indicator lights located on the inverter's front panel should not be blocked
- Adequate ventilation must be present if the inverter is to be installed in a confined space.

5.2.2 Consult technical data

- Consult the technical specifications sections at the end of this manual for additional environmental condition requirements (temperature range, altitude, etc.)

5.2.3 Angle of installation

- This model of Solis inverter must be mounted vertically (90° degrees not greater or less than 90° degrees straight up).

5. Installation

5.3 Inverter Dimensions & Weight

The inverter weighs about 374.79 lbs (170 Kg) outside of the box.

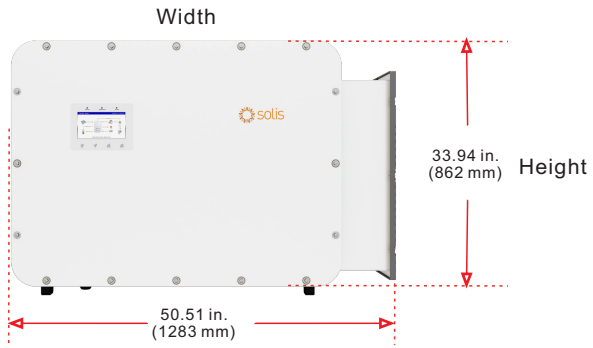


Figure 5.5 Inverter Dimensions

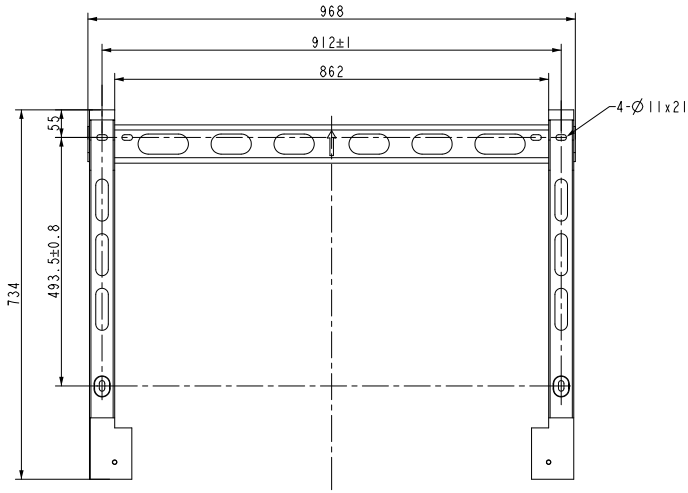


Figure 5.6 Inverter Bracket Dimensions

5. Installation

5.4 Mounting the Inverter

- Mount the inverter on a wall or structure capable of bearing the weight of the machine
- The inverter must be mounted upright on a vertical structure with a tilt of 90°. A tilt greater or less than 90° may cause the inverter output power to derate.
- To prevent overheating, be sure that the inverter has adequate air flow around it. A minimum clearance of 31.5 inches (800mm)should be kept between inverter & other equipment. There must be 39.4 inches (1000mm) of clearance between the bottom of the inverter and the ground. Between the sides of the inverter and everything else, there must be a miniumum of 7.9 inches of clearance.

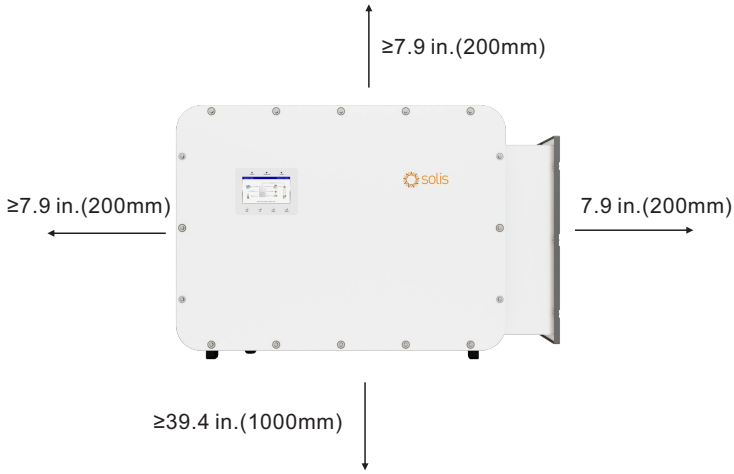


Figure 5.7 Inverter Mounting Clearances

- Visibility of the LCD screen should be considered. Ideally, the screen would be at eye-level.
- Adequate ventilation around the inverter must be provided.

NOTE:
Nothing should be stored directly on top, underneath, or against the inverter.

- When the inverter is mounted on the wall, it sticks out approximately one foot.
- Keep this in mind when selecting the installation location for the inverter. The exact dimensions of the inverter and the mounting bracket are on the next page.

Once a suitable location has been found according to Figures 5.3 and 5.4, use figures 5.6 and 5.7 to mount the bracket to the wall. You may drill additional holes in the bracket if you need to you need to. The steps for mounting the inverter are listed below:

1. Place the bracket on the wall or inverter rack. The arrow in the middle of the bracket points up. With a pencil or marker, mark the mounting holes. Fasten the bracket to the wall**. If you are mounting the inverter to a wall, be sure the fasteners go into studs**.

5. Installation

NOTE:

The inverter must be mounted vertically at a 90° angle.

Four fasteners must be used to ensure the bracket does not come off the wall. At least two must embed in a wall stud to bear the inverter weight.

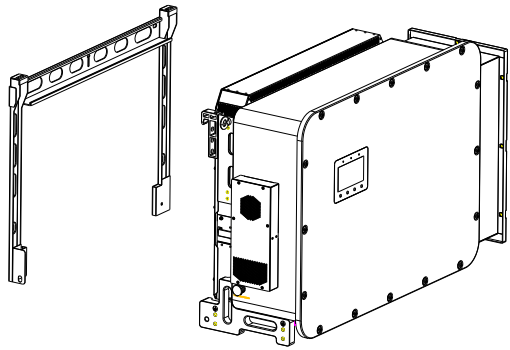


Figure 5.8 Wall mount bracket

2. Lift up the inverter and align the back two hooks on the heat sync with the two tabs on the inverter mounting bracket. Lower the inverter hooks down onto the mounting bracket tabs and ensure the hooks have a solid bite before releasing the inverter. Then install the two set screws that are included with the inverter for stabilization.

Inverter handles

1. The inverter comes with two black handles that are removable and only required for safely lifting the inverter.
2. The position of handrails installation as the red mark in figure 5.9.
3. Whenever lifting the inverter or setting it down, do sp slowly and gently. This ensures that the internal components and the outer chassis do not take any damage.
4. Two people are required to remove the inverter as it is very heavy. Be sure to use the black handles.
5. Remove the handles by unscrewing them once the inverter has been mounted.

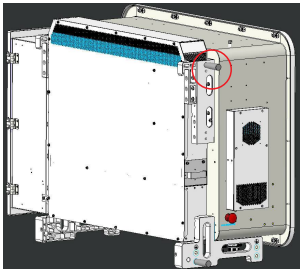
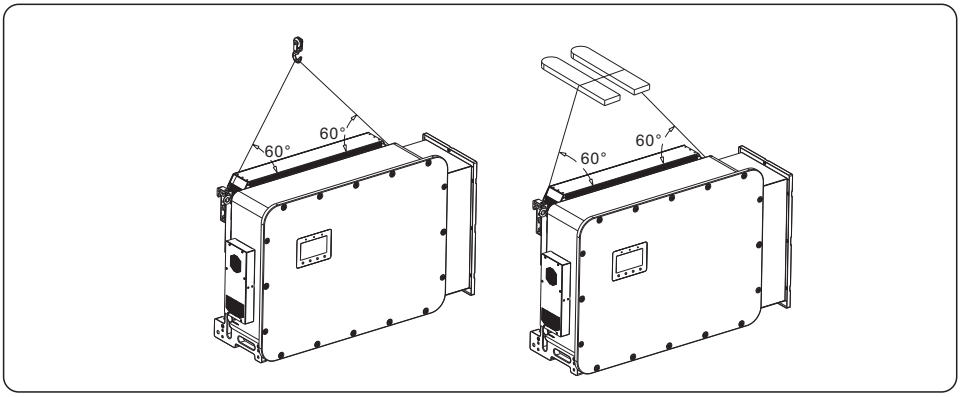


Figure 5.9 Inverter handle

5. Installation



There are two common types of lifting, as shown in the following figure. Users can adopt different types of lifting according to specific circumstances. The specific usage requirements are as follows.

Installation Tools (The following tools are to be prepared by the customer)
1. Socket/Bolt Wrench Tool: Outer bolt specifications: M8, M10, M12;
2. Wrench Tool: Allen wrench and star-shaped Allen wrench set; Screw specifications: M6
3. Screwdriver Tool: Large and small cross and flat screwdrivers;
4. Torque Screwdriver: Torque screwdriver and a set of sockets (for wiring use, customers can choose according to their needs);
5. Electric drill and impact drill and accessories;

Wiring Tools (The following tools and terminals must be prepared by the customer)
1. PV terminal MC4 crimping tool, Ethernet cable crimping tool;
2. Communication terminal crimping tool;
3. OT terminal crimping tool: for wire sizes of 25~95 square millimeters, matching terminals are listed in the table below; wires and terminals need to be provided by the customer;
4. Accompanying wire stripping tools;
5. Accompanying heat shrink tubing and heat shrink tools;

Terminal type	Battery terminal	Backup	Smart load	Grid	PE
Recommend copper cable diameter	25-35mm^2	70mm^2	70mm^2	95mm^2	50-70mm^2
Maximum support cable diameter	35mm^2	95mm^2	120mm^2	150mm^2	70mm^2
The size of the fixed bolts	M10	M10	M10	M10	M10
Cable Lug	25/35-6	70/95-8	70/90/120-12	95/120/150-12	50/70-10
Torque	4-5N.m	10-12N.m	20-30N.m	20-30N.m	10-12N.m

5. Installation

3. Lifting tools (the following tools need to be provided by the customer)

- M10 lifting ring *2,
- 500Kg lifting strap *2,
- Lifting hook *2 - a set,

As shown in the image below;

5.5 Maximum Conductor Sizes & Torque Specs

5.5.1 Max. Conductor Sizes and Torque Specifications

Terminal type	Recommend copper cable diameter (Copper 90℃)	Maximum support cable diameter (Aluminum 90℃)	The size of the fixed bolts	Cable Lug (Two hole lugs) (CAT.NO.)	Torque
Battery terminal	2AWG(35mm^2)	2AWG(35mm^2)	/	/	/
Backup	4/0AWG(110mm^2)	250KCMIL(120mm^2)	M10	60248/60254	10-12N.m
Smart Port	4/0AWG(110mm^2)	250KCMIL(120mm^2)	M10	60248/60254	10-12N.m
Grid	300KCMIL(150mm^2)	500KCMIL(260mm^2)	M10	60260/60271	10-12N.m
Backup PE	1/0AWG(55mm^2)	2/0AWG(70mm^2)	M10	60230/60236	10-12N.m
Smart Port PE	1/0AWG(55mm^2)	2/0AWG(70mm^2)	M10	60230/60236	10-12N.m
Grid PE	3/0AWG(85mm^2)	300KCMIL(150mm^2)	M10	60242/60260	10-12N.m

Figure 5.10 Max. Conductor Size and Torque Spec Chart

5. Installation

Conductor, conduit, and overcurrent protection device sizing shall be done in accordance with the NEC and local electrical codes & standards.

5.6 Equipment Grounding

An external ground connection is provided at the both sides of inverter.
Prepare OT terminals: M10. Use proper tooling to crimp the lug to the terminal.
Connect the OT terminal with ground cable to the right side of inverter. The torque is 10-12N.m.

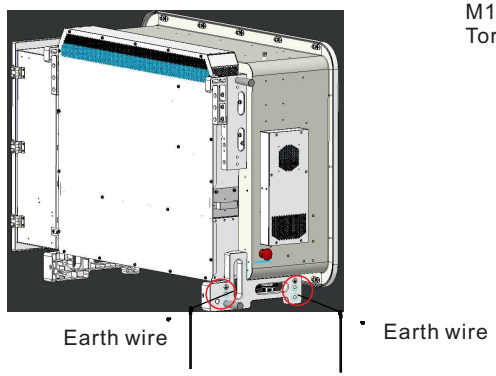


Figure 5.11 Connect the external grounding conductor

External grounding connection terminals are provided on both sides of the bottom bracket of the inverter. The grounding positions are as shown in the figure, located at the red circles. There are a total of 8 grounding positions on both sides.

Terminal type: OT terminal; Bolt type: M10. Use the appropriate tool to press the wire onto the terminal block.
Connect the OT terminal to both sides of the inverter, with a torque of 10-12 Nm.
To connect the grounding terminal of the bottom bracket, it is recommended to use copper wire. Solis conductors or stranded wires can be used. The specific wire size should refer to local standards and regulations.

5. Installation

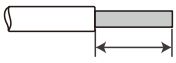
5.7 PV Cable Installation

Before connecting inverter, please make sure the PV array open circuit voltage is within the limit of the inverter.

Before connection, please make sure the polarity of the output voltage of PV array matches the“DC+”and“DC-”symbols.

Please use approved DC cable for PV system.

1. Select a suitable DC cable and strip the wires out by 7±0.5mm. Please refer to the table below for specific specifications.



Cable type	Cross section（mm²）	
	Range	Recommended value
Industry generic PV cable	4.0~6.0 (12~10AWG)	4.0（12AWG）

Figure 5.12

2. Take the DC terminal out of the accessory bag, turn the screw cap to disassemble it, and take out the waterproof rubber ring.

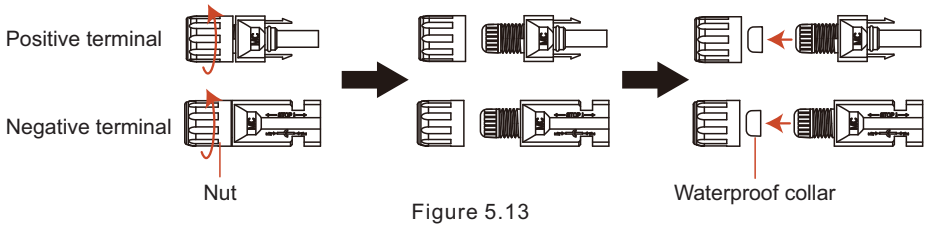


Figure 5.13

3. Pass the stripped DC cable through the nut and waterproof rubber ring.

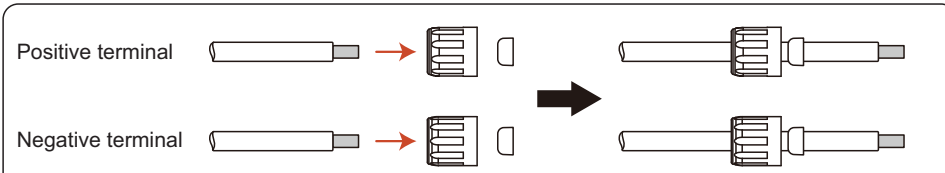


Figure 5.14

5. Installation

4. Connect the wire part of the DC cable to the metal DC terminal and crimp it with a special DC terminal crimping tool.

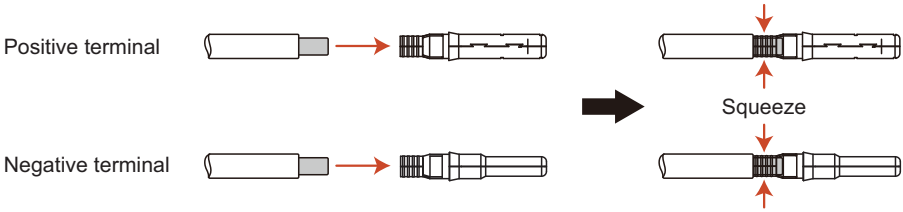


Figure 5.15

5. Insert the crimped DC cable into the DC terminal firmly, then insert the waterproof rubber ring into the DC terminal and tighten the nut.

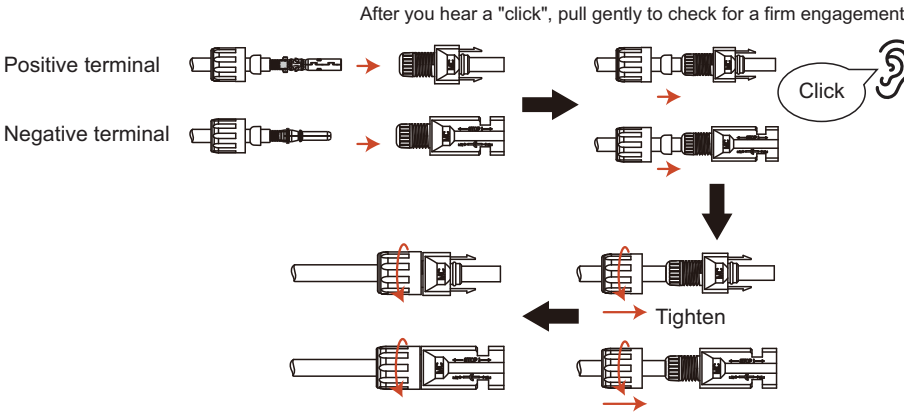


Figure 5.16

6. Measure PV voltage of DC input with multimeter, verify DC input cable polarity.

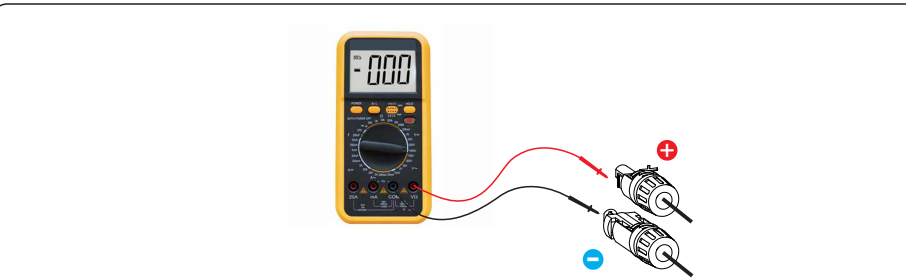


Figure 5.17

5. Installation

7. Connect the wired DC terminal to the inverter as shown in the figure, and a slight "click" is heard to prove the connection is correct.

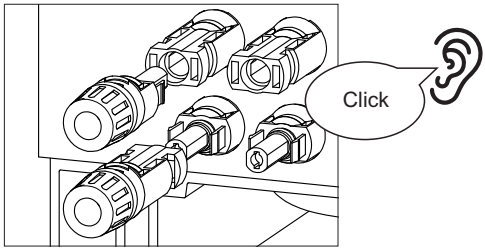


Figure 5.18

CAUTION:

If DC inputs are accidently reversely connected or inverter is faulty or not working properly, it is NOT allowed to turn off the DC switch. Otherwise it may cause DC arc and damage the inverter or even lead to a fire disaster. The correct actions are:

*Use a clip-on ammeter to measure the DC string current.

*If it is above 0.5A, please wait for the solar irradiance reduces until the current decreases to below 0.5A.

*Only after the current is below 0.5A, you are allowed to turn off the DC switches and disconnect the PV strings.

* In order to completely eliminate the possibility of failure, please disconnect the PV strings after turning off the DC switch to aviod secondary failures due to continuous PV energy on the next day.

Please note that any damages due to wrong operations are not covered in the device warranty.

NOTE

PV Simulator Operation & Safety Notice

1. Power-On Sequence: When using a PV simulator to test the inverter, you must turn on the inverter's PV DC switch first, and then turn on the PV simulator.

2. Power-Off Sequence: To shut down the system, always turn off the PV simulator first, and then turn off the inverter. Reversing this order may cause equipment failure or a fire hazard on site.

3. Critical Warning: Do not use a battery to simulate a real PV input for testing under any circumstances. This improper substitution can lead to equipment failure or a fire hazard.

5. Installation

5.8 Rapid Shutdown & Emergency Power Off

5.8.1 Integrated Rapid Shutdown Transmitter & Switch

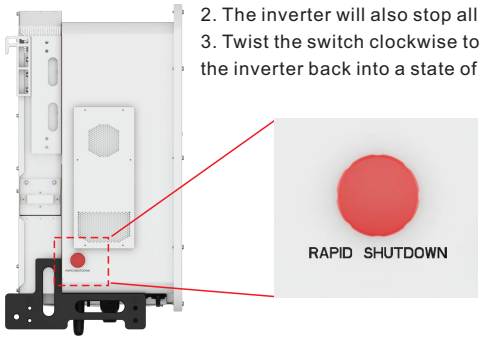
Important Note

The inverter can be ordered with an internal rapid shutdown transmitter. This transmitter brand must match the receivers that are being installed with the PV modules. **Not abiding by this will void the inverter warranty.**

The internal transmitter generates a PLC signal when it receives AC power. This signal travels up the PV strings to the receivers that are connected to the PV modules. When the receivers get this signal, they turn on and allow the string voltage to ramp up. When the receivers lose this signal, they turn off. When the receivers are off, each PV module only puts out less than 1VDC.Pressing in this switch cuts power to the internal RSD transmitter. Engaging the switch will also cause the inverter to stop producing power. The inverter will enter a standby state in which it will not energize the backup ports or connect to the grid. It will not generate any power at all or interact with the battery until the switch is disengaged.

Rapid Shutdown & Emergency Power Off Initiation Process

1. Press the switch button in to turn off the internal transmitter. The PV string DC voltages will ramp down to safety-level within 30 seconds.
2. The inverter will also stop all AC power output to both grid and backup.
3. Twist the switch clockwise to turn the internal transmitter back on and bring the inverter back into a state of normal operation.



Note:

Rapid shutdown will only initiate if receivers have been installed in the PV array connecting to the PV modules directly.

Without the receivers the inverter can achieve emergency power off but it cannot achieve rapid shutdown..

Figure 5.19 Rapid Shutdown & Emergency Power Off Initiation Switch

Additional Details About Rapid Shutdown

1. With rapid shutdown receivers installed, the PV string voltages should be very low. Depending on the receiver type, you should be measure between 0.6 and 0.7Vdc per module. Example: x10 modules = 6V-7V for the whole string
2. If the PV string voltages are low, check that the AC breaker is turned on so that the inverter is getting AC voltage and that the rapid shutdown switch is popped out. Give the switch a twist clockwise to verify that is popped out.
3. The DC switch does not have to be turned on for the receivers to get the PLC signal from the internal transmitter. However, if an external DC switch is installed, ensure that it is turned on or else the receivers will not be able to get the PLC signal from the transmitter.

5. Installation

Please see the Master Compatibility sheet on the Solis US website for details on which internal transmitter options are available for this Solis hybrid inverter.

5.8.2 Photovoltaic Rapid Shutdown System (PVRSS) Certification

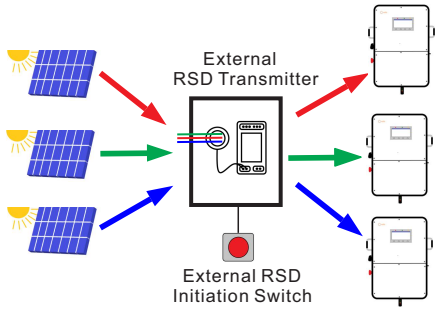
The Solis S6 hybrid is PVRSS-certified with several brands that manufacture rapid shutdown equipment. The certification includes the inverter, the PLC transmitter, and the receivers. The transmitter is located within the inverter, the receivers are installed with the PV modules. To avoid violating the PVRSS certification, the same brand of receivers must be installed as the internal transmitter. (Ex: Tigo transmitter with Tigo TS4-A-F receivers). There can be no mixing of different brands without violating both the PVRSS certifiaction and the rapid shutdown equipment warranty. For this reason, please be sure to check the Compatibility Sheet and only install equipment that is matched under the same brand. The only exceptiown to this is Midnite Solar receivers, which can be used with either Tigo or APS transmitters.

Figure 5.20 Components Listed in a Photovoltaic Rapid Shutdown System (PVRSS) Certification

Batteries and PV modules are not listed (specified) in the PVRSS certification. The transmitter can come integrated inside of the inverter, but it must be ordered with the correct internal transmitter. Alternatively, the transmitter can be installed externally in a separate enclosure.

5.8.3 Multiple Inverters with One External Transmitter

If multiple inverters will be installed in parallel, it is ideal to use a single external rapid shutdown transmitter. This prevents cross-talk from occurring because there will only be one transmitter for all of the PV strings in the system. Run all of the strings through the external rapid shutdown enclosure first and then to each inverter.



Note: Hybrid inverters shown here do not have internal transmitters.

5.21 Multiple Inverters with a Single External RSD Transmitter

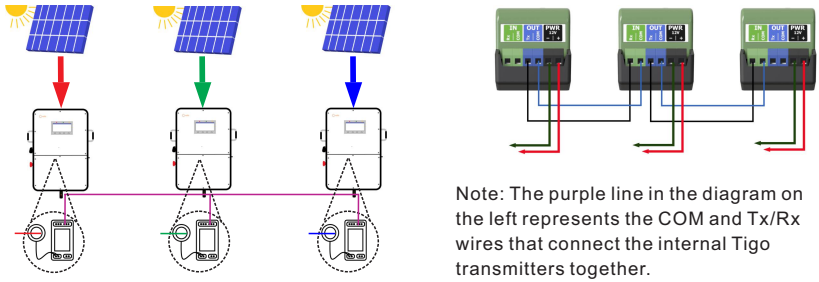
5. Installation

5.8.4 Cross-Talk

Cross-talk occurs when competing PLC signals sent from different transmitters reach the same RSD receivers. This causes the receivers to randomly cycle on and off at various times. Cross-talk must be avoided to ensure proper inverter operation and to eliminate risk of damage to the system components. If multiple transmitters must be used, then it is important to keep the PV leads going from each inverter to the arrays separated by one foot minimum. Tigo transmitters can be physically wired together in a daisy-chain. Be sure to understand what kind of cross-talk protection the transmitter uses so that the system can be designed to eliminate any chance of cross-talk happening. If an external rapid shutdown transmitter is going to be used and the inverter has an integrated transmitter, then the integrated transmitter must be disabled to prevent cross-talk.

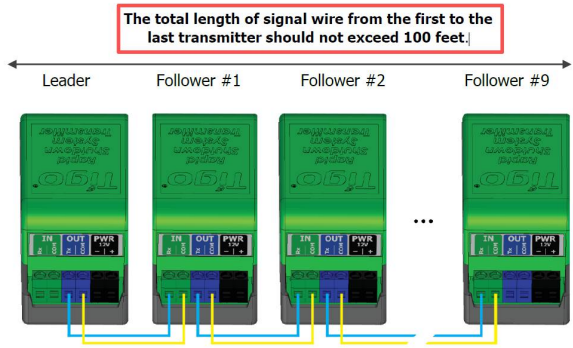
5.8.5 Multiple Inverters with Multiple Integrated Tigo Transmitters

Tigo transmitters can be daisy-chained together with two wires. This allows the transmitters to synchronize such that cross-talk between transmitters is eliminated. With this type of installation, an external RSD transmitter box is not required. Link the internal transmitters together so that the PLC signals become synchronized. Engaging the RSD initiation switch on the inverter wire box will initiate rapid shutdown for all of the inverters.



Note: The purple line in the diagram on the left represents the COM and Tx/Rx wires that connect the internal Tigo transmitters together.

5.22 Multiple Inverters with Multiple Internal Tigo Transmitters



5.23 Transmitter daisy-chaining cable length limitation

IMPORTANT:
Tigo TS4-A-O optimizer has not been tested and certified with this inverter.

5.8.6 External Rapid Shutdown & Emergency Power Off Switch

If the inverter is being installed where it is inaccessible to first responders, an external rapid shutdown switch must be installed somewhere accessible. Any 2-wire normally closed switch will work.

Steps for Installing an External RSD & EPO Initiation Switch

1. Install the external RSD switch and run two wires between it and the inverter
2. Connect one end of the two wires pins RSD
3. Connect the other end of the two wires to the external RSD switch
4. This is a normally-closed set of terminals. Be sure to use a normally closed switch.

Note: the RSD switch on the inverter wire box will still initiate rapid shutdown. Be sure the transmitter is on by giving the switch a clockwise twist when you are ready to energize the system.

IMPORTANT:

Installing module-level power electronics (MLPE) not listed on Compatibility List will void the inverter warranty and the MLPE warranties. The external switch does not require compatibility matching, any normally closed switch will work with this inverter to initiate rapid shutdown.

NOTE:

Only remove the jumper when installing an external rapid shutdown switch. In all other cases, do not remove the jumper, as it may cause the inverter to stop.

The external rapid shutdown initiation switch is sold separately. Please contact your local supplier for help with procurement. Solis recommends using an IMO switch.

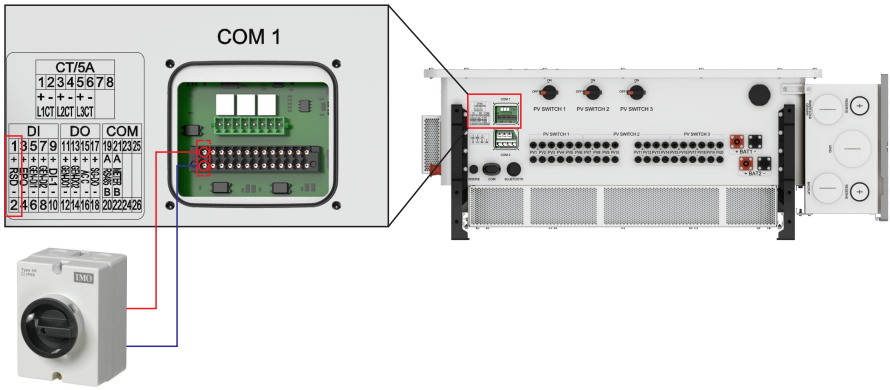


Figure 5.24 External RSD Initiation Switch

5. Installation

5.9 Battery Installation

DANGER:

Before installing the battery cables, be sure that the battery is turned off.

Use a multimeter to verify that the battery voltage is 0Vdc before proceeding.

Consult the battery product manual for instructions on how to turn it off.

NOTE:

The condition for battery fully charging:

For this series of product, the compatible battery voltage should from 150-800V, but if you want the battery fully charging, you should know the condition(as the below table) for that. When the battery voltage between 400V-500V, the charging current can reach to the maximum value: 70A, and when battery voltage between 500V-800V, the single channel charging capacity can reach to the 35KW. For an example. for 60K model, two batteries charging power can reach to 60kw.

5.9.1 Location of Battery Terminals

The inverter has two sets of inputs for two different batteries. The ports are labeled BAT1+ (battery 1 positive), BAT1- (battery 1 negative), BAT2+ (battery 2 positive), and BAT2- (battery 2 negative). It is crucial to not accidentally reverse polarity and connect a positive cable to a negative port or vice versa. These terminals can be a bit tricky to operate. The next page explains the correct process in detail.

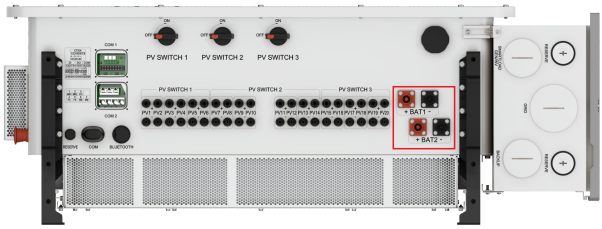


Figure 5.25 Location of the battery terminals

5. Installation

Battery Compatibility

This inverter only works with specific battery models. Please consult the Battery Compatibility Sheet on the Solis US website for which battery models this inverter will support. **Installing a battery that is not on the list will void the inverter warranty.** The inverter has two battery inputs and so can connect to two battery stacks at the most, unless the battery allows for paralleling stacks.

NOTE:
Before connecting the battery, please carefully read the product manual of the battery and perform the installation exactly as the battery manufacturer specifies in the manual

NOTE:
The suggested specification of the external battery circuit breaker for each battery is 100A. Ensure that the battery has an integrated breaker or install one.

5.10 AC Wiring

The inverter has two AC outputs: (1) to a backup distribution panel and (2) to the main service panel that is connected directly to the utility. In normal grid-tied operation, the inverter can export excess PV power to the grid (sell back). Or, it can be configured for zero export. If utility power fails the Grid-side of the inverter shuts off. The backup-side of the inverter stays energized as long as there is enough PV and battery power to support the loads. The inverter can be connected to other Solis hybrids in parallel to provide additional support to the backup loads.The smart port is an optional port only to be used with either (1) a generator (2) an AC-coupled PV system or (3) a sheddable load while in backup mode.

5.10.1 AC Terminals

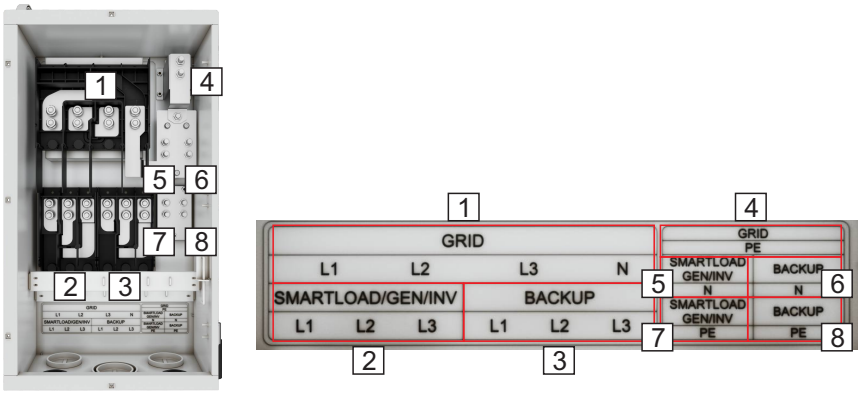


Figure 5.26 AC terminals: Backup, Grid, & Smart Port

Backup: This port remains energized with PV/ battery whenever the grid fails. Loads connected to the backup get power directly from the grid whenever there is not enough power available from PV/battery.
Grid: The inverter connects to the utility through this port. Excess PV power can be exported to the grid and the inverter can import power from the grid to charge the battery and support home loads.
Smart Port: This port is for connecting either a generator, an AC-coupled PV system, or a large load that can be shed during a grid outage if there is not enough power to support it (such as an EV charger)

AC Current Ratings for Sizing Over-Current Protection (OCPD)

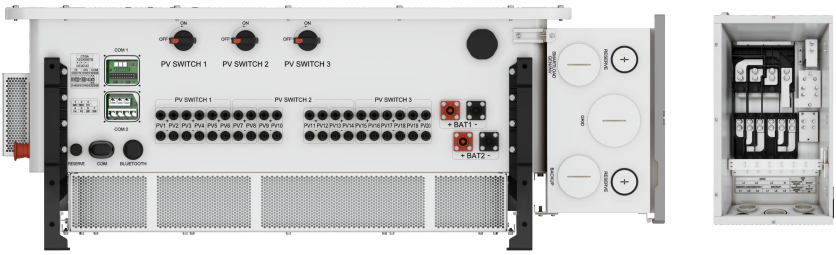
To protect the inverter, we recommend installing a device for protection against over-current and leakage, based on the following current ratings noted in Figure 5.27

Inverter Model	Grid Max. Input Current	Max. Smart Port Input Current	Backup Max Surge Current (200 ms)
S6-EH3P60K10-LV-YD-H-US	250A	144.3A	288.6A
S6-EH3P75K10-LV-YD-H-US	250A	180.4A	288.64A
S6-EH3P100K10-NV-YD-H-US	250A	120.3A	240.6A
S6-EH3P125K10-NV-YD-H-US	250A	150.4A	300.8A
S6-EH3P150K10-NV-YD-H-US	250A	180.4A	288.64A

Figure 5.27 Current ratings AC inputs/outputs

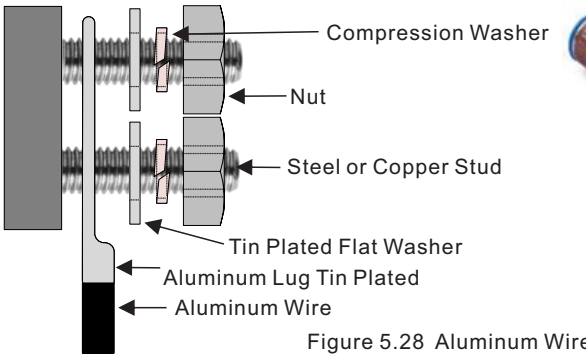
5. Installation

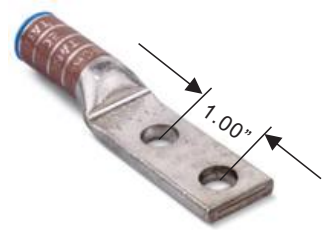
5.10.2 How to Operate the AC terminals: Backup, Smart Port, and Grid Conductors



5.10.3 Aluminum Cable Requirements

When Aluminum cable is selected, use copper to aluminum adapter terminal to avoid direct contact between the copper bar and the aluminum cable. When using aluminum/copper wire rated lug, no additional adapters are required.





Connector for aluminum/copper code conductors

Figure 5.28 Aluminum Wire

NOTE

Direct contact between the copper bar and the aluminum cable will cause electro mechanical corrosion and impair the reliability of the electrical connection

NOTE

Inverter OCPD must be selected in accordance with National Electrical Code® ANSI/NFPA 70 or the Canadian Electrical Code® CSA C22.1. Operating ambient temperature and humidity must be factored and considered when selecting OCPD for the inverter output.

5. Installation

Detailed wiring steps are as follows:

1. Disconnect the AC circuit breaker to ensure it won't accidentally turn on.

2. Strip a certain length from the end of the AC cable insulation sheath. The stripping length can be referred to in the following figure. Place the R-type terminals on both ends and make a crimp connection. The crimped part of the terminals must be insulated with heat shrink tubing or insulating tape.

Max inverter backfeed current to PV array: Current 0A , Continuous 0 ms.

Maximum output fault current on grid port:

Max.peak current: 520A, total duration:132ms.

Current (inrush)on grid port: Max.peak current 50A , Max duration 9.2ms.

3. When connecting to the grid port and the SMARTLOAD/GEN/INV ports, remove the three screws on the cover of the inverter junction box, and then remove the junction box cover.

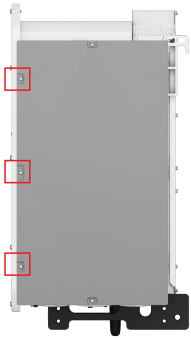


Figure 5.29

NOTE

Recommended Breaker of Backup port and Smart port:

Ue≥400Vac, In>225A, Ics>AC 50KA, Altitude:0-2500m(No derating), temperature: -35℃ 40℃(No Frequency reduction).

Recommended Breaker of Grid port:

Ue≥400Vac, In>315A, Ics>AC 50KA, Altitude:0-2500m(No derating), temperature: -35℃ 40℃(No Frequency reduction).

Recommended External RCD: IΔn≥500mA

5. Installation

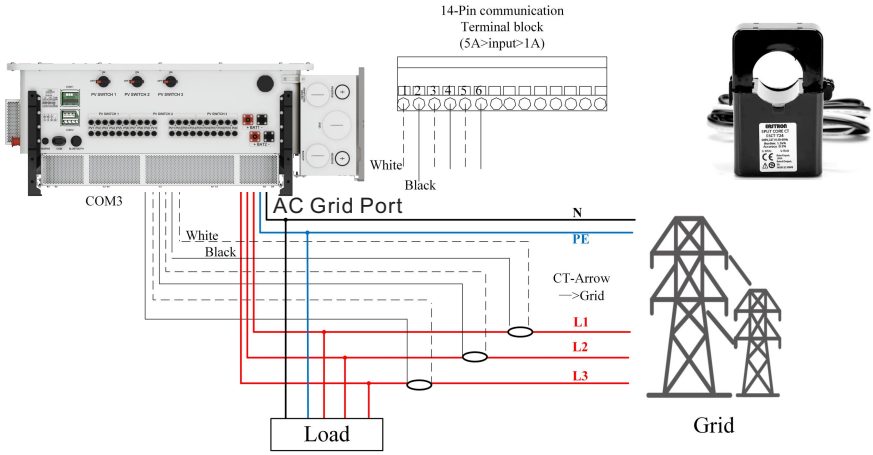


Figure 5.30 CT Installation Location

5. Installation

Load Requirements for the Backup Side and Smart Port

These requirements apply to loads being connected to the backup side of the inverter or to the Smart Port when using it for load shedding.

1. Resistive and RCD loads

a. For single-phase resistive loads, it should not exceed 100% of the single-phase power

b. For RCD loads, it should not exceed 60% of the inverter's rated power.

2. Motor-based load

a. When directly driving a motor load, it is necessary to pay attention to whether the starting impact power does not exceed the power and time limit of the inverter's overload curve.

b. When using a frequency converter or soft-start type motor load, the power should not exceed 60% of the inverter's rated power.

3. RLC load

a. The total load capacity shall not exceed the rated power of the inverter, the peak current at the moment of load switching (peak inrush current) shall not exceed twice the rated current of the inverter, and the minimum power factor shall not be less than 0.8.

b. If a mixed load is adopted, apart from the RLC load, the motor load and the RCD load need to be proportionally reduced.

4. Isolation transformer

a. If starting with a transformer, it is necessary to pay attention to the inrush current not exceeding 1.6 times the rated current and the inrush power not exceeding the overload curve limit requirements. Otherwise, a soft starter needs to be added to the transformer.

5. Installation

5.11 Smart Port: Generator, AC-Coupling, Load Shed

The inverter has a set of terminals called the “Smart Port”. Here you can connect either a generator, an AC-coupled PV system, or a large load such as an AC-EV charger that can be controlled while in backup mode. The smart port input for the 60kW and 30kW 208V model is rated for 72.2A max. The input fo r the 30kW model is 36A.

5.11.1 Smart Port Location

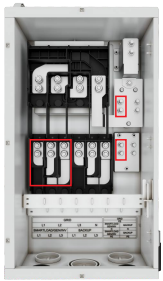


Figure 5.31 Inverter smart ports

5.11.2 Smart Port Wiring

1. Bring the AC cables for the generator, load, or AC-coupled system into the inverter wire box.
2. Strip ½ inch of insulation from the ends of each conductor.
3.Insert a Phillips screwdriver into slot above the smart port terminal. Pull up on the screwdriver until you feel a click, the terminal is now open.
4. Insert the stripped end of each conductor into the correct terminal. Pull down on the screwdriver until you feel another click, the terminal is now closed (locked).
5. Connect a neutral conductor to the neutral bus bar and a ground conductor to the ground bus bar. Use the hex tool to tighten the terminal to between 10 and 12 N.m.
6. Give each cable a gentle tug test to ensure they are not loose.

The wiring diagrams in Figure 5.32 show the three different uses for the smart port.

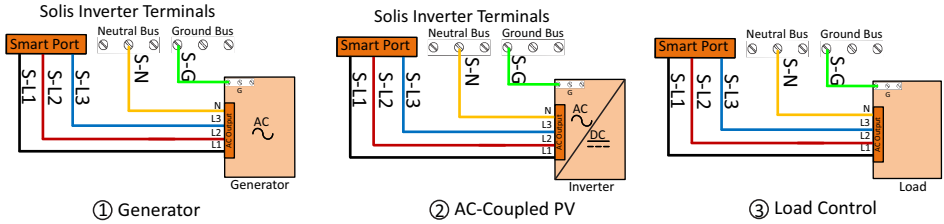


Figure 5.32 Smart Port use case wiring diagrams

NOTE:
Can't connect to the generator when connected to the power grid, and cannot connect to the power grid when connected to the generator.

5. Installation

5.12 Inverter Communication

5.12.1 Communication Ports

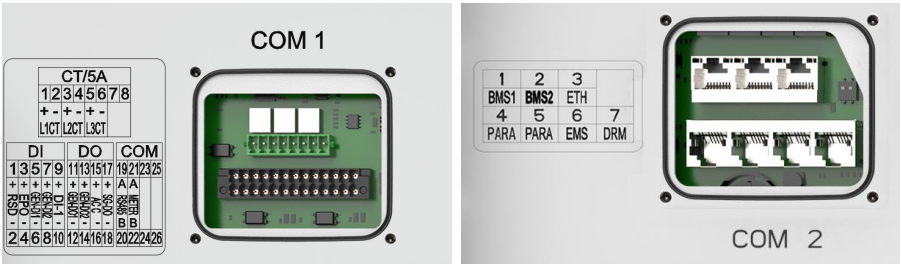


Figure 5.33

Wiring steps for COM1-COM2:

Step 1. Loose the cable gland and remove the watertight caps inside the cable gland based on the number of the cables and keep the unused holes with watertight cap.

Step 2. Lead the cable into the holes in the cable gland.

(COM1: 4-hole fastening rings inside the cable . Hole Diameter: 5.3mm.

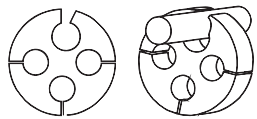
COM2: 10-hole fastening rings inside the cable . Hole Diameter:1.5mm.)

Step 3. Connect the cable to the corresponding terminals inside the wiring box.

Step 4. Reassemble the cable gland and ensure there is no bending or stretching of the cables inside the wiring box.

NOTE:

Please separate the gap with hand and squeeze the cables into the holes from the side openings.



5. Installation

5.12.2 Communication Terminals

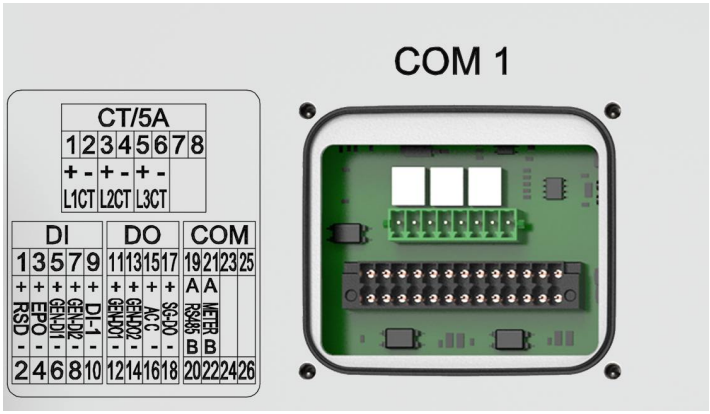


Figure 5.34

Terminal	Type	Description
CT	Push-In Terminal	For CT connection.
RSD		The positive and negative electrodes are short-circuited at the factory, the inverter will stop when disconnected. If customer has the requirement for RSD Function They need to use an external switch or external controller to control it.
EPO		Same logic as RSD function, Customized functions can be accepted from customers, allowing them to choose whether to shut down the system or merely stop PV output on this function.
GEN-DI1		Used for external ATS dry contact signal transmission.
GEN-DI2		Used for external power adoptor(DC12V/5V) dry contact signal transmission.
DI-1		Reserved for customized function.
GEN-DO1		Used for Generator start/stop signal.
GEN-DO2		Used for Generator start/stop signal.
AC C		Used for hybrid inverter control the external breaker to cutoff the PV inverter AC connection with hybrid inverter smart port.
SG-DO		Used for heat pump.
RS485		Used for 3rd party device control.
METER		Used to meter connection.

5. Installation

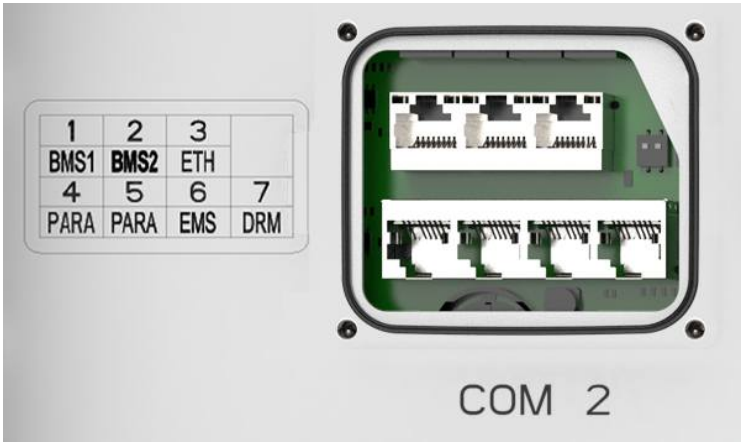


Figure 5.35

Terminal	Type	Description
BMS1	RJ45 Connector	For battery communication (CAN protocol).
BMS2		For battery communication (CAN protocol).
ETH		Ethernet port, support TCP/IP, used for other external communication, the standard Ethernet Port definition 1-TX+,2-TX-,3-RX+,6-RX-.
PARA		For parallel mode connection between inverters.
PARA		For parallel mode connection between inverters.
EMS		For external 3rd party EMS control.
DRM		For DRM function requirement in some regions.
DIP Switch	Switch	If a inverter is set as the first or last inverter in the parallel connection, you need to put all the DIP switch on this inverter to ON state , and the middle machine should be on OFF state.

5.12.3 BMS Terminal Connection

5.12.3.1 With Lithium Battery

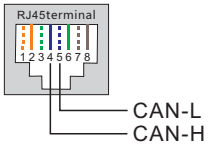
CAN communication is supported between inverter and compatible battery models.
Please lead the CAN cable through the COM1 or COM2 port of the inverter and connect to the BMS terminal with RJ45 connector.

Inverters of this series type support that customers using the batteries with different capacity and with different specification, but Solis recommend that using the batteries with same specification is better for the whole inverter system work excellently.

Figure 5.36

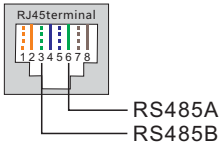
NOTE:

Before connecting CAN cable with the battery, please check whether the communication pin sequence of the inverter and the battery match;
If it does not match, you need to cut off the RJ45 connector at one end of the CAN cable and adjust the pin sequence according to the pin definitions of both inverter and battery.
Pin definition of the inverter BMS Port is following EIA/TIA 568B.
CAN-H on Pin 4: Blue
CAN-L on Pin 5: Blue/White



NOTE:

Before connecting RS485 cable with the battery, please check whether the communication pin sequence of the inverter and the battery match;
If it does not match, you need to cut off the RJ45 connector at one end of the RS485 cable and adjust the pin sequence according to the pin definitions of both inverter and battery.
Pin definition of the inverter BMS Port is following EIA/TIA 568B.
RS485A on Pin 6: Green
RS485B on Pin 3: Green/White



5. Installation

5.12.4 Battery Communication Wiring Table

The BMS1 and BMS2 ports are for communication between the battery and the inverter. The Figure below shows which pins on the inverter are for battery communication: CAN-H, CAN-L, RS485A, and RS485B. A standard ethernet patch cable can be used to connect the battery to the inverter. If the battery has pins instead of an RJ45 port, please cut one end off a standard ethernet patch cable and then connect it to the battery according to the pinout shown in Figure 5.37

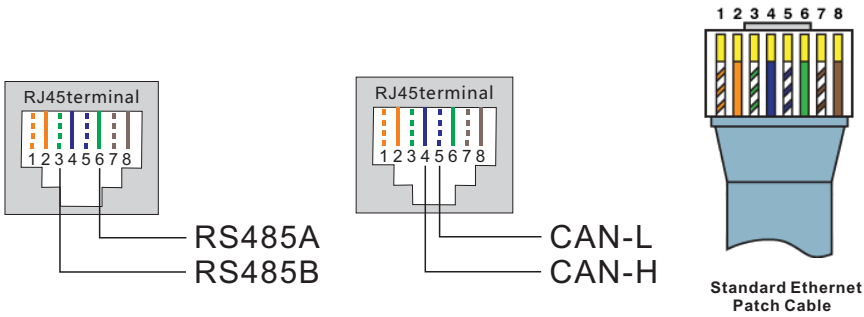


Figure 5.37 Battery Communication CAN/RS485 Wire Colors

IMPORTANT:
Solis cannot guarantee normal operation with any battery that is not on the approved battery list. Please only install batteries from this list.
Installing a battery that is not on the list will void the inverter warranty.

Battery Manual and Battery Firmware
Please be sure to read through the battery manual for proper installation steps. The battery manual should be provided with the battery or it can be downloaded from the battery manufacturers website directly. It is very important to update the firmware of the battery during the installation and commissioning of the system. **Failing to update both the inverter and battery firmware will lead to communication issues** and the alarm codes like CAN_Comm_Fail & No-Battery.

NOTE:
Some alarm codes are being relayed from the battery. These alarms are caused by an issue with the battery itself. The troubleshooting section of this manual explains how to diagnose and treat each alarm. If the alarm says the battery is having a malfunction, please contact the battery manufacturer.

5.12.5 Parallel Inverter Connection (Optional)

Up to 6 units of the inverter can be connected in parallel, if you have demand for 7-10 pcs in parallel mode, you should ask local solis technology support.

Please connect the paralleled inverters by using P-A and P-B terminals.

Standard CAT5 with shielding layers internet cable can be used.

1. ALL inverter MUST be connected to their own HV battery.
2. NOT support two or more inverters connect to the same one battery.

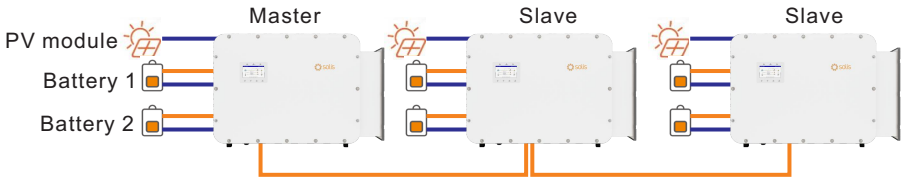


Figure 5.38

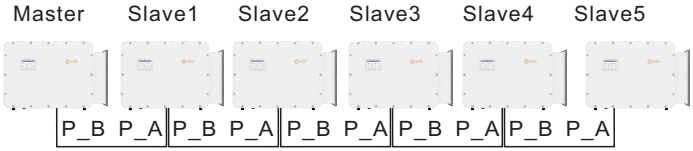


Figure 5.39 Parallel Terminal Connection

NOTE:

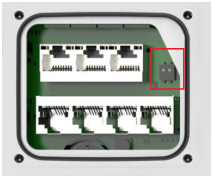
The master is set with an ID of 1, Slave1 should have an ID of 2, Slave2 should have an ID of 3, and so on.

In a parallel system, if the battery number configuration is not one-to-one sufficient, only the slave machine can be left unconnected, while the master machine must be connected to the battery.

And the battery which one has the highest capacity we recommend you connect it to master machine is better for system stability.

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” position, and all the middle machines’ DIP switch should be put to “OFF” position.



5. Installation

5.12.6 Paralleling Guidelines

In order to ensure normal operation and the safety of the equipment, the following rules must be followed when paralleling mulitple inverters on the backup-side.

1. When connecting inverters in parallel, it is mandatory to match their sizes. For example, pair an 60KW inverter with another 60KW inverter. Do not parallel inverters of different sizes on the backup-side.

2. Before parallel connection, verify that both inverters are operating on the same firmware version. The inverters must never be on different versions of firmware.

3. Up to **six** hybrid inverters can be installed together in parallel on the backup side.

4. The energy meter and the data logger only need to be connected to the master. But to update the firmware, each inverter needs to have its own data logger connected to it.

5. All inverters in the system must be connected to the same ground point to eliminate the possibility of a voltage potential existing between inverter grounds.

6. Each inverter must have its own PV strings connected to it, as per the DC input PV specifications of the inverter. It is ok to have some inverters with only battery and no PV.

7. The inverters support batteries with different energy capacity from different brands, but the capacity difference is suggested less than 50%. E.g., The inverter has two battery ports, if one port connect to a 60kWh battery , then the other port connect to battery capacity should be within 30~90kWh;

8. The inverter backup circuit breakers must be connected in a separate isolated load center that is not electrically connected to the grid.

9. The AC bypass switches for all inverters must all be in the same position always.

10. The parallel settings for each inverter must be configured prior to initiating operation.

11. Prior to initiating full system operation it is essential to verify that each inverter operates normally. Set each inverter one-by-one for single operation, ensure there are no alarms during operation, shut it down, and then go to the next inverter.

NOTE:

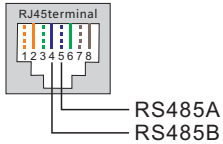
A failure of the main unit will cause the entire system to shut down, but a failure of the slave unit will only cause the inverter to shut down, without affecting the operation of other inverters in the parallel system.

5. Installation

5.12.7 RS485 Port Connection (Optional)

If a 3rd party external device or controller needs to communicate with the inverter, the RS485 port can be used. Communication protocol is supported by Solis inverters.
To acquire latest protocol document, please contact Solis local service team or Solis sales.

NOTE:
Pin definition of the RS485 Port is following EIA/TIA 568B.
RS485A on Pin 5: Blue/White
RS485B on Pin 4: Blue



Third-Party Monitoring with RS485 Modbus

If third-party monitoring is to be installed, connect the third-party gateway to the RS485 port of the inverter. Use pin 4 (blue) for RS485B and pin 5 (blue-white) for RS485A.
The Solis hybrid inverter Modbus map can be downloaded from the Solis website or requested from the Solis service and support team

5. Installation

5.12.8 Generator communication connection(G-S/G-V/ATS/ATS-W)

The GEN-DO1(Pin11,Pin12), GEN-DO2(Pin13,Pin14) are DO ports. You can use this ports to output dry contact signal to generator to control the generator start or stop automatically.

The GEN-DI1 (Pin5, Pin6), GEN-DI2 (Pin7, Pin8) are DI ports, If you have installed generator with ATS device. You can use the this ports connect to ATS or Power Adaptor(12V/5V) to detect the power grid state, if grid tripped, the ATS OR Power Adaptor will send dry contact signal to hybrid inverter.

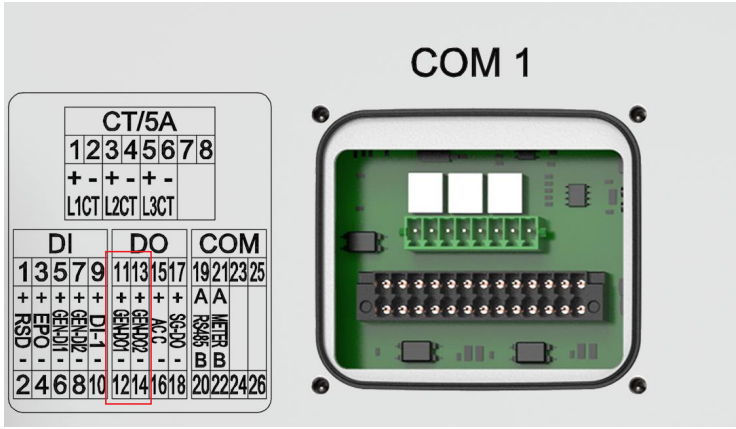


Figure 5.40

3.9.9 EMS port connection

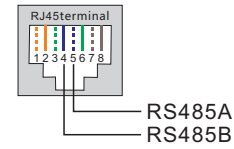
This port supports the RS485_MODBUS communication protocol. It can be used as a communication port between the main inverter and third-party EMS. For the communication protocol documentation, please contact the local Solis service team or Solis sales to obtain the latest version.

NOTE:

Pin definition of the EMS Port is following EIA/TIA 568B.

RS485A on Pin 5: Blue/White

RS485B on Pin 4: Blue



5.12.9 Diesel Generator Wiring

1.The backup PE must be directly connected to the PE copper bar of the power distribution box, rather than the inverter shell.
2.The generator itself needs to be grounded, connected to the electric box, and connected to the inverter generator port.
3. When the generator is working, disconnect the Grid breaker or leakage current protector on the side of the power box immediately.

5. Installation

5.12.10 Generator on Smart port

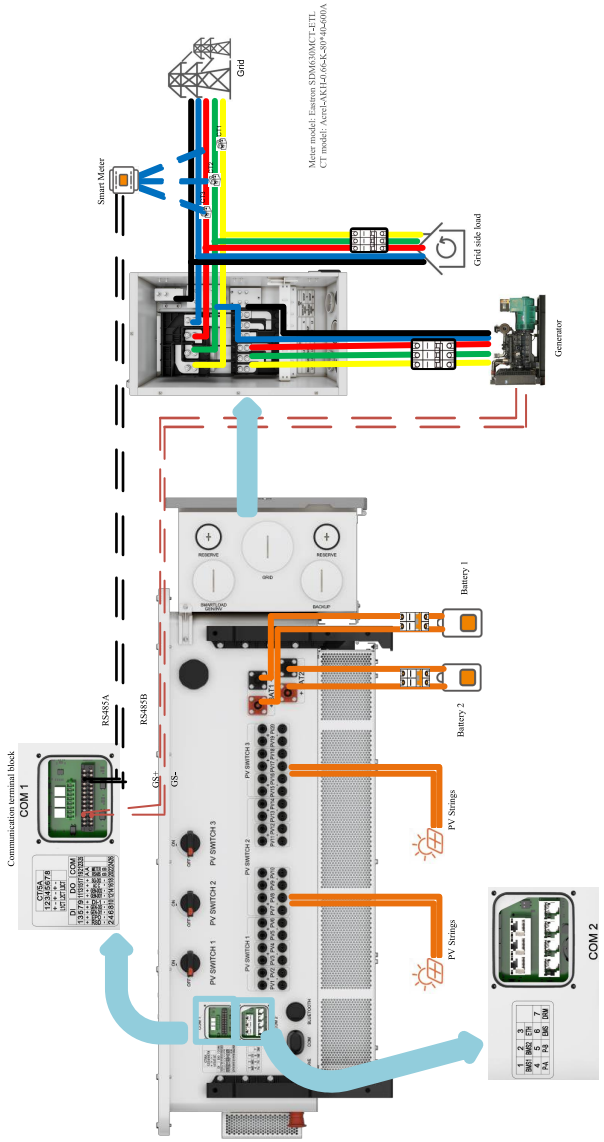


Figure 5.41 Generator on Smart port

5. Installation

5.12.11 Generator on Grid port

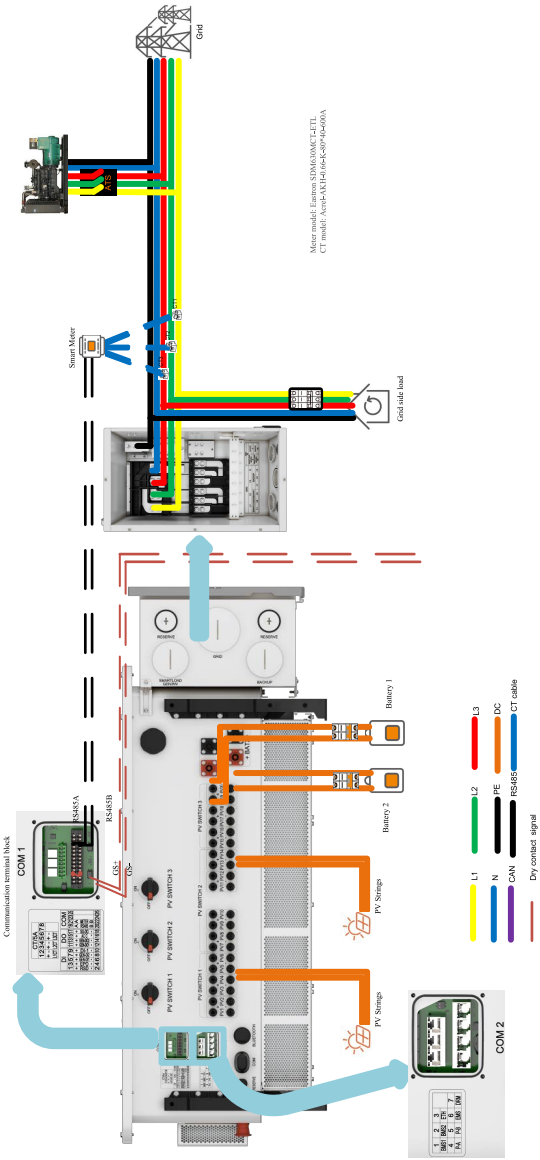


Figure 5.42 Generator on Grid port

5. Installation

5.12.12 Meter wiring

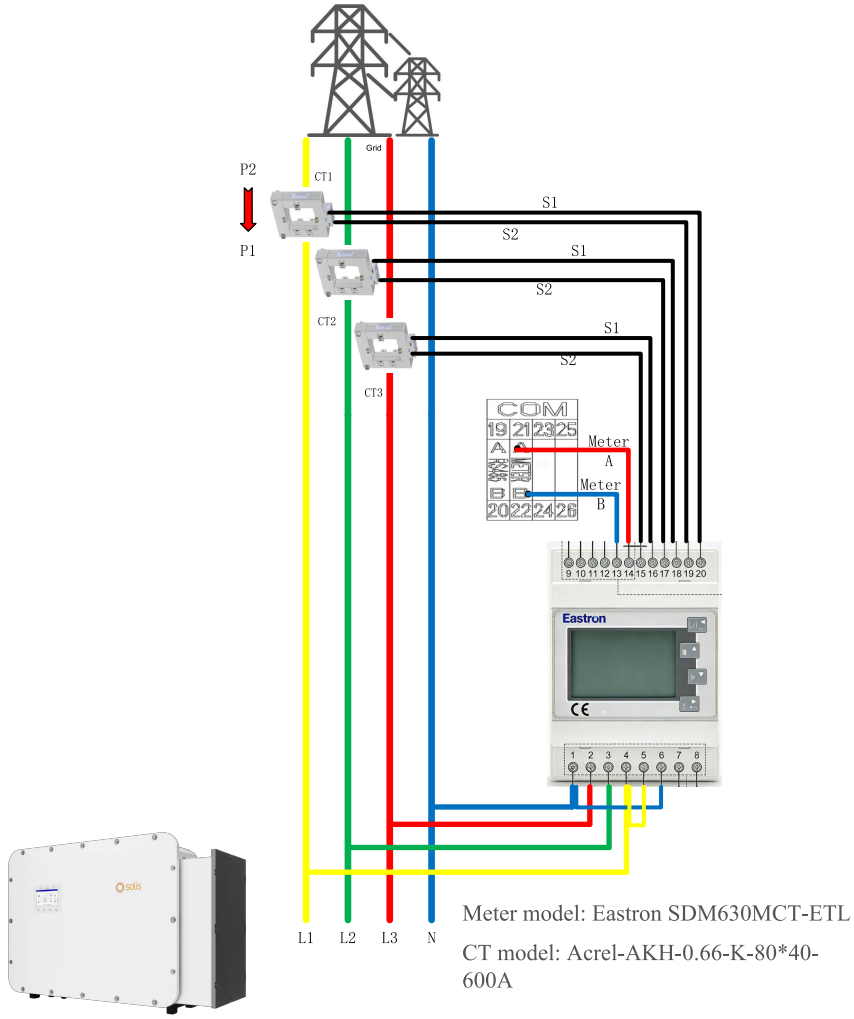


Figure 5.43 Meter wiring

5. Installation

5.12.13 Parallel Wiring

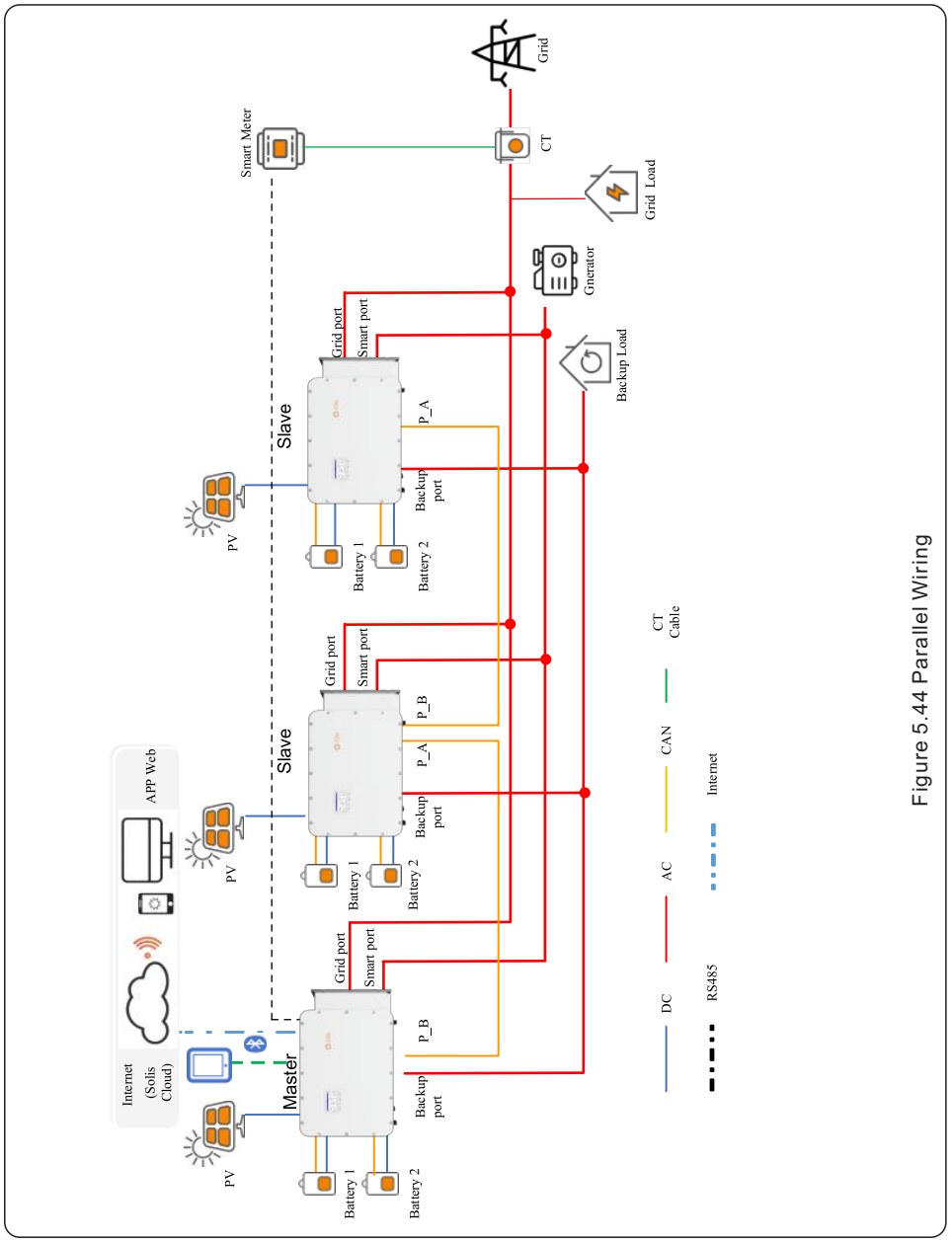


Figure 5.44 Parallel Wiring

6. Commissioning

6.1 Pre-Commissioning

1. Visually inspect each piece of equipment in the system closely.
2. Check all conduit and cable connection points to ensure they are tight.
3. Verify that all system components have adequate space for ventilation.
4. Follow each conductor from end to end. Confirm that they are all terminated in the proper places.
5. Ensure that all warning signs and labels are affixed on the system equipment.
6. Check that the inverter is secured to the wall and is not loose or wobbly.
7. Prepare a multimeter that can do both AC and DC amps.
8. Use the multimeter to measure the PV string voltages in free air. With RSD the voltages will be low.
9. Land the PV strings, turn on the grid-side breaker and the battery. Keep the inverter DC switch turned off. Measure the PV string voltages again. Verify that the polarities and voltages are correct.
Note: if the PV voltages are still low with the PV strings landed and the grid-side breaker turned on, check the rapid shutdown switch on the side of the inverter. Give it a clockwise twist to pop it out.
10. Check the AC voltages coming from the grid. Check the battery DC voltage and verify polarity.
11. Leave the inverter DC switch turned off for now. Only turn it on once you are ready to put the system into normal operation. Leave the battery on and the AC breaker connected to the grid-side on as well.
12. Download the battery app, register an account, and then be sure to update the battery firmware if there is a new version available. This step is very important and skipping it can lead to comms issues.

The next steps will be to install a Solis logger, download the SolisCloud application, register a new account on SolisCloud, and then configure the inverter settings using the SolisCloud app.
After that is all done, the logger will need to be connected to the Wi-Fi and configured using SolisCloud
Note: Installing a Solis logger is optional. Third-party monitoring can be used instead.

6.2 Solis Loggers

6.2.1 Solis Monitoring with Solis Data Loggers

For remote monitoring and control of the inverter using the Solis monitoring portal, a Solis data logger must be installed The logger gets plugged into the port on the side of the inverter shown in the figure below. First, remove the black plastic protective cap from the port by squeezing in both tabs on either side simultaneously while pulling down on the cap. Insert the logger into the port by pressing up evenly on both sides, **do not twist the logger**. The logger port is USB-A and only supports USB versions of Solis data loggers, not the 4-pin versions. The Solis logger can only report to SolisCloud. If a 3d party monitoring platform is to be used, a 3d party gateway must also be used.

6. Commissioning

6.2.2 Compatible Solis Loggers

This inverter comes with an S2-WL-ST, which has both a Wi-Fi and a local area network (LAN) option consisting of an RJ45 port for direct connection to a router. However, the inverter is compatible with other Solis loggers S1-W4G-ST (Wi-Fi with cellular backup) and S5-WIFI-ST (Wi-Fi including 5GHz).

Data Logger Model	Communication Type
S1-W4G-ST (USB)	Wi-Fi (2.4 GHz) Cellular: Sprint, Verizon, T-Mobile
S2-WL-ST (USB)	Wi-Fi (2.4 GHz) Local Area Network (LAN)
S5-WIFI-ST (USB)	Wi-Fi (2.4 GHz and 5 GHz)

S1-W4G-ST Manual

S2-WL-ST Manual

S5-WIFI-ST Manual

Figure 6.1 Compatible Solis Data Loggers

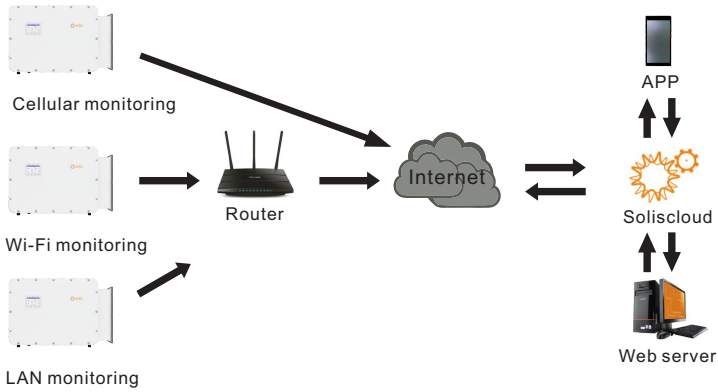


Figure 6.2 Wireless communication function

6.3 SolisCloud

SolisCloud is the monitoring platform where inverters can be monitored remotely. You will need to download the SolisCloud app and then register a new account. Please scan the QR code to pull up the app in the App Store or search “SolisCloud” and then look for the icon shown in the middle of the QR code. There are two account types available: Installer and Owner

Installer: for technicians and anyone that is not the asset owner such as the homeowner where the system is being installed. Installer accounts are for fleet management and are able to remotely control registered plants remotely through SolisCloud.
Owner: for homeowners who typically only have a small number of sites and are only looking to monitor their system(s) and not have any control.

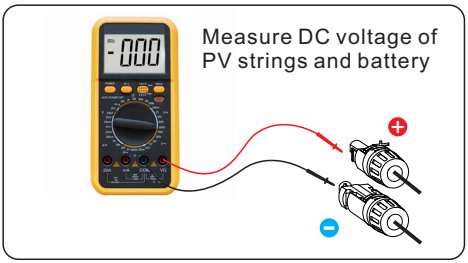
Once the account registration has been completed, log into the SolisCloud app. You will use the app to configure the Wi-Fi settings of the Solis logger and the inverter settings while on-site.

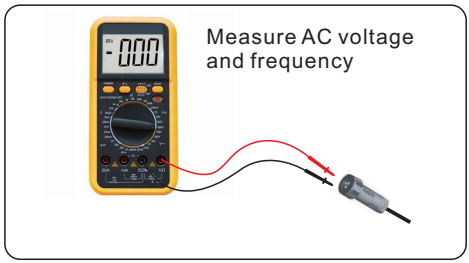
6. Commissioning

6.4 Power ON & OFF Procedures

6.4.1 Power ON Procedure

Step 1: With the DC switch off, energize the PV strings and then measure DC voltage of the PV strings to verify that the voltage and polarity are correct. Turn on the battery and check the battery voltage and polarity as well.





Step 2: Turn on the OCPD for the system and then measure the AC voltages line to line and line to neutral. The backup side of the system will be off until commissioning is complete.Turn the OCPD back off for now.

Step 3: Turn the DC switch on and then the OCPD(AC breaker) for the system.

This inverter can be powered on by PV only, battery only and Grid only.

When the inverter is powered on,the five indicators will be lighted at once.

6.4.2 Power OFF Procedure

Step 1: Turn off the AC breaker or AC disconnect switch to disable AC power to the inverter.

Step 2: Turn off the DC switch of the inverter. Do not turn the DC switch off first.

Step 3: Turn off the battery breaker.

Step 4: Use a multimeter to verify that the battery and AC voltages are 0V.

IMPORTANT:

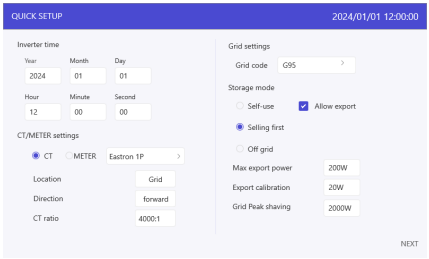
Never turn the DC disconnect switch from on to off position while the inverter is operating. This switch is not a load-break disconnect switch. Not abiding by this will void the inverter warranty.

6. Commissioning

6.5 HMI Commissioning Process

6.5.1 HMI Quick Setting

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.
Inverter Time -> Meter Setting -> Grid Code -> Storage mode -> Battery Model



1. Inverter time:
Set inverter time and date, default follow the phone.

2. CT/Meter setting:

Select the CT or Meter Solis provide Eastron 3 phase meter, it is self-identifiable.

Set installation location: Grid side / Load side / Grid+PV inverter;
CT direction: When CT installed correctly, select “Forward”; when CT installed direction wrong, the sampling current of CT will be reversed when calculating the power, select “Reversal” to correct it.
Set CT ratio: default 120, if the user install their own CT, then need to set the CT ratio manually. If the system connected to Meter, then CT ratio need to be set on Meter.

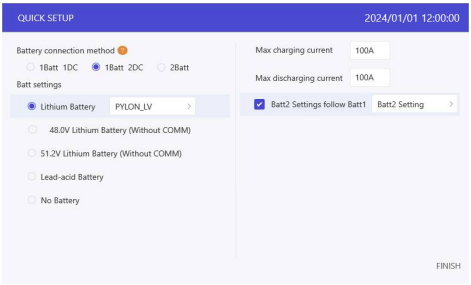
3. Grid code:
Select grid code that meet the local regulations.

4. Storage mode:
ALL modes first priority is to use the available PV power to support loads. The different modes determine what the second priority, or use of the excess PV power, will be.
Self-use / Selling first / Off-grid are exclusive, the user could select only one mode.

5. Battery setting:

Select Battery connection method 1 Batt 1 DC / 1 Batt 2 DC / 2 Batt 1 DC; the connection method please refer to 3.13 Lithium battery wiring.
Select battery brand (if the connected battery is not on the list, please select “General_LiBat_HV”).
Set Max charging/discharging current.
If there are two batteries and share the same settings, please tick the box of “Batt2 Settings follow Batt 1”.

6. Commissioning



Mode	Description
Self-use	PV power flow priority sequence: loads > battery > grid. In this mode, the system stores excess PV power into the battery after the loads are supplied. If “Allow export” turned on, when the battery is charged full, or there is no battery, the excess PV power will be exported(sold)back to the grid. If the system is set to not export any power, then the inverter will curtail the PV power (derate the inverter output power).
Selling first	PV power flow priority sequence: loads > grid > battery. In this mode, the system exports any excess PV power after the loads are supplied. If the export power quota has been met, then the remaining PV power will be stored in the battery. Notice: This mode should not be used if export power set to zero.
Off grid	PV power flow priority sequence: loads > battery. This mode only used when the system are not electrically connected to the grid at all. This mode is like Self-Use Mode, but the PV power will be curtailed if the PV power output is > battery power + load power

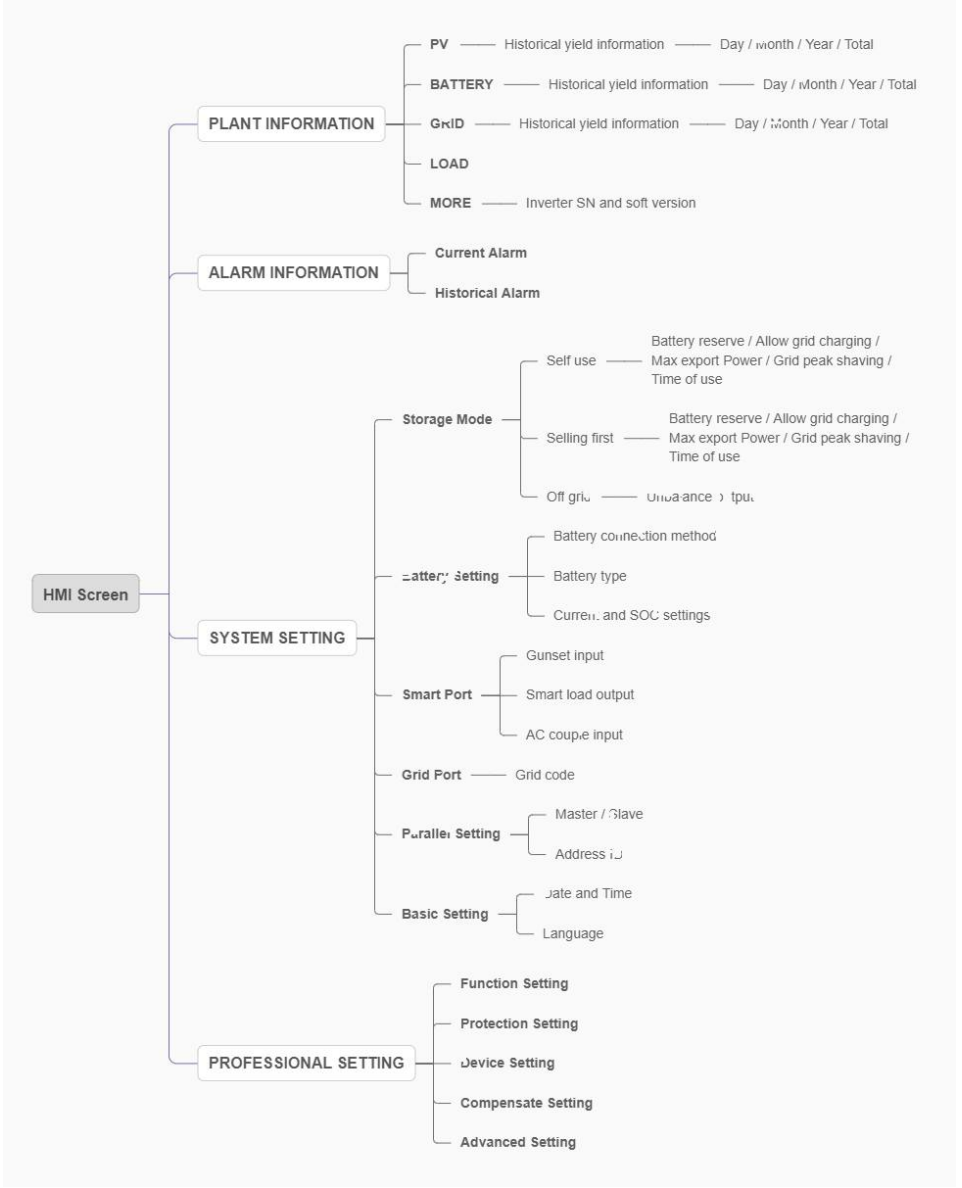
Table 1 Description of modes

Under each mode, user could set other functions based on their requirements.

Settings	Description
Max export power	Default: 1.1 times of rated power. Notice: if feed-in is not allowed, set Max export power to 0.
Export calibration	Range : -500w-500w, default 20w, settable. To compensate the deviation of CT/Meter in practical application.
Grid peak shaving	Default enable, default 2 times of rated power. Limit the power drawn from the grid to prevent from exceeding regulatory requirements or the power line capacity. It works only when the “battery reserve” turned on.

Table 2 Description of mode settings

6. Commissioning

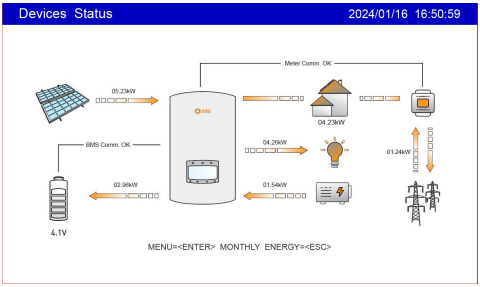


6. Commissioning

6.5.2 Detailed HMI Setting

Step 1: Enter Home page

After quick setting, press “ENTER”, the screen displays the home page.



The screen will be automatically turn off after being idle for a few minutes to save power, click any operation button “ESC”/”UP”/”DOWN”/ “ENTER”) to restart the screen, then press “Enter” into the main operation interface.

Step 2: Enter “SYSTEM SETTING” interface

Press“Down” button, then press “ENTER” into the “SYSTEM SETTING” interface.

6. Commissioning

Step 3: Set "Storage Mode"

Use "UP" or "DOWN" key to select the desired mode, then press "ENTER".

The Mode description please refer to 5.4.1.

Settings	Description
Battery reserve	Range: 5~95%, default: 80%, settable. When battery SOC < set battery reserve SOC, battery will stop discharging.
Allow grid charging	Allow grid charging the battery when it enables. Notice: if "Allow Grid Charging" is turned on, the inverter will use grid power to charge the battery only under two circumstances: The battery drains to the Force Charge SOC. When PV power output can't meet the set current value during the charge periods.
Max export power	Default: 1.1 times of rated power. Notice: if feed-in is not allowed, set Max export power to 0.
Export calibration	Range : -500w-500w, default 20w, settable. To compensate the deviation of CT/Meter in practical application.
Grid peak shaving	Default enable, default 2 times of rated power. Limit the power drawn from the grid to prevent from exceeding regulatory requirements or the power line capacity. It works only when the "battery reserve" turned on.

Table 3 Description of storage mode settings

NOTE:

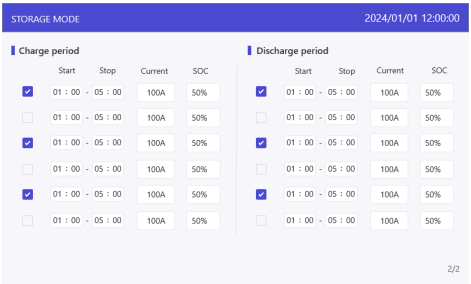
The grid import limit value must be greater than the load that is to be supported. This ensures that the load will operate normally.

6. Commissioning

Step 4: Set "Time of use" under each mode (Skip this step if no need)

Time of Use is for manual control of the battery charging/discharging. It is for customizing when the battery is allowed to charge and discharge power and at what rate, established by a current(amperage)setting.

1. Charge period: battery charges with set current value until the charging cut-off voltage (settable), checking the box to control whether enable this charging period.
2. Discharge period: battery discharges with set current value until the discharging cut-off voltage (settable), checking the box to control whether enable this discharging period.

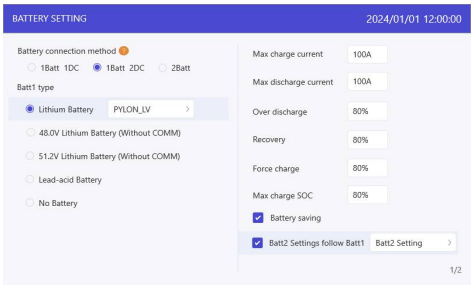


NOTE:

The set current value is the maximum current for charging/discharging the battery. However, the actual charging and discharging current may not reach this value due to the influence of other factors, such as the max. charging/discharging power limitation of the inverter, the battery BMS, etc.

6. Commissioning

Step 5: Set "Battery Setting"



Settings	Description
Max charge current	Max charge current, settable.
Max discharge current	Max discharge current, settable.
Over discharge	Range: 5~40%, default 20%, when battery SOC < over discharge, it will stop discharging.
Recovery	Range: set Over discharge value +1% ~ set Over discharge value +20%; when battery SOC > Recovery SOC, it will start charging, reserve the return difference value to avoid the battery repeatedly cross jump between charging and discharging.
Force charge	Range: set Over discharge value +1% ~ set Over discharge value +20%; when battery SOC > Recovery SOC, it will start charging, reserve the return difference value to avoid the battery repeatedly cross jump between charging and discharging.
Max charge SOC	Charge cut-off SOC, battery stops charging when reach the Max. Charge SOC.

Table 4 Description of battery mode settings

NOTICE:

Force charge SOC < Over discharge SOC < Recovery SOC, otherwise the setting might be error.

6. Commissioning

Step 6: Set “Grid Port”

(Skip this step if grid code is already set in quick setting)

Select grid code that meet the local regulations.

Three level of Over-voltage / under-voltage / Over-frequency / under-frequency are default based on grid code, there is no need to set the parameters in manual.

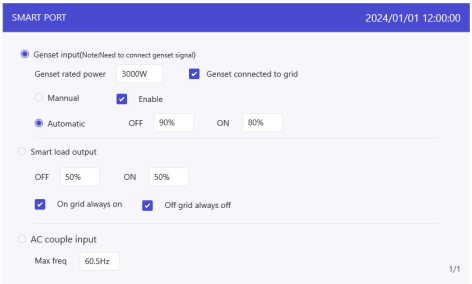
Step 7: Set “Smart Port”

(Skip this step if the system is not connected to generators)

When it is connected to Generator, select “Gunset input”;

When it is connected to smart load like heat pump select “Smart load output”

When it is connected to Grid-tied inverter select “AC coupled”



Genset

The user need to input the “Genset rated power” by manual.

OFF: Generator stops charging SOC, settable, range:35~100%;

ON: Generator start charging SOC; settable, range:1~95%;

AC coupled:

OFF: Grid-tied inverter stops charging SOC, settable, range:35~100%;

ON: Grid-tied inverter start charging SOC; settable, range:1~95%;

6. Commissioning

Step 8: Set parallel system

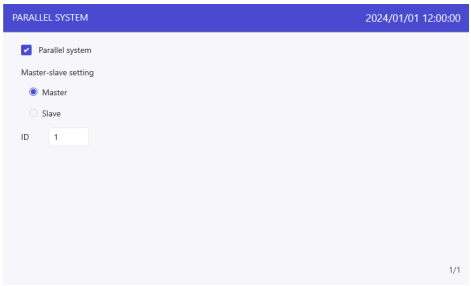
Set Master and Slave machine,

Set Master ID as: 1

Slave machine ID as: 2

.Slave machine ID as: 3

..... and so on.

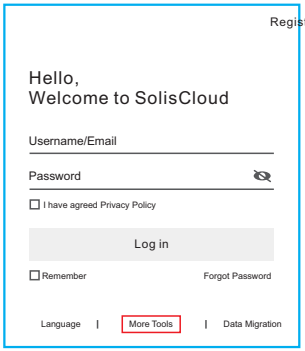


6. Commissioning

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)