SolaX Grid Support Mode

User Manual

Version 2.0

www.solaxpower.com

eManual in the QR code or at
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About This Manual

Scope of Validity

This manual is an individual part of A1-Hybrid Series inverter. It describes the mechanical installation, electrical connection, and App setting of Grid Support mode. Please read it carefully before operating.

The Grid Support Configuration utilizes the accessories in the Grid Support Kit to allow the A1-Hybrid inverter to operate without the backup interface (BI). The primary component is the meter in an outdoor rated enclosure to monitor the home grid interconnect point. Follow the instructions below to complete battery and inverter installation and configure an external meter for power consumption monitoring.

Target Group

The installation, maintenance and grid-related setting can only be performed by qualified personnel who

- Are licensed and/or satisfy state and local jurisdiction regulations.
- Have good knowledge of this manual and other related documents.

Conventions

The symbols that may be found in this manual are defined as follows.

Symbol	Description
DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION!	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE!	Provides tips for the optimal operation of the product.

Change History

Version 02 (2025-04-15)

Added the contact information

Version 01 (2024-11-26)

Updated "2 Packing Lists" (Updated the packing list of inverter; Added the packing list of battery)

Updated "3 Preparation before Installation" (Added the introduction of preparation before installation)

Updated "4 Mechanical Installation" and "5 Electrical Connection" (Added the installation and wiring of the inverter and battery)

Updated "6 Operation on SolaXCloud App" (Updated the screenshots of SolaXCloud App operation)

Modified SolaX logo and address information

Version 00 (2023-06-30)

Initial release

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1 Introduction

The Grid Support Configuration utilizes the accessories in the Grid Support Kit to allow the A1-Hybrid inverter to operate without the BI. The primary component is the meter in an outdoor rated enclosure to monitor the home grid interconnect point. Follow the instructions below to complete battery and inverter installation and configure an external meter for power consumption monitoring.

2 Packing Lists

2.1 Packing list of SolaX Grid Support Kit

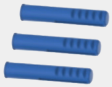
A

Mounting template x1

B

RS485 terminal x1

C



Expansion bolt x3

D

Self-tapping screw x3

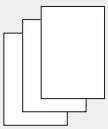
E

CT x2

F

Meter box x1

G



Document x1

2.2 Packing List of Inverter

Inverter

Metal cover

Bracket

A

8-pin female terminal block with terminating resistor

B

Grounding terminal

C D

M5 x L10 screw
10 AWG ferrules

E

Fixing plate of cover

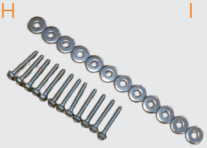
F

Cable protective guard

G

PE cable

H I

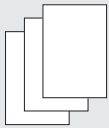


Self-tapping screw
Washer

J

Expansion set

K



Document

L M

M4 x L10 screw
8 AWG ferrules

N

Circuit breaker
(optional)

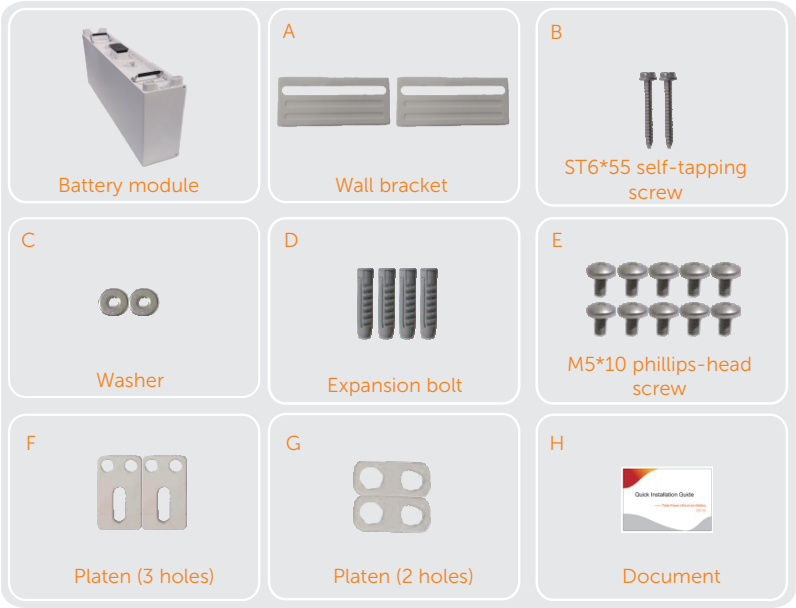
Communication
Dongle

Table 2-1 Packing list of inverter

Item	Name	Quantity	Description
/	Inverter	1 pc	Product
/	Metal cover	1 pc	Protect the inverter
/	Bracket	1 pc	Support the inverter
A	8-pin female terminal block with terminating resistor	1 pc	Additional 8-pin female terminal block with terminating resistor
B	Grounding terminal	5 pcs	For grounding
C	M5×L10 screw	10 pcs	Fix the cover, cable protective guard and cover fixing plate
D	10 AWG ferrules	6 pcs	For PV cable
E	Fixing plate of cover	2 pcs	Connect the cover and the bracket
F	Cable protective guard	1 pc	Protect the cable between inverter and BMS
G	PE cable	1 pc	Grounding conductor between inverter and BMS
H	Self-tapping screw	12 pcs	Fix the bracket
I	Washer	12 pcs	Fix the bracket
J	Expansion set	12 pcs	Fix the bracket
K	Document	/	Guide the installation
L	M4×L10 screw	2 pcs	Fix the fixing plate between inverter bracket and BMS
M	8 AWG ferrules	3 pcs	For AC cable
N	Circuit breaker (optional)	1 pc	Mount it on the BI
/	Communication Dongle	1 pc	For communication

2.3 Packing list of Battery

Battery Module (TP-HS50)



Note: The above-mentioned accessories are only for one battery module.

Table 2-2 Packing list of TP-HS50

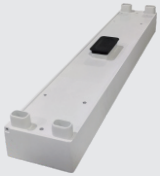
Item	Name	Quantity	Description
/	Battery module	1 pc	Product
A	Wall bracket	2 pcs	Support battery module to be mounted on the wall
B	ST6*55 self-tapping screw	2 pcs	Fix the bracket
C	Washer	2 pcs	Fix the bracket
D	Expansion bolt	4 pcs	Fix the bracket
E	M5*10 phillips-head screw	10 pcs	Fix the fixing plate
F	Platen (3 holes)	2 pcs	Connect two battery modules with bracket
G	Platen (2 holes)	2 pcs	Connect two battery modules
H	Document	/	Guide the installation

All Accessories Required for Two Installation Modes (T50 Battery)

Table 2-3 Packing list of accessories required

Item	Name	Quantity	Description
A	M8*85 expansion screw	6 pcs	Fix the base support in case of concrete wall
B	M5*8 countersunk screw	4 pcs	Fix the transverse plate with base support
C	M5*20 countersunk screw	6 pcs	Fix the two sides of base
D	M8*88 self-tapping screw	6 pcs	Fix the base support in case of wooden wall
E	Washer	6 pcs	Fix the base support in case of wooden wall
F	Adjustment screw	4 pcs	Adjust the base to be leveled
/	Transverse plate	1 pc	Support the base
/	Base support	2 pcs	Support the base

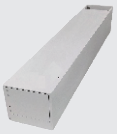
Base for TP-HS50 Battery



Base ×1

BMS (TBMS-MCS60060)

Hereinafter referred to as “MCS60060"



BMS ×1

Document

3 Preparation before Installation

3.1 Installation Precaution

WARNING!

- Read all of these instructions, cautions, and warnings for the A1-HYB-G2 series inverter.

WARNING!

- Installation and commissioning must be performed by a licensed electrician in accordance with local, state and National Electrical Code ANSI/NFPA 70 requirements.

WARNING!

- The installation and wiring connection methods of this inverter in the U.S. must comply with all US National Electric Code and local requirements.

CAUTION!

- Personal injury and machine damage may be caused by improper movement of the inverter.
- Please be strictly comply with the instructions of this manual when moving the install the inverter.

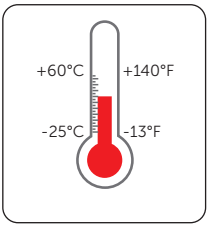
3.2 Selection of Installation Location

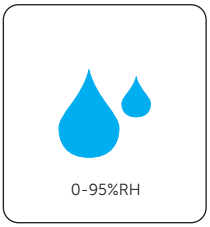
The installation location selected for the inverter is quite critical in the aspect of the guarantee of machine safety, service life and performance.

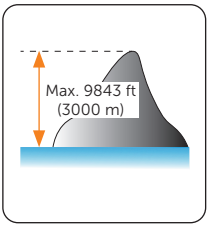
- A1-HYB-G2 series has the NEMA 4X ingress protection, which allows it to be installed outside the door.
- The installation position shall be convenient for wiring connection, operation and maintenance.

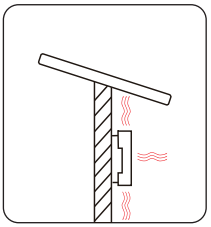
3.2.1 Environment Requirement

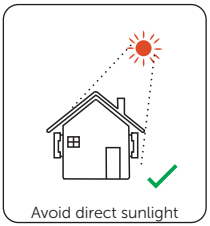
- The ambient temperature in the range of –13°F (-25°C) to +140°F (+60°C).
- The relative humidity shall be between 0-95%RH.
- Not higher than altitude of about 9843 ft (3000 m) above sea level.
- Not in environment of precipitation.
- Be sure the ventilation is good enough.
- Flatness meets local building standards.
- Do not install the inverter in areas with flammable, explosive and corrosive materials or near antennas.
- Avoid direct sunlight, rain exposure, snow laying up during installing and operating.











NOTICE!

- For outdoor installation, precautions against direct sunlight, rain exposure and snow accumulation are recommended.
- Exposure to direct sunlight raises the temperature inside the device. This temperature rise poses no safety risks, but may impact the device performance.

3.2.2 Carrier Requirement

The wall or stand hanging the inverter should meet conditions below:

- Wooden wall with studs spaced at 12, 16, 20, 24, 28 and 32 inch.
- Solid brick / concrete, or strength equivalent mounting surface.
- Steel material of sufficient thickness.

Inverter must be supported or strengthened if the strength of wall/stand isn't enough. (such as the wall covered by thick layer of decoration)

3.2.3 Angle Requirement

Install the inverter at a maximum back tilt of 5 degrees and avoid forward tilted, excessive backward tilted, side tilted or upside down.

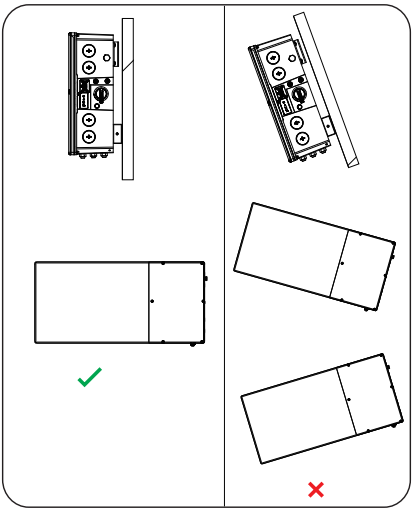


Figure 3-1 Angle requirement

3.2.4 Clearance Requirement

To guarantee proper heat dissipation and ease of installation, the minimum space around the inverter must meet the standards indicated below.

NOTICE!
• The height above the ground marked below is recommended assuming that four BATs are installed with floor-mounting.

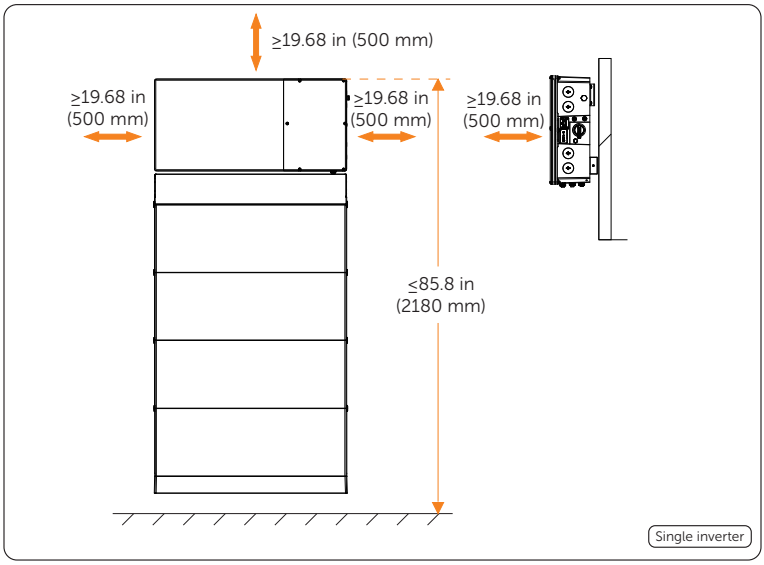


Figure 3-2 Clearance requirement for single inverter

For installations with multiple inverters, make sure to leave a minimum space of 19.68 inch (500 mm) between each inverter. In areas with high ambient temperatures, increase the clearances between the inverters and provide adequate fresh air ventilation if feasible.

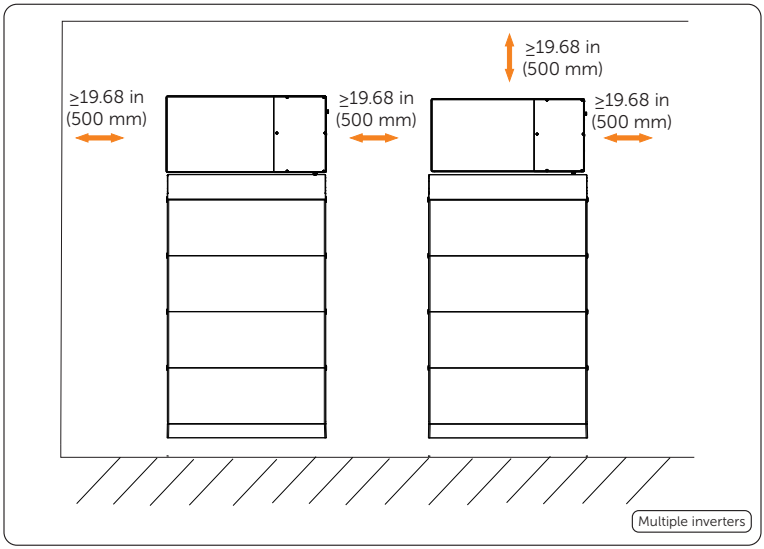
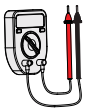


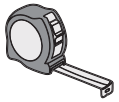
Figure 3-3 Clearance requirement for multiple inverters

3.3 Tools Preparation

Installation tools include but are not limited to the following recommended ones. If necessary, use other auxiliary tools on site. Please note that the tools used must comply with local regulations.


Hammer drill
(drill bit: Ø4 mm / Ø10 mm / Ø12 mm)

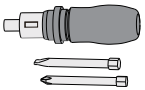

Multimeter
(≥ 1100 V DC)

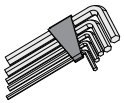

Measuring tape


Utility knife


Marker

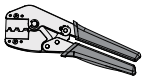

Spirit level

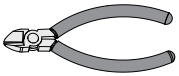

Torque screwdriver
(Flat-head: M2)
(Phillips head: M3/M4/M5)

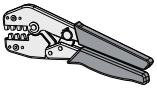

Allen key
(including M5)


Wire stripper

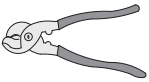

Crimping tool for RJ45

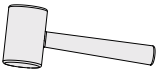

Crimping tool for
PV terminals

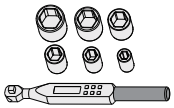

Diagonal pliers

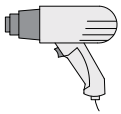

Crimping tool


Crimping tool for ferrules


Wire cutter


Rubber mallet


Torque wrench
(including 16 mm wrench)


Heat gun

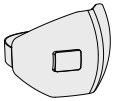

Heat shrink tubing
(Ø6 mm)


Electric screwdriver


Safety gloves


Safety boots


Safety goggles


Anti-dust mask

4 Mechanical Installation

4.1 Overview of Meter Box and Mounting Template

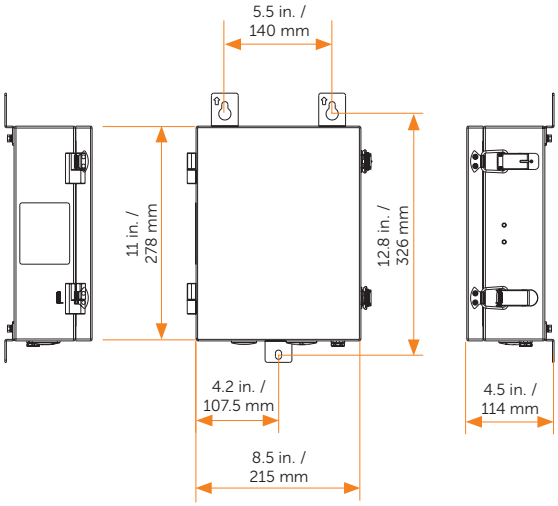


Figure 4-4 Dimensions of meter box

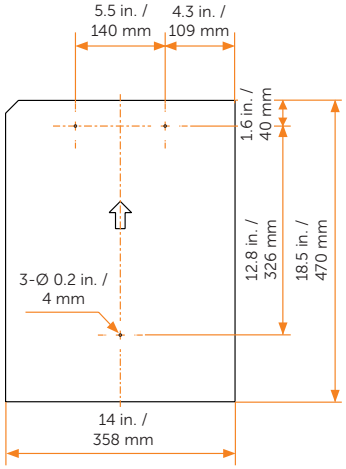


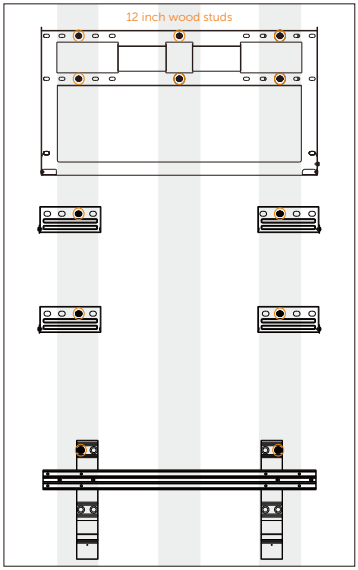
Figure 4-5 Dimensions of mounting template

4.2 Anchoring Details of Bracket

Refer to these anchoring details when mounting the A1-HYB-G2 inverter and battery onto the provided mounting brackets (assuming four BATs are installed).

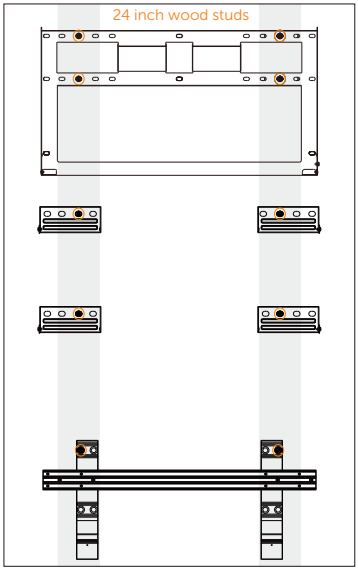
Wood Studs (spaced at 12 inches)

If anchoring directly into wood studs, use at least 8 screws with washers respectively for inverter and battery, of sufficient length into the studs.



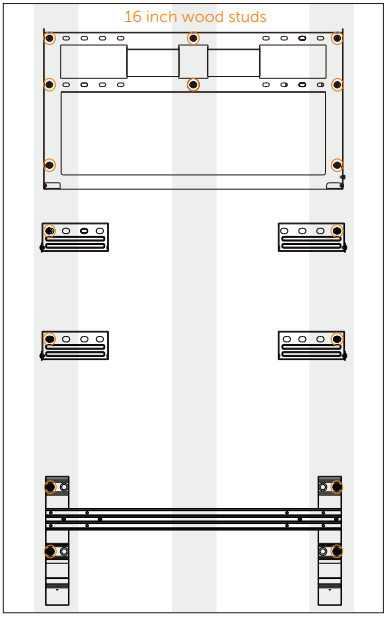
Wood Studs (spaced at 24 inches)

If anchoring directly into wood studs, use at least 8 screws with washers respectively for inverter and battery, of sufficient length into the studs.



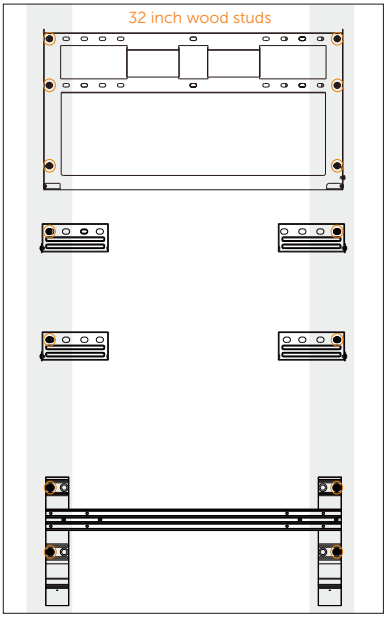
Wood Studs (spaced at 16 inches)

If anchoring directly into wood studs, use at least 8 screws with washers respectively for inverter and battery, of sufficient length into the studs.



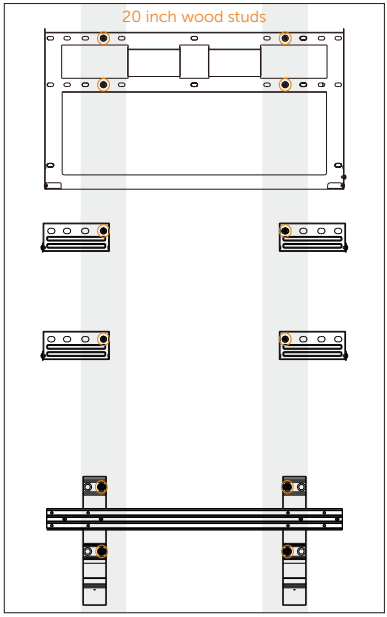
Wood Studs (spaced at 32 inches)

If anchoring directly into wood studs, use at least 8 screws with washers respectively for inverter and battery, of sufficient length into the studs.



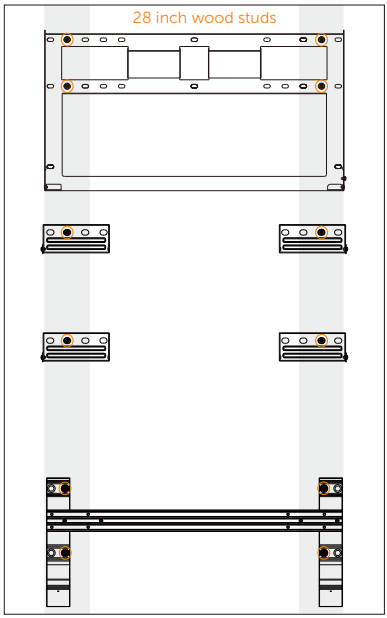
Wood Studs (spaced at 20 inches)

If anchoring directly into wood studs, use at least 8 screws with washers respectively for inverter and battery, of sufficient length into the studs.



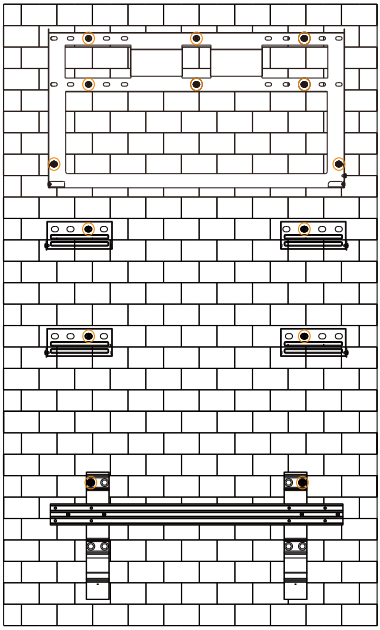
Wood Studs (spaced at 28 inches)

If anchoring directly into wood studs, use at least 8 screws with washers respectively for inverter and battery, of sufficient length into the studs.



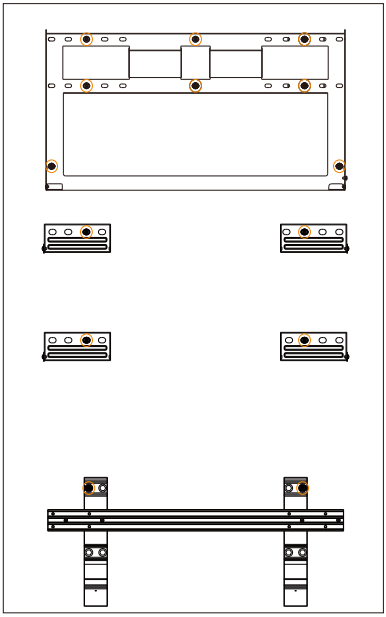
Concrete or Masonry

If anchoring to concrete or masonry wall, use 8 screws with washers respectively for inverter and battery and make sure the screws are at least 1.49 in (38 mm) away from the edge of bricks or blocks. Punching holes spaced at 24 inch is recommended.



Steel material of sufficient thickness

If anchoring to steel material, use 8 screws with washers respectively for inverter and battery. Punching holes spaced at 24 inch is recommended.



4.3 Installation Procedures

4.3.1 Mounting the Inverter and Battery

NOTICE!

- The mounting steps in the followings will take Scheme "inverter+battery" mounting on the wooden wall spaced at 16 inch as an example.

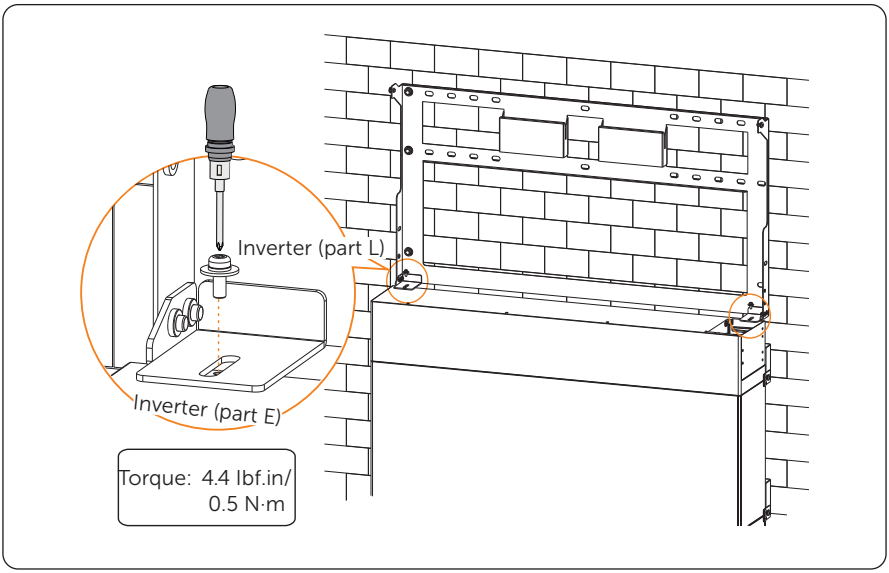
NOTICE!

- Before mounting the inverter, the mechanical installation of the whole battery must be completed, please refer to "T-BAT-SYS-HV-5.0 User Manual" by scanning the QR code.

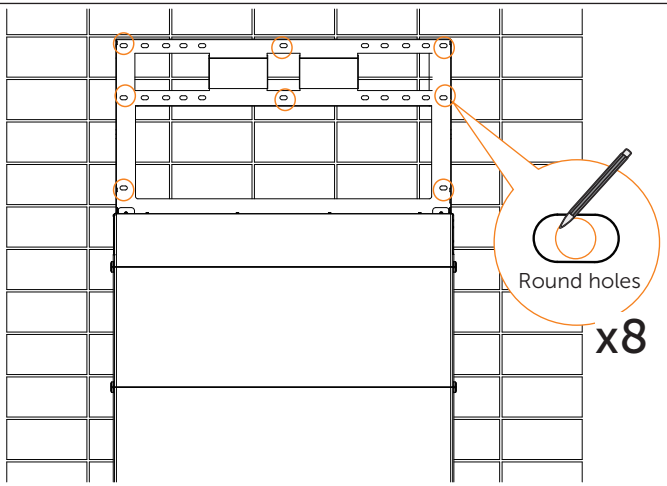
Mounting the inverter

Step 1: Two M4 holes are reserved on the BMS for fixing the bracket of the inverter.

- Screw in M4 screws [Inverter (part L)] through the fixing plate [Inverter (part E)] to pre-fix the bracket on the BMS, but be sure not to tighten.
- Hold the bracket firmly to the wall surface.
- Tighten the M4 screws to fix the bracket on the BMS.



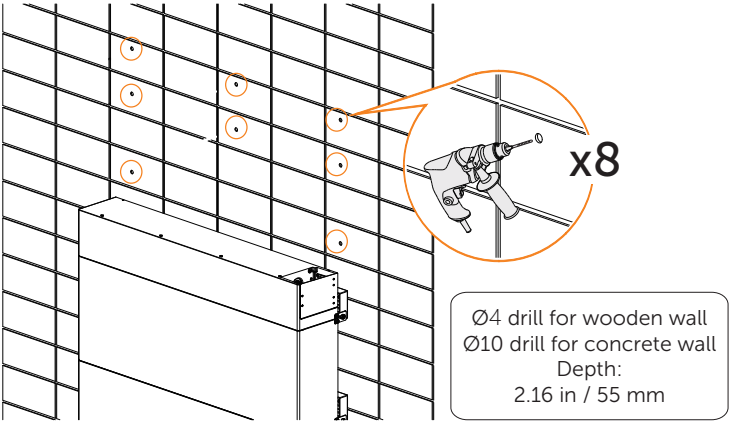
Step 2: Use the bracket as the template to mark the screw hole location on the wall.



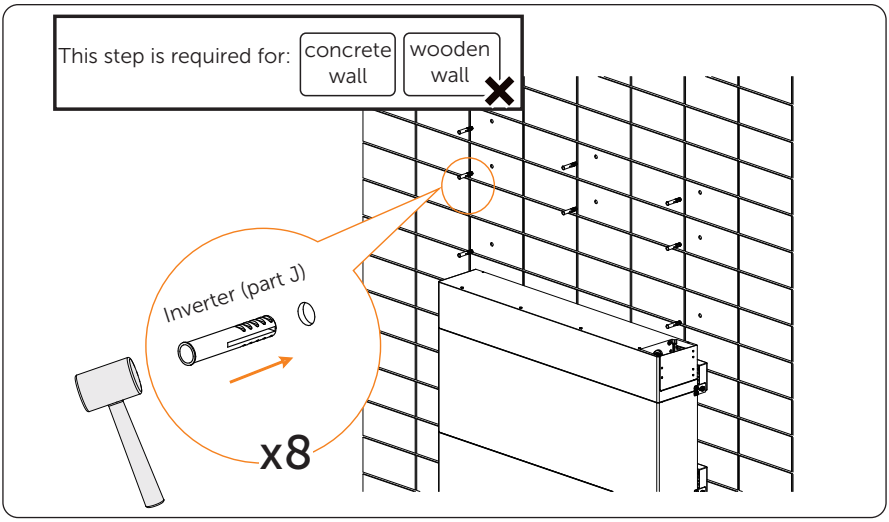
Step 3: Unscrew the two M4 screws to disassemble the bracket. Drill holes with power drill, and make sure the holes are deep enough (2.16 in / 55 mm) to support the inverter.

NOTICE!

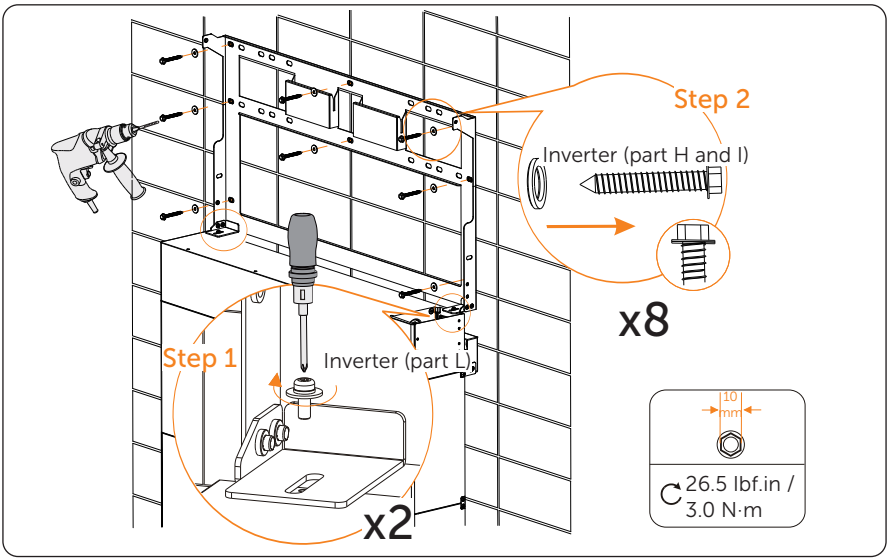
- The figure below is only used for showing the depth and location of holes. Make sure the holes are in the center of each stud and keep at least 1.49 in / 38 mm away from the edge of concrete bricks or studs before marking holes.



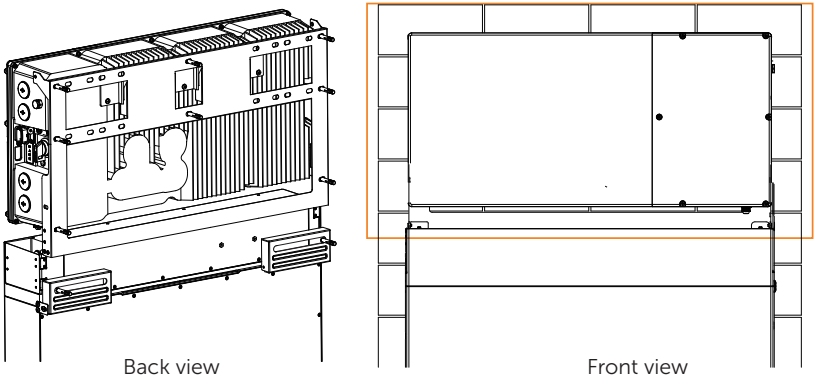
Step 4: Insert the expansion tube [Inverter (part J)] into the hole and use rubber hammer to knock the expansion tube into the wall. (It can be ignored in case of wooden wall.)



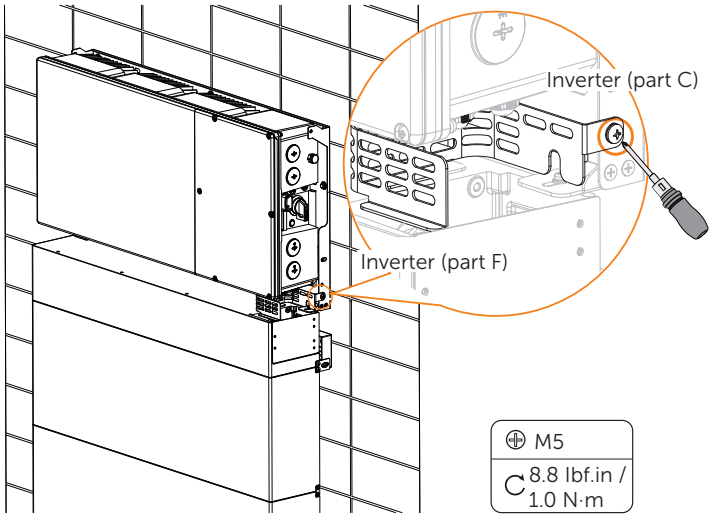
Step 5: Align the bracket over the holes and re-fix the bracket on the BMS with screws [Inverter (part L)]. And set the tapping screw [Inverter (part H)] through the washer [Inverter (part I)] and secure the bracket with tapping screws. Please hold the bracket firmly to the wall surface before fixing it.



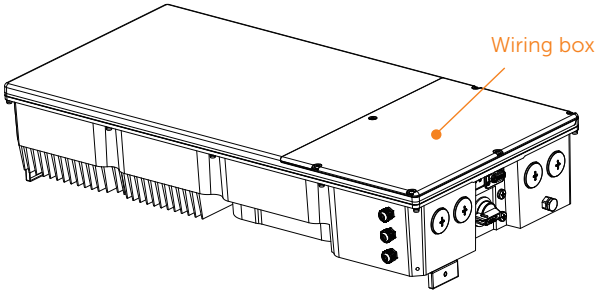
Step 6: Place the inverter to be seated on the corresponding position of the bracket. As A1-HYB-G2 series inverters are heavy, weigh 75 lbs / 34 Kg. They should be lifted up by two persons and placed carefully onto the bracket. Then adjust the inverter to be centered on the whole system.



Step 7: Place the protective guard [Inverter (part F)] on the correct position of battery's BMS prior to the wiring connection between inverter and battery and fix it with the inverter bracket with M5 screws [Inverter (part C)].



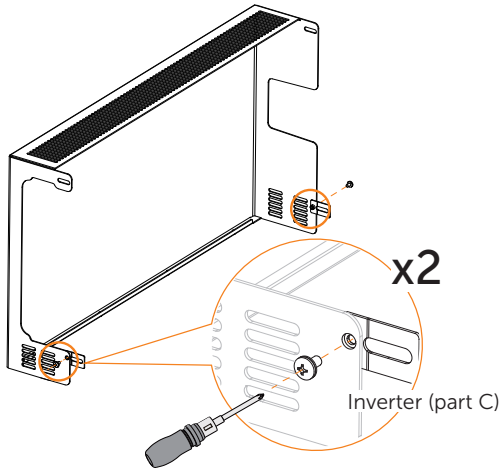
Open the wiring box cover to complete all the wiring connection.

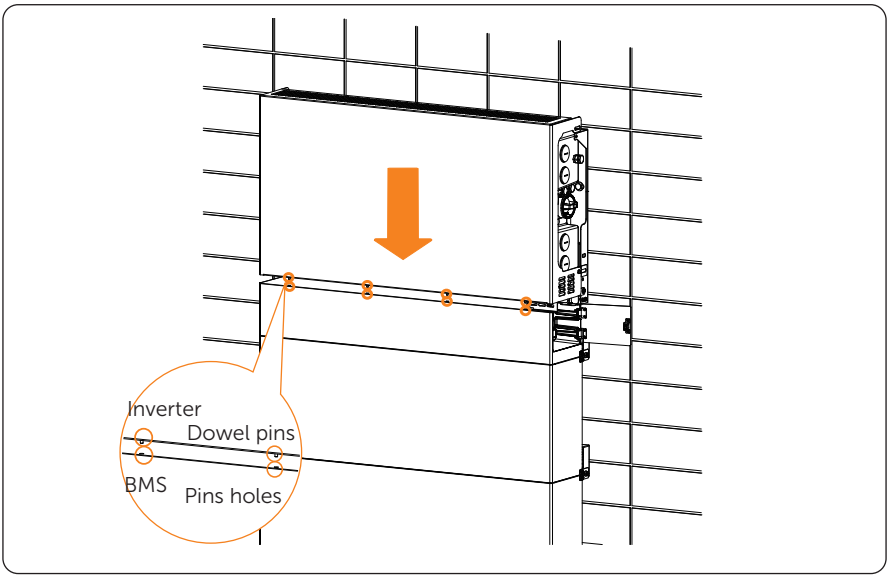


NOTICE!

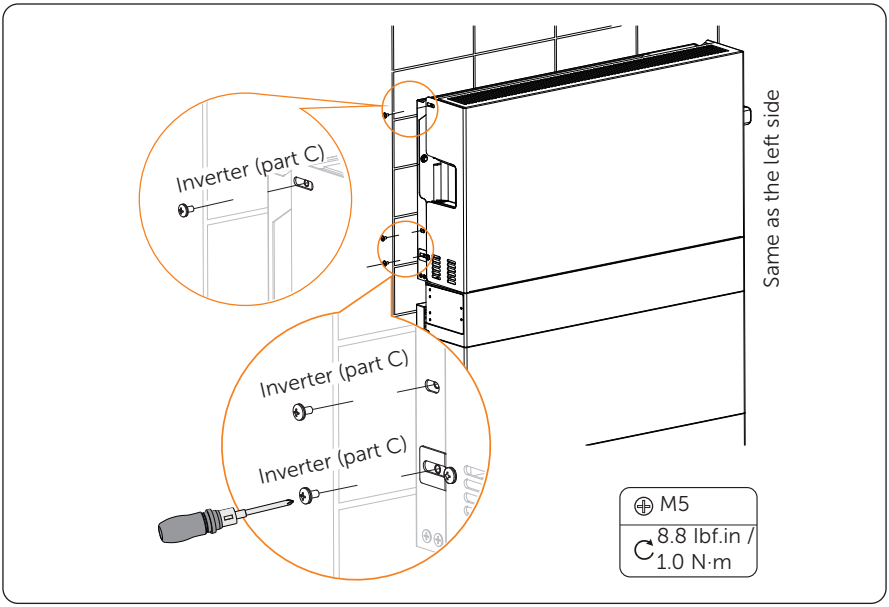
- For detailed wiring connection, please refer to "5.1 Wiring Connection on the Inverter".

Step 8: Pre-mount the fixing plate with scews [Inverter (part C)] on the two sides of metal cover and mount the metal cover on the inverter. Please make sure the four dowel pins are inserted into the holes of BMS and adjust the whole system (inverter and battery) to be leveled.





Step 9: Fix the metal cover with six M5 screws [Inverter (part C)].



4.3.2 Mounting the Meter Box

Step 1: Use the mounting template [Grid Support Kit (part A)] to locate the holes on the wall.

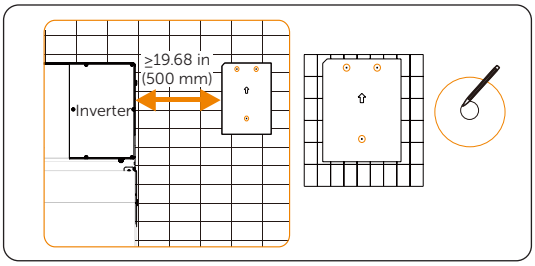


Figure 4-6 Marking the holes

Step 2: Drill holes with power drill, and make sure the holes are deep enough (2.16 in. / 55 mm) to support the meter.

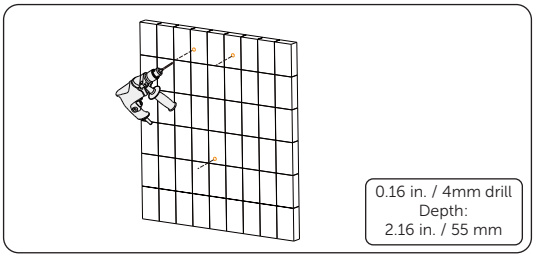


Figure 4-7 Drilling holes

NOTICE!

- For solid concrete wall, please use 0.39 in. / 10 mm drill. Depth: 2.16 in. / 55 mm.

Step 3: Insert the expansion bolt [Grid Support Kit (part C)] into the hole and use rubber hammer to knock the expansion bolt into the wall. (The step is not required for wooden wall.)

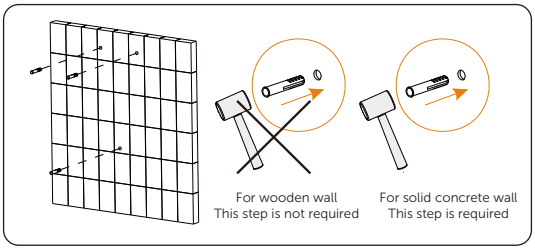


Figure 4-8 Inserting expansion holes

Step 4: Set the upper two tapping screws (A and B) [Grid Support Kit (part D)] through the washer and keep a 0.2-0.3 inch distance.

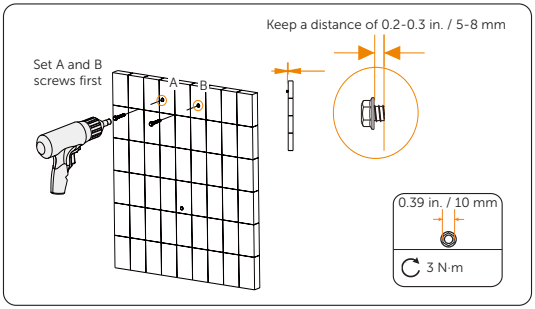


Figure 4-9 Setting screws

Step 5: Place the meter box [Grid Support Kit (part F)] to be seated on the corresponding position. And set the last tapping screw to secure the meter.

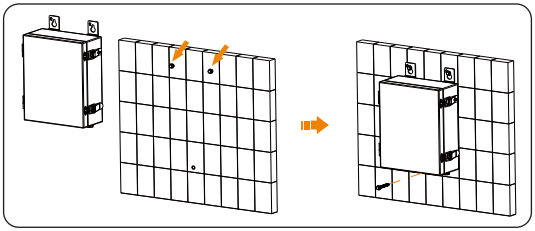


Figure 4-10 Seating the meter and securing the screw

Step 6: Adjust the three self-tapping screws until the meter box is firmly mounted to the wall.

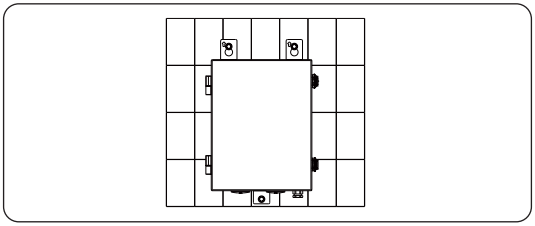


Figure 4-11 Fixing the meter

Step 7: Open the meter box cover to complete the wiring connection of grid meter.

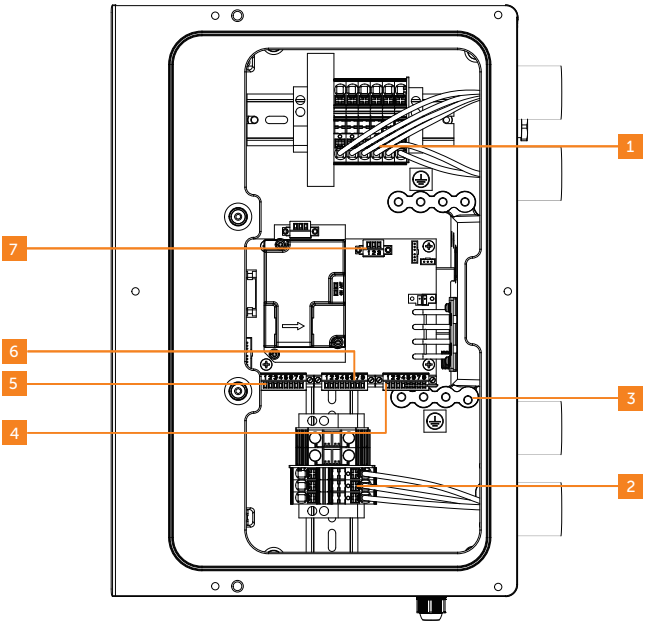
NOTICE!
• For detailed wiring connection, please refer to "5.3 Electrical Connection of Grid Meter".

5 Electrical Connection

5.1 Wiring Connection on the Inverter

All electrical wiring will be done in the wiring box, and all electrical wiring methods are similar. Therefore this section will introduce all electrical wiring steps and requirements.

Required wire size and torques



Inverter power terminal (Purchased by customer)

No.	Terminals	Type	Cross-sectional Area Range	Strip Length
1	PV terminals	90°C(194°F), 600 V, copper	10-8 AWG	0.47 in / 12 mm
2	AC terminals	90°C(194°F), 600 V, copper	12-8 AWG(3.8 kW), 10-8 AWG(5/6/7.6 kW)	0.47 in / 12 mm
3	Ground terminals	90°C(194°F), 600 V, copper	8 AWG	0.47 in / 12 mm

Inverter communication terminal (Purchased by customer)

No.	Terminals	Port Pin	Type	Range	Strip Length	Torque
4	AUX terminal	Pin 1: RS485_METER_A	CAT5 or better	24-18 AWG	0.24 in / 6 mm	1.8 in-lbs/ 0.2 N·m
		Pin 2: RS485_METER_B				
		Pin 3: GND	/			
		Pin 4: +12V_RELAY_OUT				
		Pin 5: DRM0				
		Pin 6: +12V_COM				
		Pin 7: STOP_NO+				
		Pin 8: STOP_NO-				
5	COMM in terminal	Pin 1: SYSR_L	CAT5 or better	24-18 AWG	0.24 in / 6 mm	1.8 in-lbs/ 0.2 N·m
		Pin 2: SYSR_H				
		Pin 3: CAN_L				
		Pin 4: CAN_H				
		Pin 5: RS485_BI_A				
		Pin 6: RS485_BI_B				
		Pin 7: +12V	/	18-16 AWG		
		Pin 8: GND				
6	COMM out terminal	Pin 1: SYSR_L	CAT5 or better	24-18 AWG	0.24 in / 6 mm	1.8 in-lbs/ 0.2 N·m
		Pin 2: SYSR_H				
		Pin 3: CAN_L				
		Pin 4: CAN_H				
		Pin 5: RS485_BI_A				
		Pin 6: RS485_BI_B				
		Pin 7: +12V	/	18-16 AWG		
		Pin 8: GND				
7	MLPE terminal	Pin 1: GND	CAT5 or better	24-18 AWG	0.24 in / 6 mm	1.8 in-lbs/ 0.2 N·m
		Pin 2: RS485_MLPE_A				
		Pin 3: RS485_MLPE_B				

Open the wiring box cover

WARNING!

- Before inverter wiring connection, please make sure:
  - No live voltages are present on PV input and AC output circuits.
  - The DC switch is in "OFF" position.
  - The breaker of battery is in "OFF" position.

Step 1: Turn DC switch to "OFF" position. Note that the cover cannot be removed when the DC switch is in "ON" position.

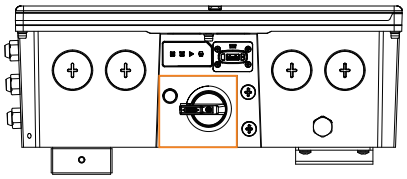


Figure 5-1 Turning DC switch to "OFF"

Step 2: Make sure the breaker of battery is in "OFF" position.

Step 3: Remove the 6 cover screws using Allen key, then disassemble the cover.

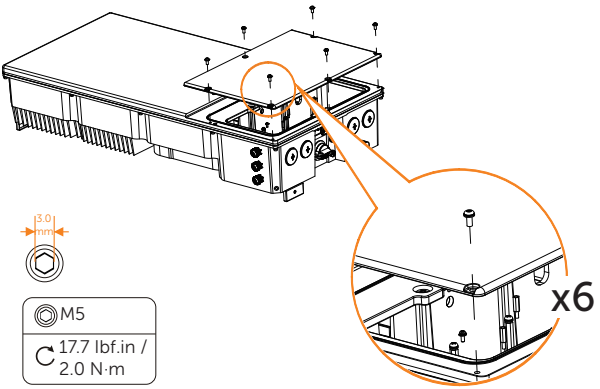


Figure 5-2 Removing the cover screws

Remove the wiring box waterproof plugs

A1-HYB-G2 series inverter is equipped with four 1 inch conduit fittings which are used for electrical wiring access. Four waterproof plugs have been installed on the inverter at the factory. Before wiring connection, these waterproof plugs should be removed by the operator.

Step 1: Remove the waterproof plugs by placing a flat blade screwdriver in the slot on the waterproof plug face and turning while gripping the nut on the inside of the enclosure to ensure it does not slip.

Step 2: Unscrew the nut from the waterproof plug and slip the conduit plug out of the waterproof opening.

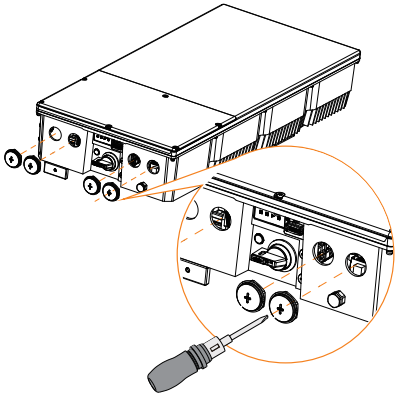


Figure 5-3 Remove the wiring box waterproof plugs

Conduit installation

Operator should use the conduits and plugs with standard size which must fit with the holes on the right side of the inverter. Conduit fittings need to be water tight, and an insulated type is preferred.

Once conduit and fittings are installed, wires should go through the conduit and be locked into the corresponding terminals.

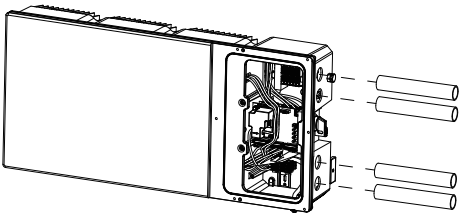


Figure 5-4 Install conduits

5.1.1 Ground Connection

Grounding terminals are provided in the accessory package. If using a Spade terminal additionally, select according to the following model.

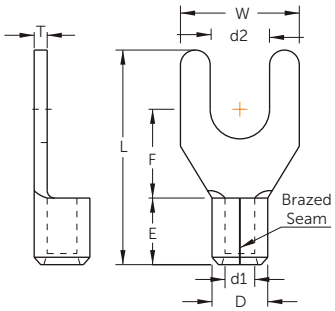


Figure 5-5 Spade terminal

Table 5-1 Spade terminal

Wire Range (AWG/ mm^2)	Brazed Seam	Stud Size (in/mm)	Dimension (in/mm)						
		d2	W	F	L	E	D	d1	T
8/8	SNB8-5	0.209/ 5.3	0.413/ 10.5	0.319/ 8.1	0.819/ 20.8	0.335/ 8.5	0.283/ 7.2	0.177/ 4.5	0.047/ 1.2

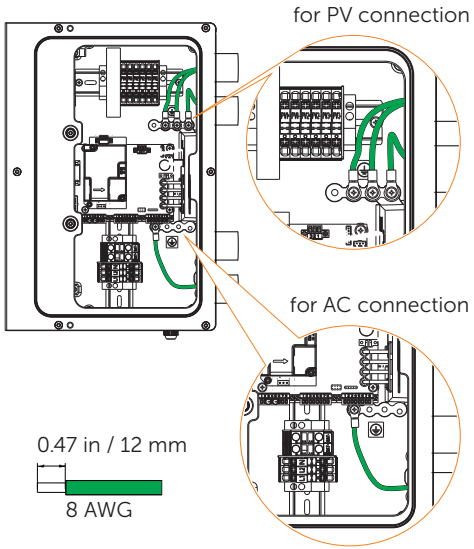


Figure 5-6 GND cable connection

5.1.2 PV Connection

CAUTION!

- Never reverse the polarity of the array string cables as it can cause damage to the inverter. Always ensure correct polarity.

WARNING!

- Select PV modules with excellent functioning and reliable quality. Open-circuit voltage of module arrays connected in series should be less than the inverter Max. DC input voltage of 550 V. The inverter warranty is VOID if the DC input voltage is exceeded.

WARNING!

- Ensure no live voltages are present on the PV input and AC output circuit, and verify that the DC disconnect, AC disconnect, and dedicated AC circuit breaker are in the "OFF" position before installation.

WARNING!

- Use dark, opaque sheets to cover the PV solar panels before performing any wiring or connection.

WARNING!

- Power is fed from more than one source and more than one live circuit. Note that all DC and AC terminals may carry current even without connected wires.

WARNING!

- Ensure maximum protection against hazardous contact voltages while assembling PV panel installations. Both the positive and negative leads must be strictly isolated electrically from the protective ground potential (PE).

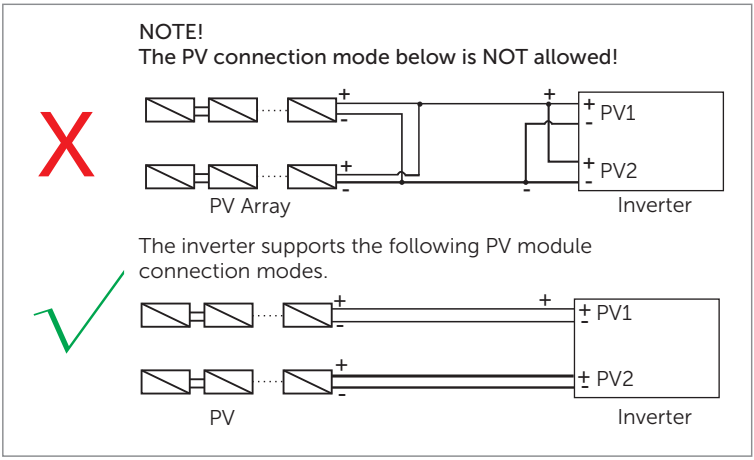


Figure 5-7 The PV connection mode

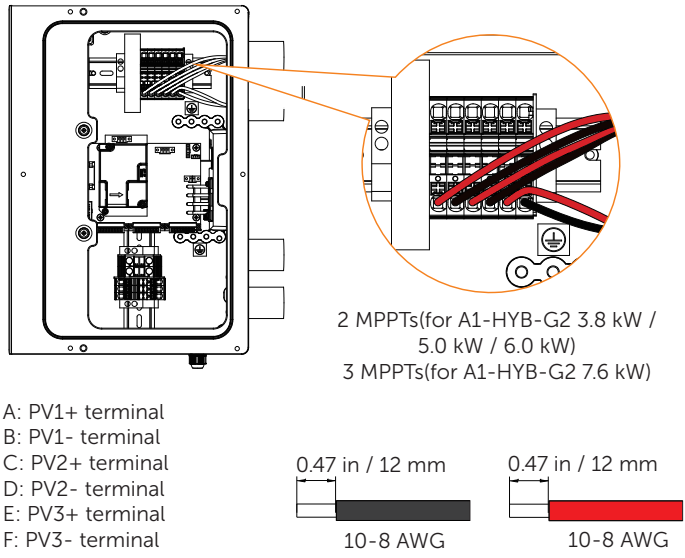


Figure 5-8 PV cable connection

5.1.3 AC Connection

CAUTION!

- The installer is responsible for providing overcurrent protection. To reduce the risk of fire, only connect to a circuit provided with overcurrent protection in accordance with the National Electrical Code, ANSI/NFPA 70.

The connection procedure will vary depending on the grid configuration.

The following diagram provides an overview of the compatible grid configurations of which voltage limit, frequency limit and conductors have to be connected to the inverter to comply with the grid configuration.

Public grid configuration allowed:

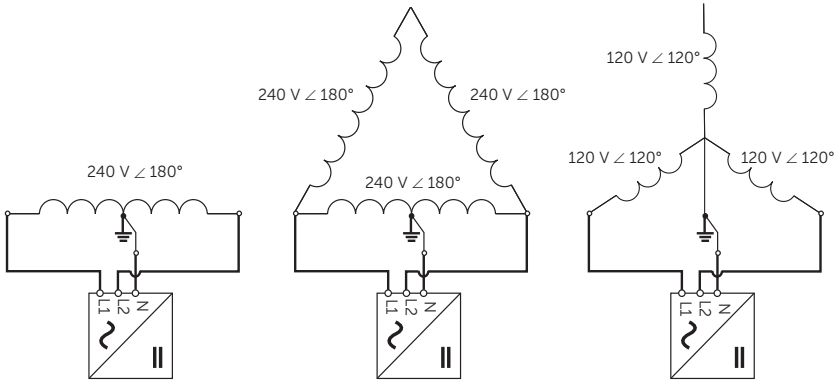


Figure 5-9 Public grid configuration allowed

Grid terminal connection on the side of inverter

CAUTION!

DANGER — HIGH VOLTAGE!

- For the specific requirement of power cable, please refer to "Required wire size and torques".

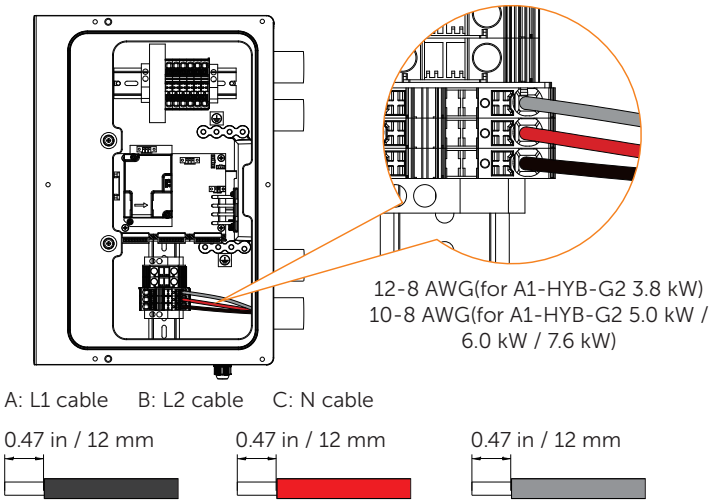


Figure 5-10 AC cable connection

AC circuit breaker requirements

The AC circuit breaker (not included in the A1-HYB-G2 series inverter) is required to protect each AC line (L1 and L2) of the HYB series inverter. The circuit breaker should be able to handle the rated maximum output voltage and current of the inverter.

Refer to the table below to determine the specific circuit breaker in order to avoid potential fire hazards. The AC circuit breaker selection and installation must follow the National Electrical Code(NEC), ANSI / NFPA 70 or local electrical codes.

Table 5-2 AC circuit breaker requirements

Inverter model	Description	Source
A1-HYB-3.8K-G2	2-pole, 20 A, 240 Vac	Purchase by customer
A1-HYB-5.0K-G2	2-pole, 30 A, 240 Vac	
A1-HYB-6.0K-G2	2-pole, 35 A, 240 Vac	
A1-HYB-7.6K-G2	2-pole, 40 A, 240 Vac	

5.1.4 Communication Connection

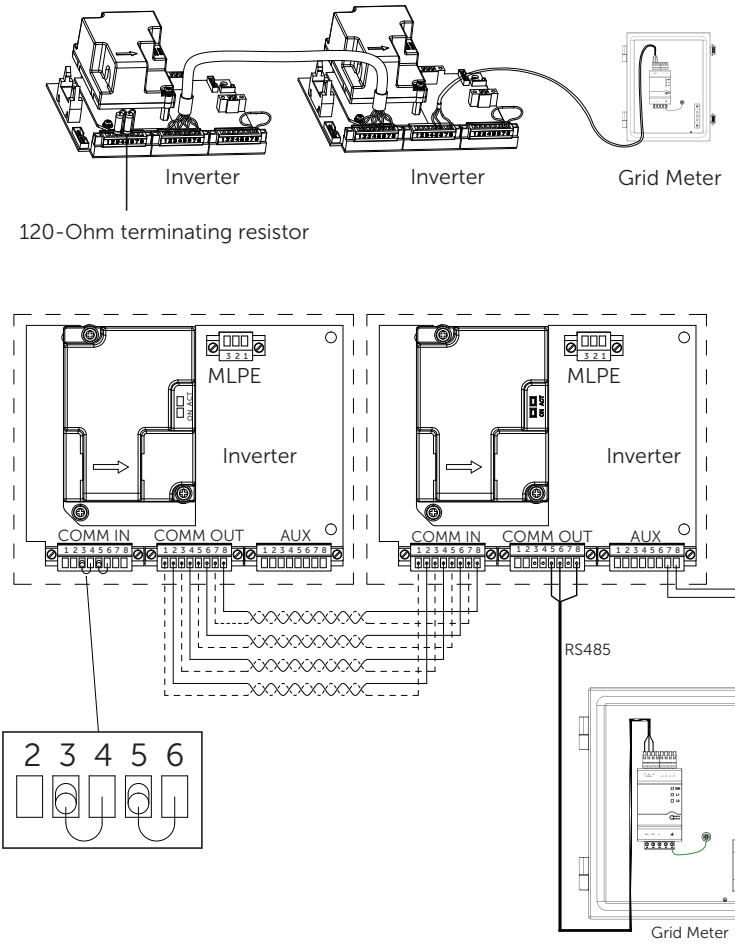
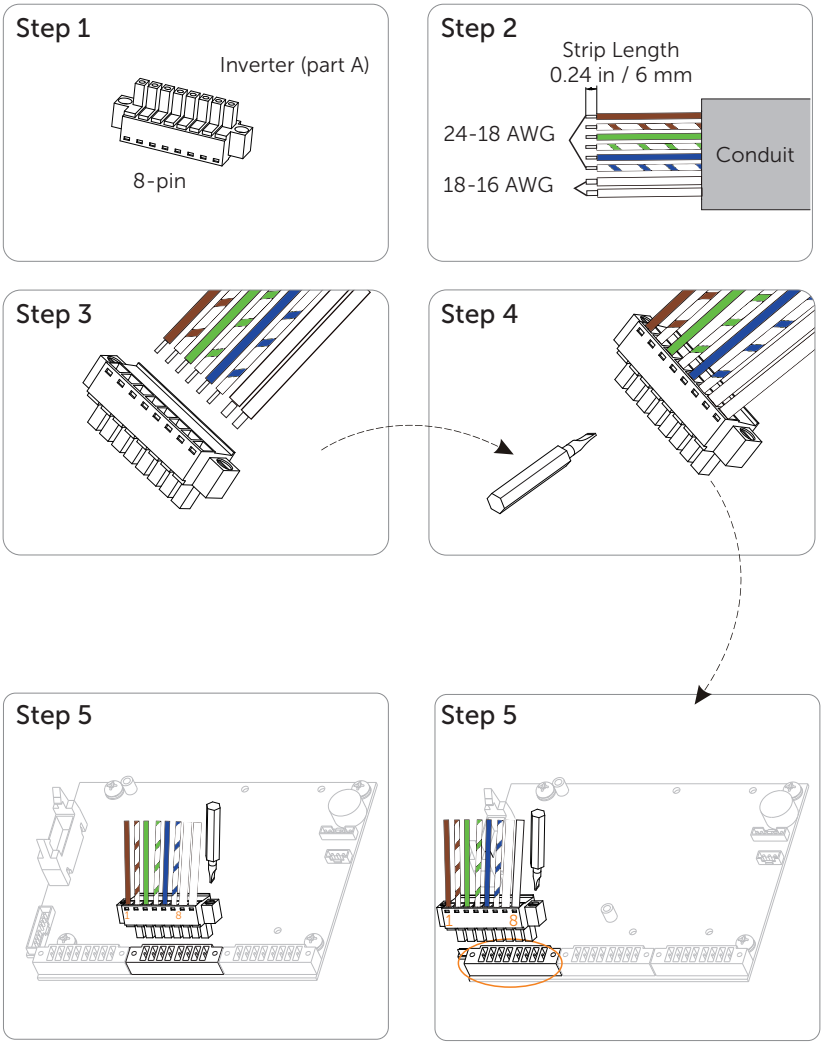


Figure 5-11 Inverter communication system diagram



On the side of the first inverter

On the side of the second inverter

Figure 5-12 Diagram for communication connection steps between inverters

Connection steps of terminating resistor

Step 1: The 120-Ohm resistor has been pre-installed on the 8-pin female block before leaving factory. Take it out from the accessory box.

Step 2: Install the 8-pin female block with resistor to the COMM in male terminal by using slot screwdriver.

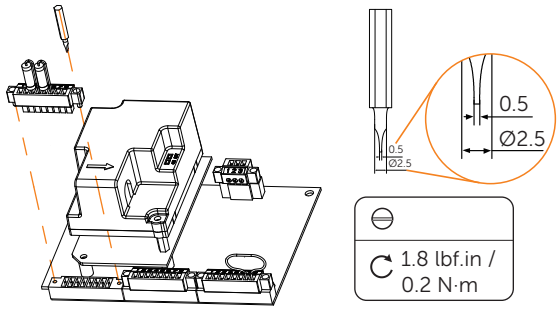


Figure 5-13 Connection of terminating resistor

Connection steps of communication wire

Step 1: A1-HYB-G2 series inverter supports to be connected with additional three inverters in maximum. Disassemble 8-pin female blocks prior to communication connection.

Step 2: Communication connection between inverters:

Pin 1-Pin 6: Select the CAT5 or better (24-18 AWG), use diagonal plier to cut off two wires and leave six wires for connection. Remove 0.24 in / 6 mm of insulation from the end of the six wires.

Pin 7-Pin8: Select two 18-16 AWG wires and remove 0.24 in / 6 mm of insulation from the end of the two wires.

Step 3: Plug stripped wires into female terminal and ensure that all conductor strands are captured in the terminal.

Step 4: Screw down screw cap tightly.

Step 5:

Connection between inverters:

Plug the female terminal block into the COMM OUT male terminal block on the communication board of the first inverter and screw in each screw tightly. And plug another end of female terminal block into the COMM IN male terminal block on the communication board of the second inverter.

Connection between the inverter and grid meter:

Connect Pin5, Pin6, Pin8 of the COMM OUT terminal of the inverter to RS485A, RS485B, GND of the grid meter.

5.1.5 Emergency Stop Connection

For installing Emergency Stop on the inverter, follow the below installation instructions.

Step 1: Remove the factory-installed jumper from Pin 7 and 8 of the 8-position "AUX" connector inside the inverter.

Step 2: Use minimum 24 AWG conductors to connect Pin 7 and Pin 8 to a suitable emergency stop switch.

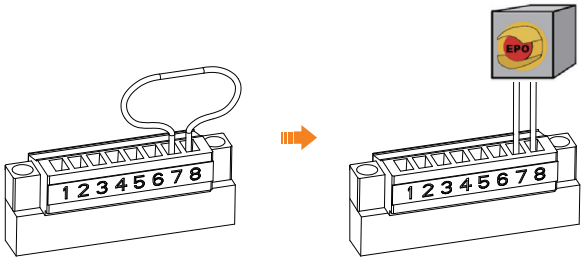


Figure 5-14 Emergency stop switch connection

5.1.6 Monitoring Connection

The inverter is equipped with monitoring port which can collect data and transmit it to monitoring-website via an external monitoring data collector.

SolaX may provide several types of monitoring data collector, such as Pocket WiFi V3.0-P (Optional) and Pocket WiFi+4GM (Optional). Purchase the product from supplier if needed.

Installation instructions

Step 1: Remove the cover of monitoring port.

Step 2: Plug the communication module into the port.

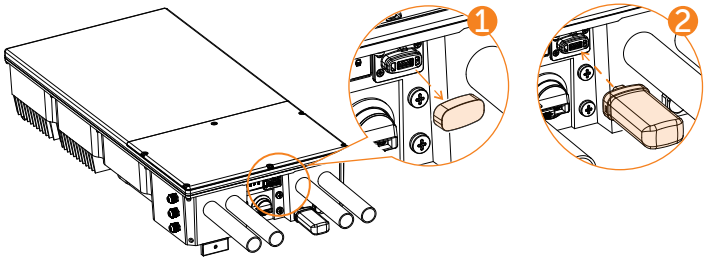


Figure 5-15 Monitoring Connection

5.2 Wiring Connection Between Inverter and Battery

Ground Connection

Step 1: Strip the insulation of conductor by wire stripper;

Step 2: Pull the heat-shrink tubing over the PE cable and insert the stripped section into the grounding terminal;

Step 3: Crimp it with crimping tool, pull the heat-shrink tubing over the stripped section of the grounding terminal and use a heat gun to shrink it so that it can be firmly contacted with the terminal;

Step 4: Connect the ground cable between the inverter and battery with M5 screws. For easier connection, please connect the grounding cable on the BMS first.

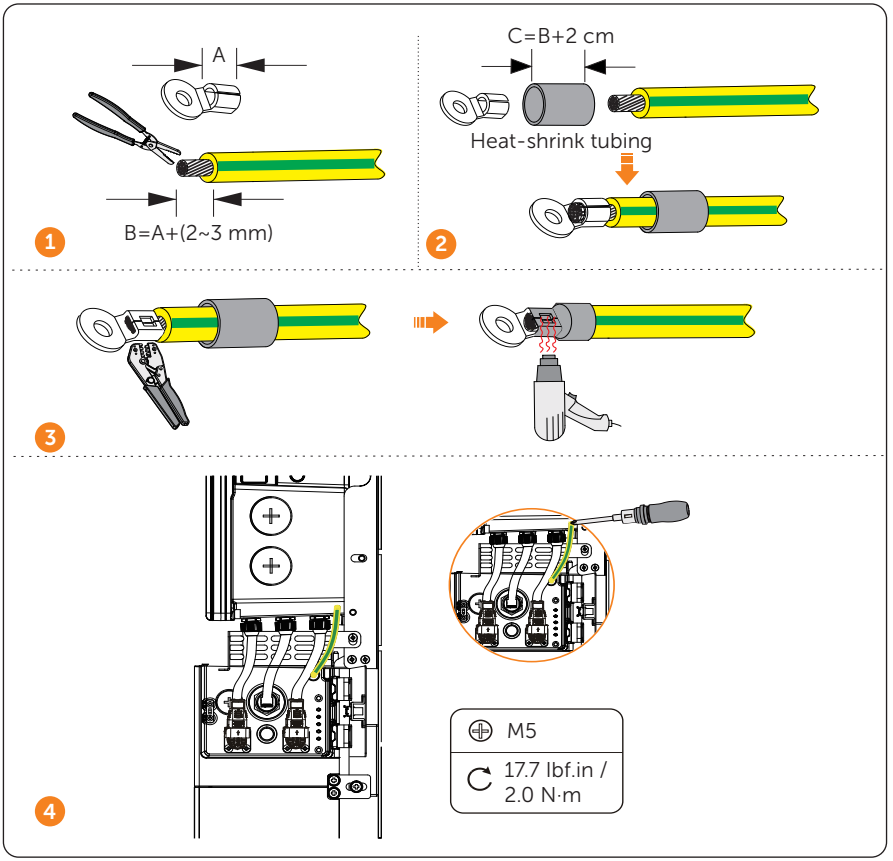


Figure 5-16 Groud connection

NOTICE!

- For easier connection, please connect the grounding conductor on the BMS first.
- Ensure to connect the ground conductor.

Battery Connection

NOTICE!

- Before wiring, the guards (if any) shall be removed from connectors.
- Before wiring, unscrew the cap at BMS clockwise and unscrew the screws at BAT+ and BAT- respectively.

The parts where BMS needs to wire are as follows:

Step 1: The BAT+ (red) , communication cable and BAT- (black) cables have been already connected on the inverter's side. Only connecting the other end of the cables to the corresponding port of BMS is needed.

Step 2: Make sure that both ends of the cables are connected correctly to the connector on the right side of the BMS module.

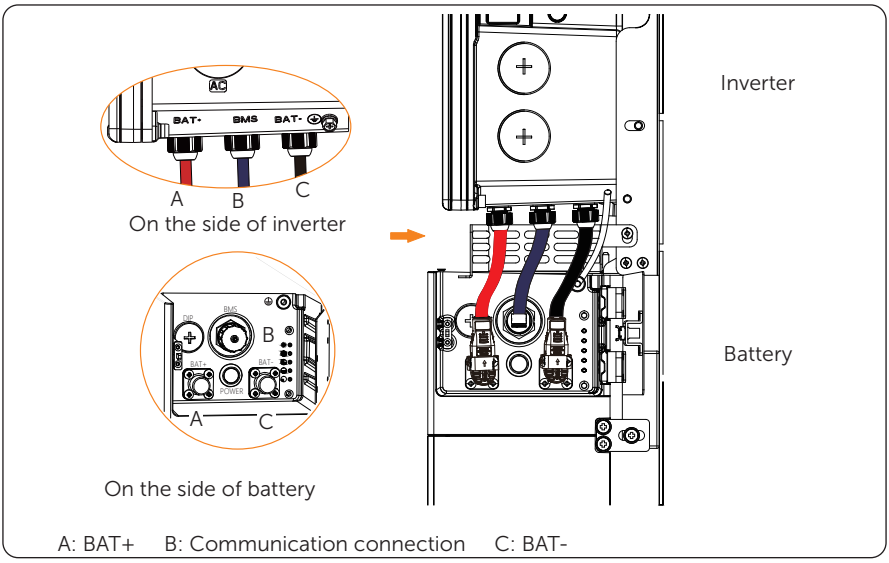


Figure 5-17 Battery connection

NOTICE!

- Don't violently remove cables when they are locked.

Dismantling the battery

NOTICE!

- Before dismantling the battery, make sure you have shut down the battery system.
- If the BAT cables will be reused after disconnecting, please reinstall and secure the buckles back onto these cables first before reconnecting them. For details, see step 2.
- The arrow direction on the buckle indicates the vertical direction of the groove.

Step 1: Disconnect the cables between BMS and the inverter.

(1) Unscrew the communication cable from the BMS port.
(2) Find the overall position of the groove according to the buckle arrow, place a flat-head screwdriver on the groove at either left or right side of the buckle, and then pry open the buckles fastened on BAT+ and BAT- cables.

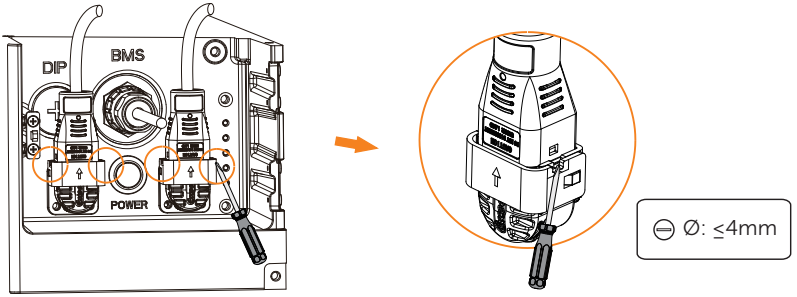


Figure 5-18 Pry open the buckles

Step 2: (Optional) Reinstall and secure the buckles to the BAT cables.

(1) Align the curve of the cable head to that of the buckle, and then stick the cable head into the buckle base.
(2) Align the buckle cover to the buckle base, and then press the cover down to lock it until a "click" sound is heard.

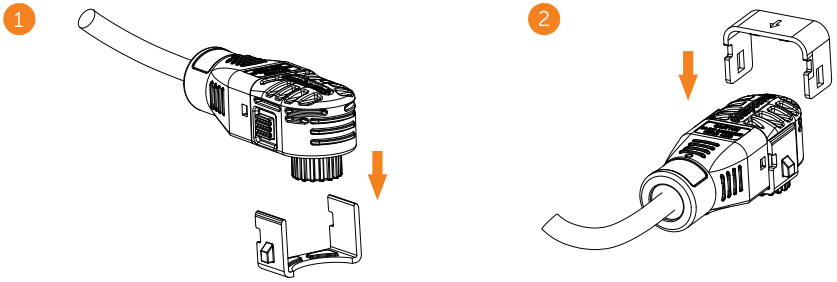


Figure 5-19 Reinstall the buckles

Step 3: Disconnect the series wiring terminal on the battery.

Step 4: Disconnect the rest cables.

5.3 Electrical Connection of Grid Meter

Scenario A: Inverter connected to Grid Meter, no BI

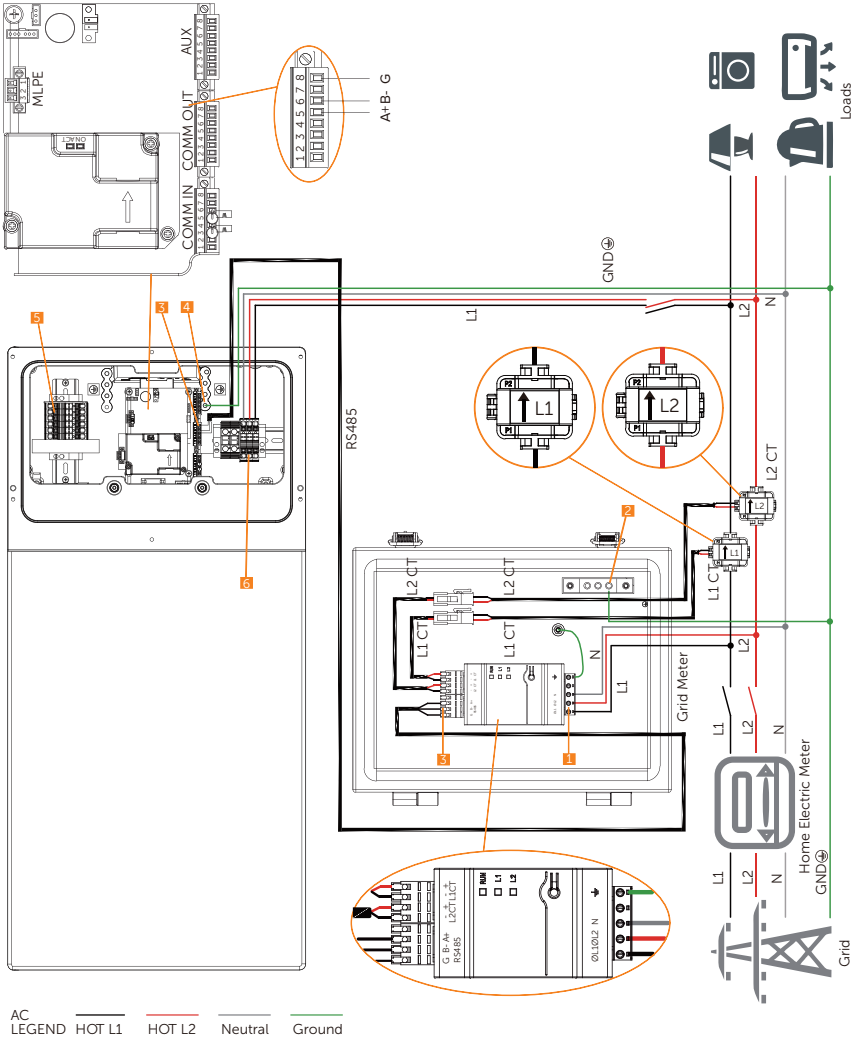


Figure 5-20 Electrical Connection Diagram A

Table 5-3 Additionally required wires

No.	Terminal	Type	Cross sectional Area Range	
1	Meter Sample Terminals	90 °C (194 °F), 600 V, copper	22-18 AWG	
2	Meter Ground Terminals	90 °C (194 °F), 600 V, copper	10-8 AWG	
3	RS485 Terminals (COMM OUT Terminals)	CAT5 or better	Pin1	24-18 AWG
			Pin2	
			Pin3	
			Pin4	
			Pin5	
			Pin6	
			Pin7	18-16 AWG
			Pin8	
4	Inverter Ground Terminals	90 °C (194 °F), 600 V, copper	8 AWG	
5	PV Terminals	90 °C (194 °F), 600 V, copper	10-8 AWG	
6	Inverter AC Terminals	90 °C (194 °F), 600 V, copper	10-8 AWG (5.0/6.0/7.6 KW) 12-8 AWG (3.8KW)	

Wiring procedure

Step 1: Connect L1, L2, N of the inverter to the switchboard.

Step 2: Clip L1 CT to L1 at the input port of the switchboard, and the current is directed to the inverter.

Step 3: Clip L2 CT to L2 of the input port on the switchboard, and the current is directed to the inverter.

Step 4: Connect L1 CT and L2 CT to the meter.

Step 5: Connect RS485A, RS485B, GND of the meter to Pin5, Pin6, Pin8 of the COMM OUT terminal of the inverter.

NOTICE!

- CT direction should ensure that it points from the grid end to the home load end.

6 Operation on SolaXCloud App

6.1 Downloading and Installing App

Scan the QR code below to download the App. The QR codes are also available on the login page of our official website (www.solaxcloud.com), and the installation guide of the dongle.

Figure 6-1 QR code

NOTICE!
• The screen shots in this chapter correspond to the SolaXCloud App V6.2.0, which might change with version update and should be subject to the actual situations.

6.2 App Operation Steps

To operate correctly without BI, the installer must disable the **PresenceOfBI**.

Step 1: Open the SolaXCloud App on the smartphone. Click on **More** > **Local** to enter, click on **Scan**, and then scan the QR code on the Dongle, the password (which can be changed) will appear automatically and you can click on **Login** to log in.

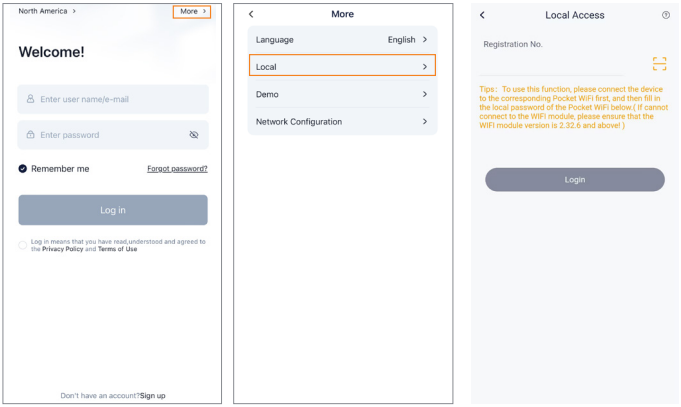


Figure 6-2 Login

Step 2: Tap the **Gear** in the upper right corner on the inverter card. Then tap **Advanced** and enter the password "2018".

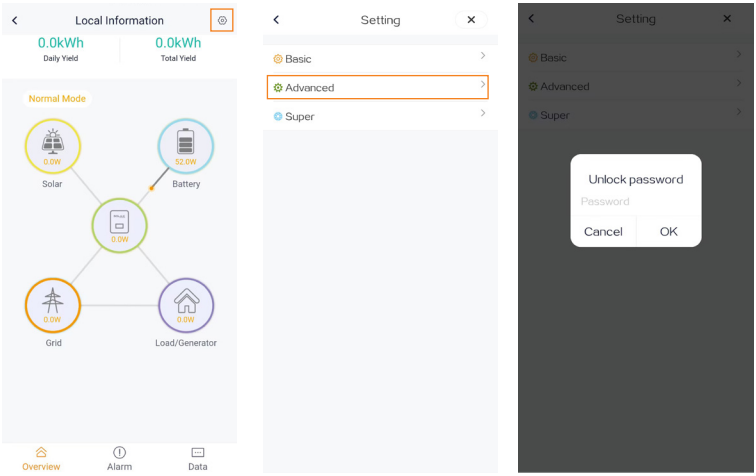


Figure 6-3 Advanced setting

Step 3: Tap **PresenseOfBI** > **Disable** and click **Save** to disable BI.

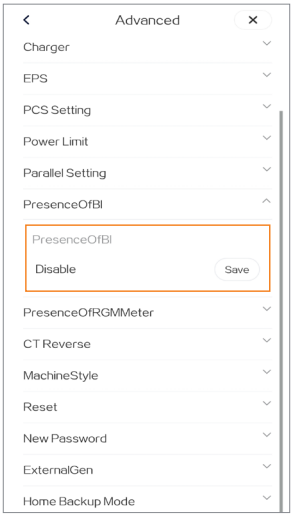


Figure 6-4 Disabling BI

6.3 App Setting for Parallel Inverters

Each parallel inverter shall be set on App menu. The parallel role and parallel inverter number shall be set on primary inverter, while only the parallel role shall be set on secondary inverters.

The maximum number of parallel inverters is 4. One of inverters shall be set as Primary, while the others can be set as Secondary 1, Secondary 2, and Secondary 3 regardless of sequences.

Setting path: **Menu > Setting > Advance Setting > Parallel Setting**

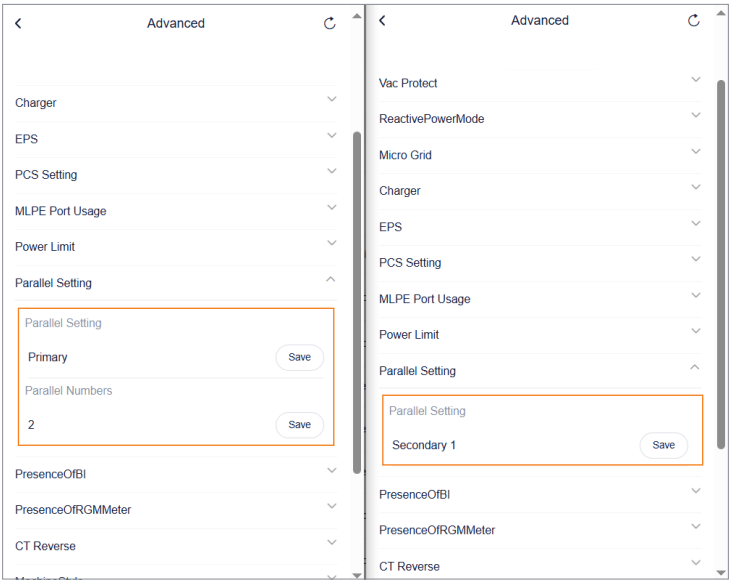


Figure 6-5 Parallel Setting

Contact Information

USA

+1 (888) 820-9011

service.us@solaxpower.com

Warranty Registration Form

For Customer (Compulsory)

Name _____ Country _____

Phone Number _____ Email _____

Address _____

State _____ Zip Code _____

Product Serial Number _____

Date of Commissioning _____

Installation Company Name _____

Installer Name _____ Electrician License No. _____

For Installer

Module (If Any)

Module Brand _____

Module Size(W) _____

Number of String _____ Number of Panel Per String _____

Battery (If Any)

Battery Type _____

Brand _____

Number of Battery Attached _____

Date of Delivery _____ Signature _____

Please visit our warranty website: https://www.solaxcloud.com/#/warranty or use your mobile phone to scan the QR code to complete the online warranty registration.

For more detailed warranty terms, please visit SolaX official website: www.solaxpower.com to check it.

SolaX Power Network Technology (Zhejiang) Co., Ltd.

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Hangzhou, Zhejiang, China
E-mail: info@solaxpower.com

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