H2-(5K-10K)-LS2 Quick Guide

This quick guide provides installation operations. For safety precautions and detailed product information, refer to the *User Manual* on the SAJ Website www.saj-electric.com. You can scan the below QR code to access all the product documentation.

NOTICE

- Before installation, operation, and maintenance, read the product documentation carefully.
- ONLY qualified and trained electricians who have read and fully understood all safety regulations contained in this manual can install, maintain, and repair the equipment. The operation personnel should understand the system, its working principles, and relevant national and regional standards.
- During operations, wear protective equipment and use dedicated tools.

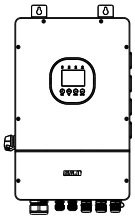
☐1. Check the outer packing

1. Check the outer packing package for any damage, such as holes and cracks.
2. Check the equipment model.

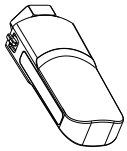
If any serious damage is found or the model is not what you requested, do not unpack the product, and contact your dealer as soon as possible.

☐2. Check the product packages

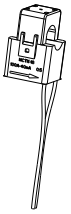
Place the connectors separately after unpacking to avoid confusion for connection of cables.



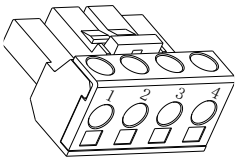
Inverter x1



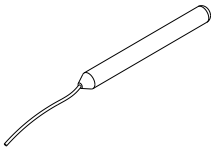
Communication module x1



CT x1



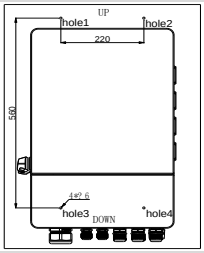
Terminal x1



Battery temperature sensor x1

Allen wrench x1

M6*50 expansion bolt x4



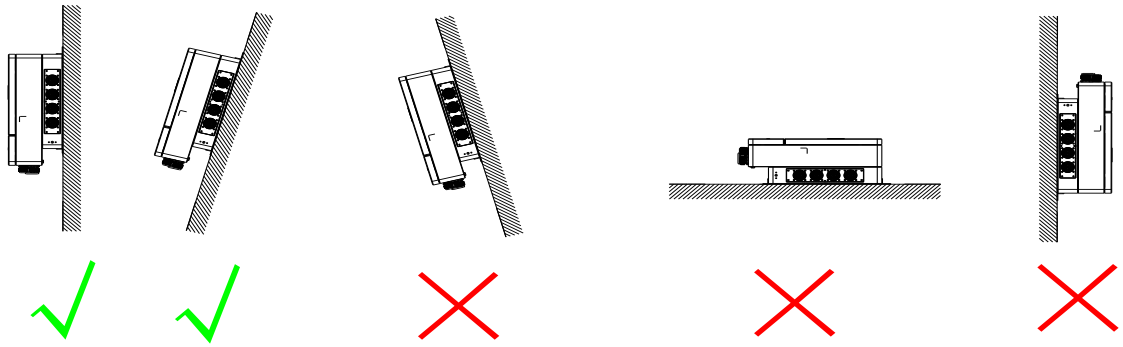
Hole positioning paper

Documents

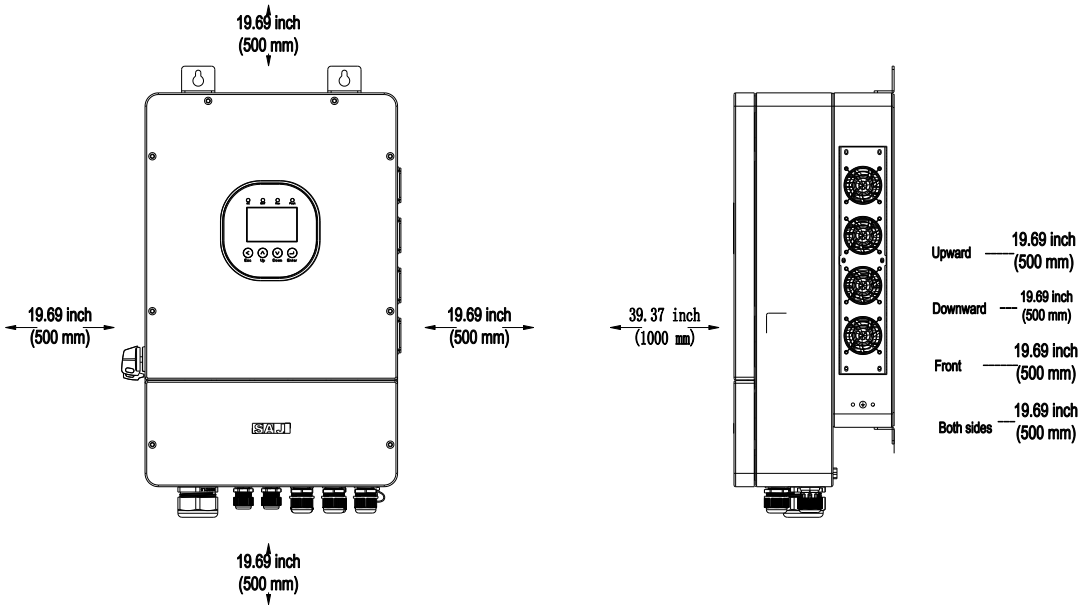
Note: The documents include a warranty card, a quick guide, and a user manual.

☐3. Check installation ways and gaps

- The inverter uses natural convection cooling and can be installed indoor or outdoor.
- Do not expose the inverter to direct sunlight cause overheating might cause power derating.



- The minimum clearance requirement for multiple inverter installation is shown as below.



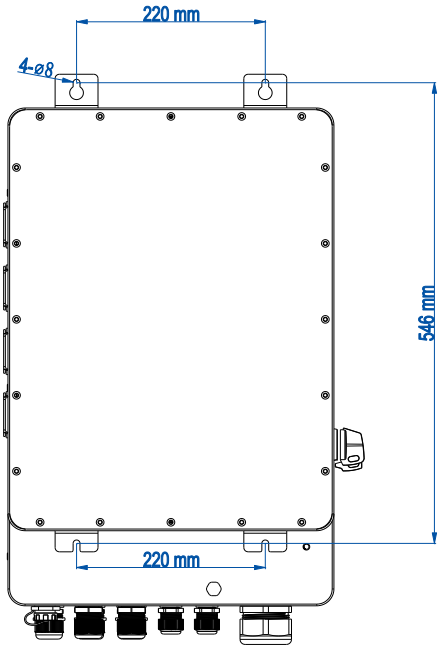
☐ 4. Install the inverter onto the wall

1. Depending on your configurations, choose one of the following manners to mark and drill screw holes on the wall:

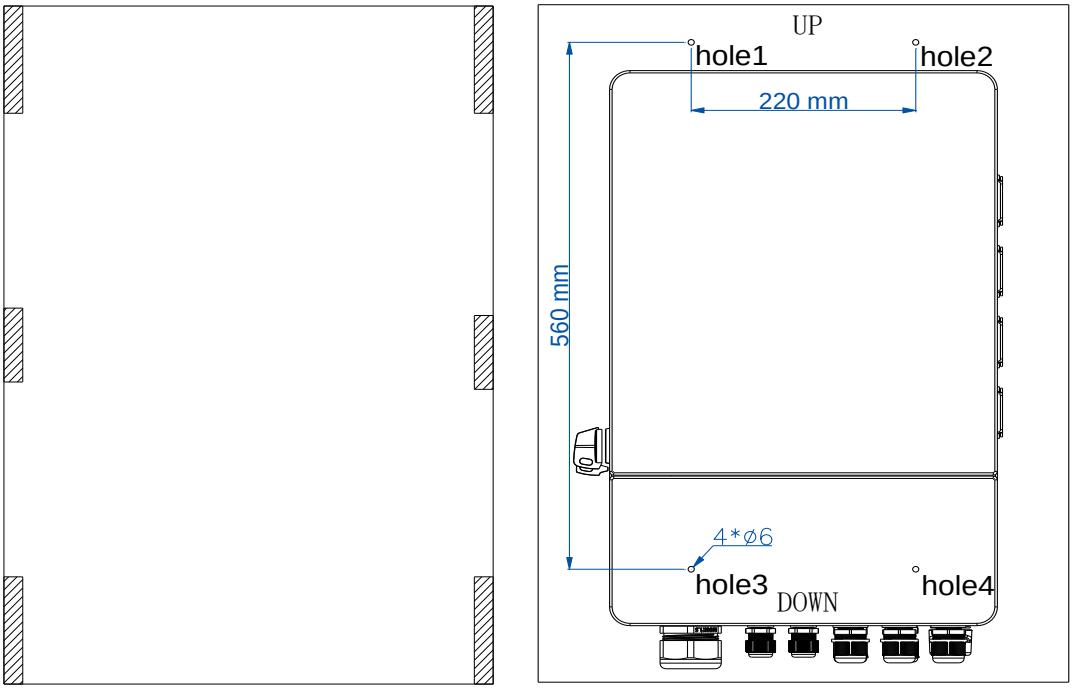
   Note: Reserve enough distance at the inverter bottom for cable connection.

   - Configurations without a hole positioning paper: The distance between the upper and the bottom screw holes is 546 mm.

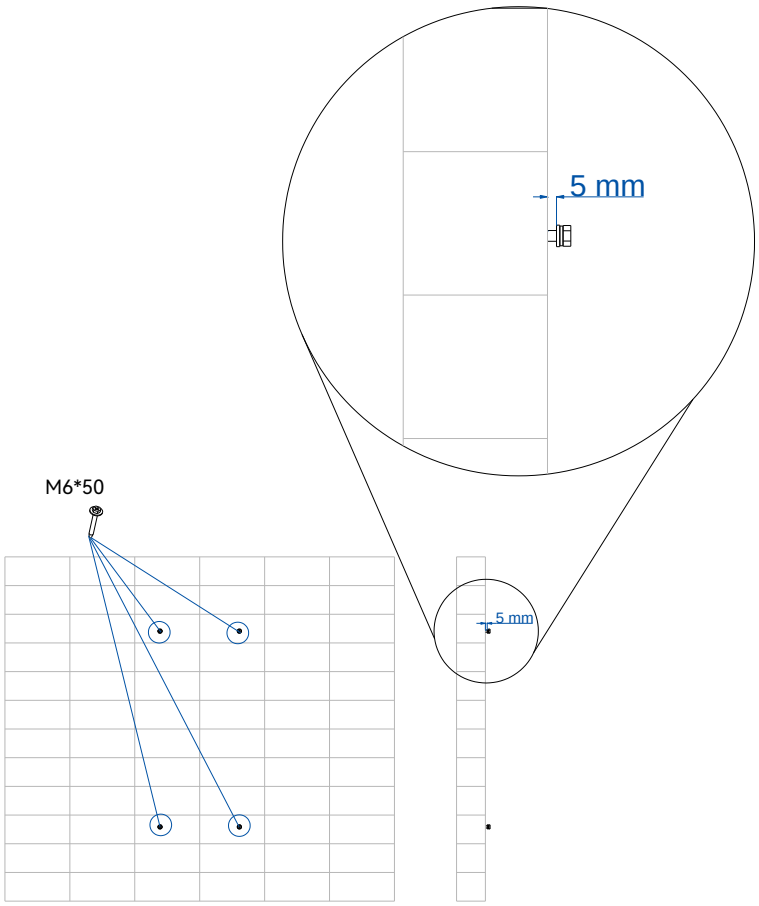
     On the wall, mark and drill four holes as shown below. Use a rubber mallet to insert four expansion tubes into the holes.



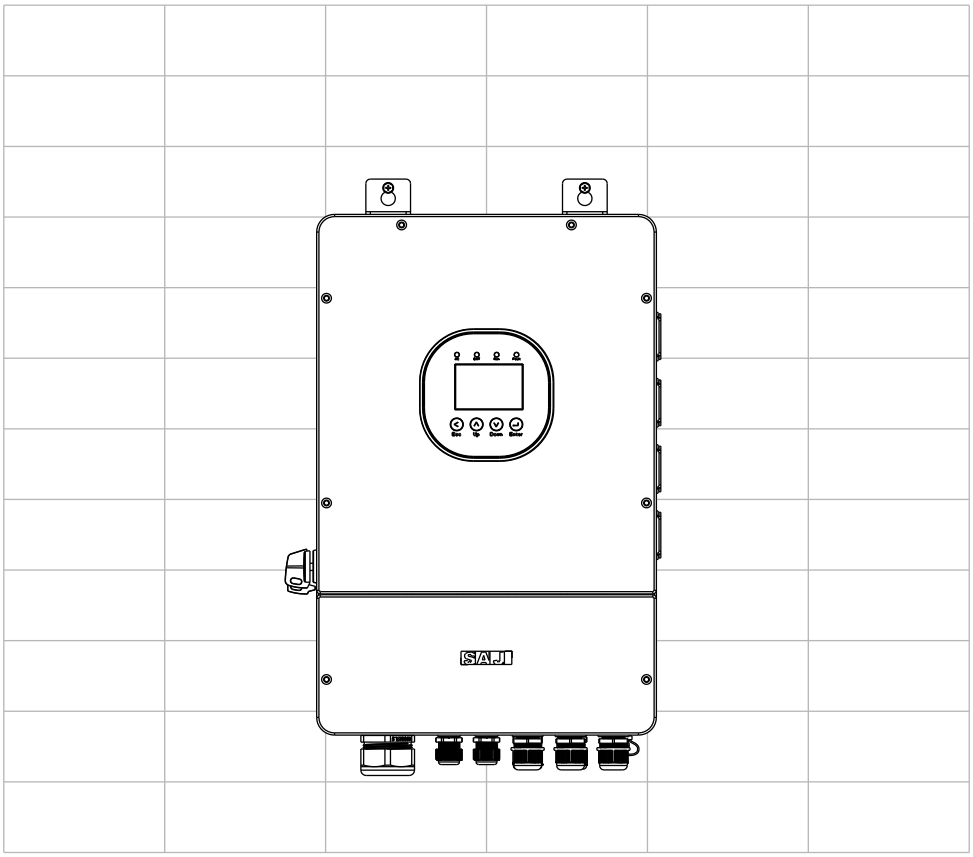
- Configurations with a hole positioning paper: The distance between the upper and the bottom screw holes is 560 mm. Stick the hole positioning paper onto the wall. Drill four holes according to the instructions of four holes (hole1, hole2, hole3, and hole4). Then, remove the paper.



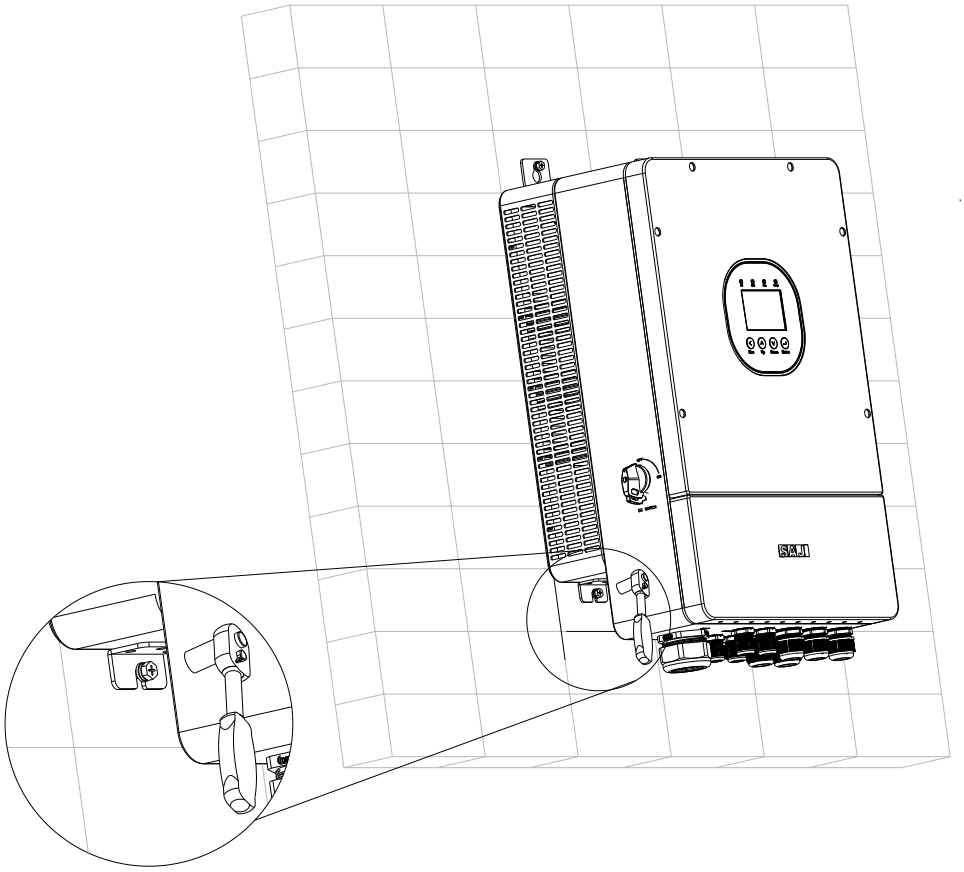
2. Use a rubber mallet to insert four expansion tubes into the holes. Insert four M6*50 expansion bolts into the drilled holes. Reserve 5 mm distance between the wall and the head of the screw.



3. Mount the inverter onto the wall.



4. Tighten the four expansion bolts.

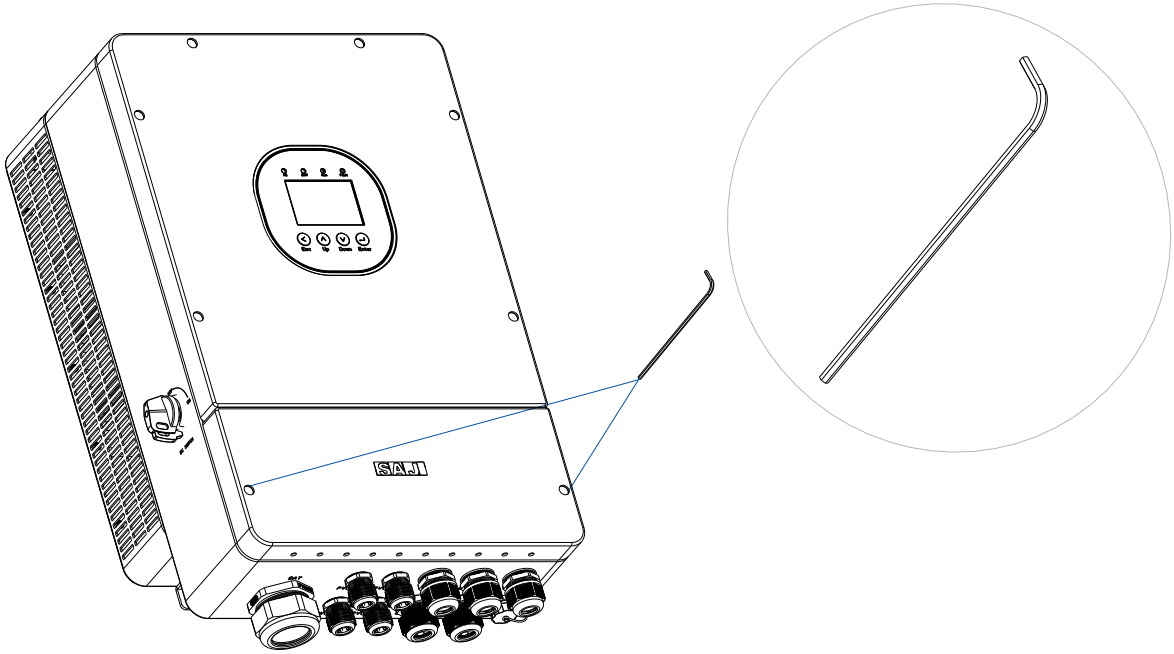


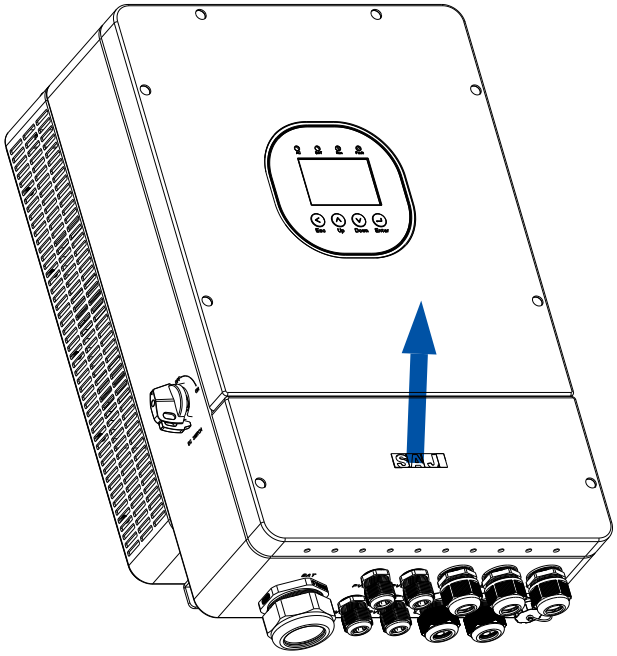
☐ 5. Install the battery

For details, refer to the battery user manual.

☐ 6. Open the junction box of the inverter

On both sides of the cover, use the Allen Wrench to loosen the screws. Then, remove the cover.





☐ 7. Assemble the AC-side electrical connection

1. For safety operation and regulation compliance, install a circuit breaker between the grid and the inverter.

   Choose the breaker and cables according to the following table.

   Note: If the inverter is installed far away from the grid connection point, select a larger cable size to ensure that the voltage drop from the grid connection point to the inverter is within 2% of the grid voltage.

Inverter model	AC breaker	Cables size
H2-5K-LS2	50 A	8 AWG

H2-6K-LS2	63 A	8 AWG
H2-(7.6K-8K)-LS2	80 A	8 AWG
H2-10K-LS2	100 A	6 AWG

⚠ WARNING

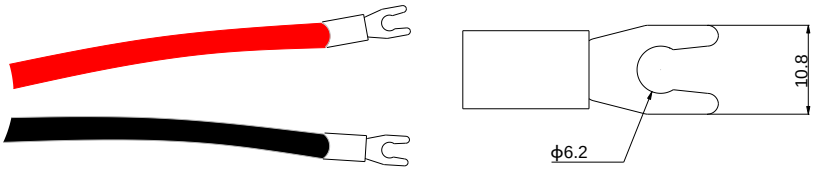
Risk of personal injury due to electric shock!

- Ensure that the equipment is powered off before performing wiring operations.
- Improper wiring of AC conductors will result in risk of electrical failure or equipment damage. Please ensure that all connections are made correctly in accordance with the instructions in this document and in accordance with local wiring codes and regulations before applying power to the unit.

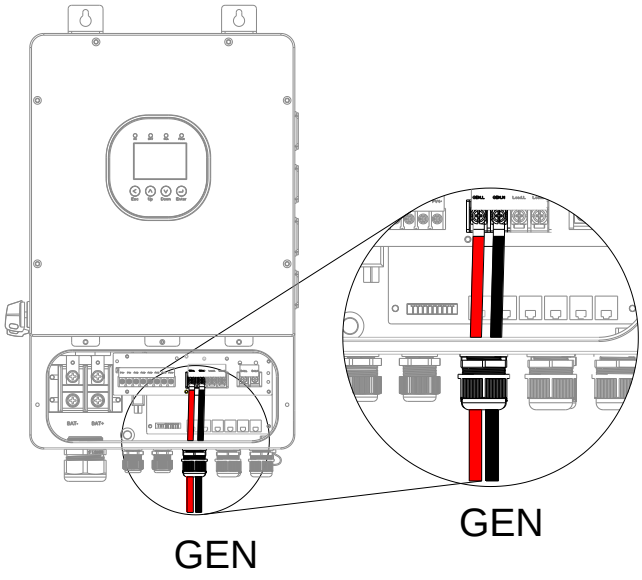
2. Strip the insulation on the cable ends. (20-mm/0.79-inch length for LOAD and GRID wires; 10-mm/0.39-inch length for GEN wires)

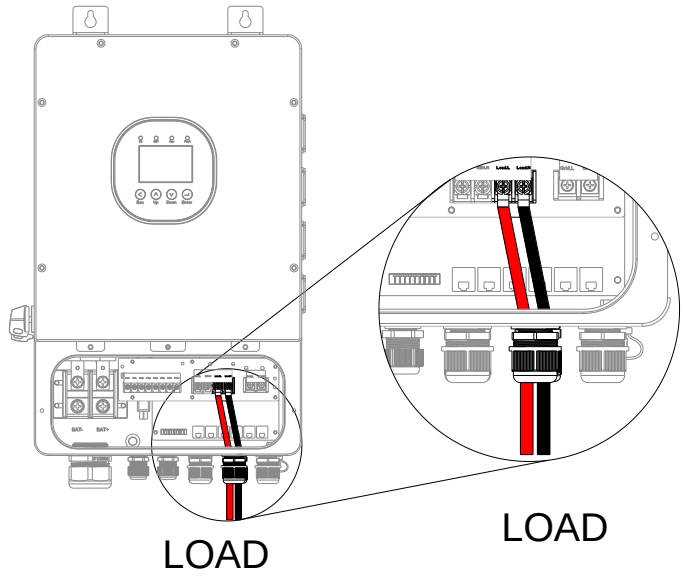
Cable	Recommended cable	Recommended torque
LOAD	L: 8 AWG	25 LB-IN (2.82 N·m)
	N: 8 AWG	25 LB-IN (2.82 N·m)
GRID	L: 6 AWG	25 LB-IN (2.82 N·m)
	N: 6 AWG	25 LB-IN (2.82 N·m)
GEN	L: 8 AWG	25 LB-IN (2.82 N·m)
	N: 8 AWG	25 LB-IN (2.82 N·m)

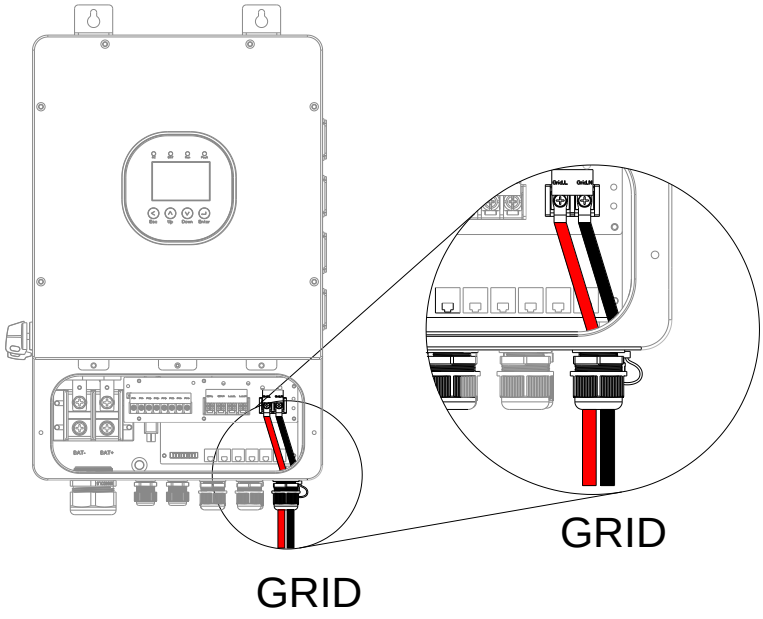
If needed, you can put an insulation terminal on the cable end, as shown below:



3. Insert the cables through the cable glands GEN, LOAD, and GRID and connect the cables to the corresponding L and N terminals. Then, use a standard torque to tighten the screws on the terminals to secure the cable connection.







☐ 8. Connect the battery to the inverter

About this task

Brand	Compatible batteries models
SAJ	B2-5.0-LV1 and B2-5.0-LV2

Notes:

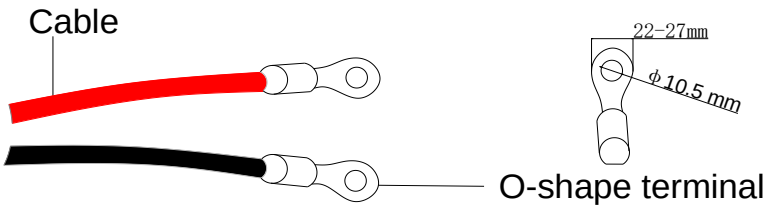
- For battery details, refer to the B2-5.0-(LV1, LV2) User Manual.
- The H2 series inverter is only compatible with the batteries listed below. Using of any other untested battery might cause damage to the inverter and thus void the inverter warranty.
- Some utility company or electrical regulation may require a battery isolator to be installed near the inverter. Choose a ≥70A battery isolator for regulation compliance.

Procedure

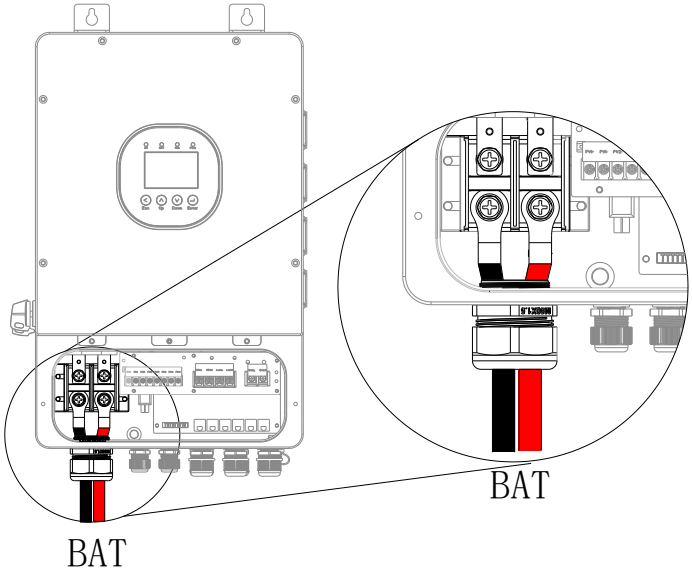
1. Strip the insulation (20-mm/0.79-inch length) on the positive and negative battery cable ends.

Cable	Recommended cable	Recommended torque
BAT+ and BAT-	● To H2-(5K-6K)-LS2: 4 AWG ● To H2-(7.6K-8K)-LS2: 1 AWG ● To H2-10K-LS2: 0 AWG	44 LB-IN (5 N·m)

If needed, you can put a terminal on the cable end, as shown below.



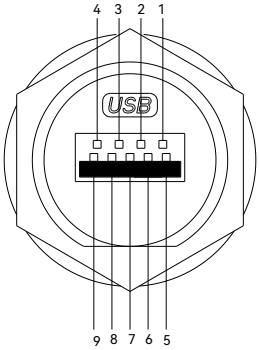
2. Insert the cables through the cable gland BAT and connect the cables to the battery terminals BAT+ and BAT- in the junction box.



☐ 9. Assemble the communication connection

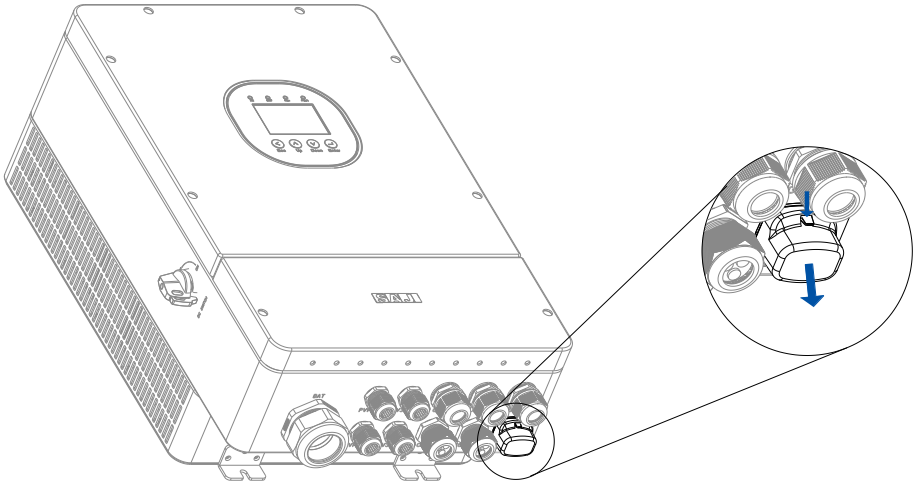
1. Install the communication module.

   An RS232 USB communication port is provided at the bottom of the junction box. This port is used to connect the communication module, such as a Wi-Fi module or an AIO3 module.

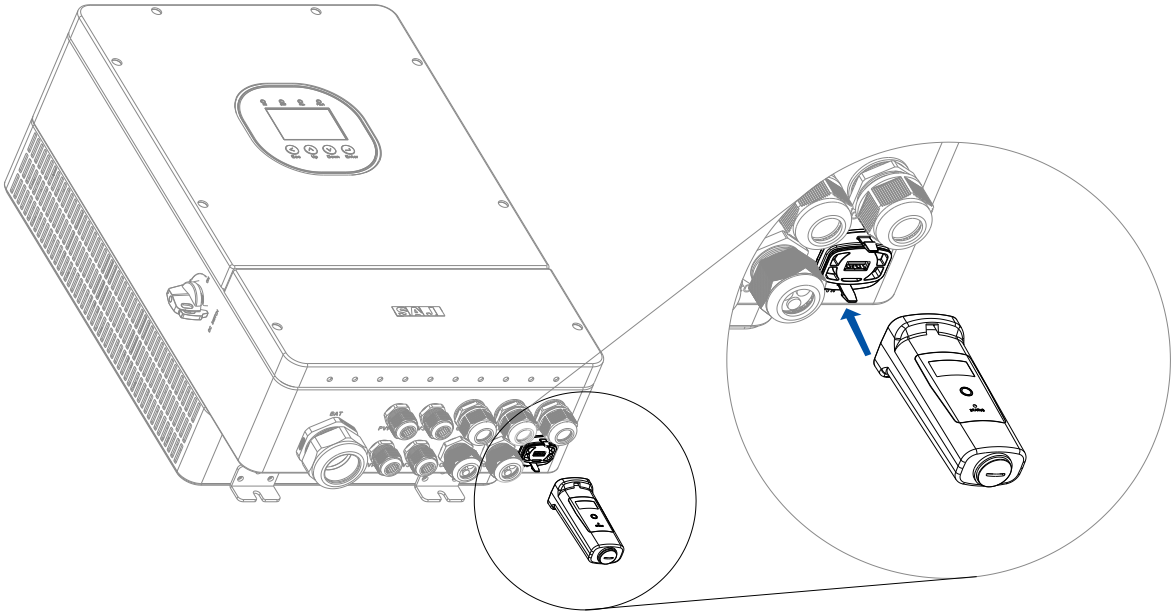


Pin	Description
1	GND: Ground wire
2	485A: 485 communication pin A
3	485B: 485 communication pin B
4	CANL: Low speed CAN signal
5	+5V: Power supply
6	232RX: Send data
7	232TX: Receive data
8	CANH: High speed CAN signal
9	NULL: Null

   a. Remove the cover on the 4G/WIFI port.



b. Insert the communication module to the 4G/WIFI port and secure the module by rotating the nut.

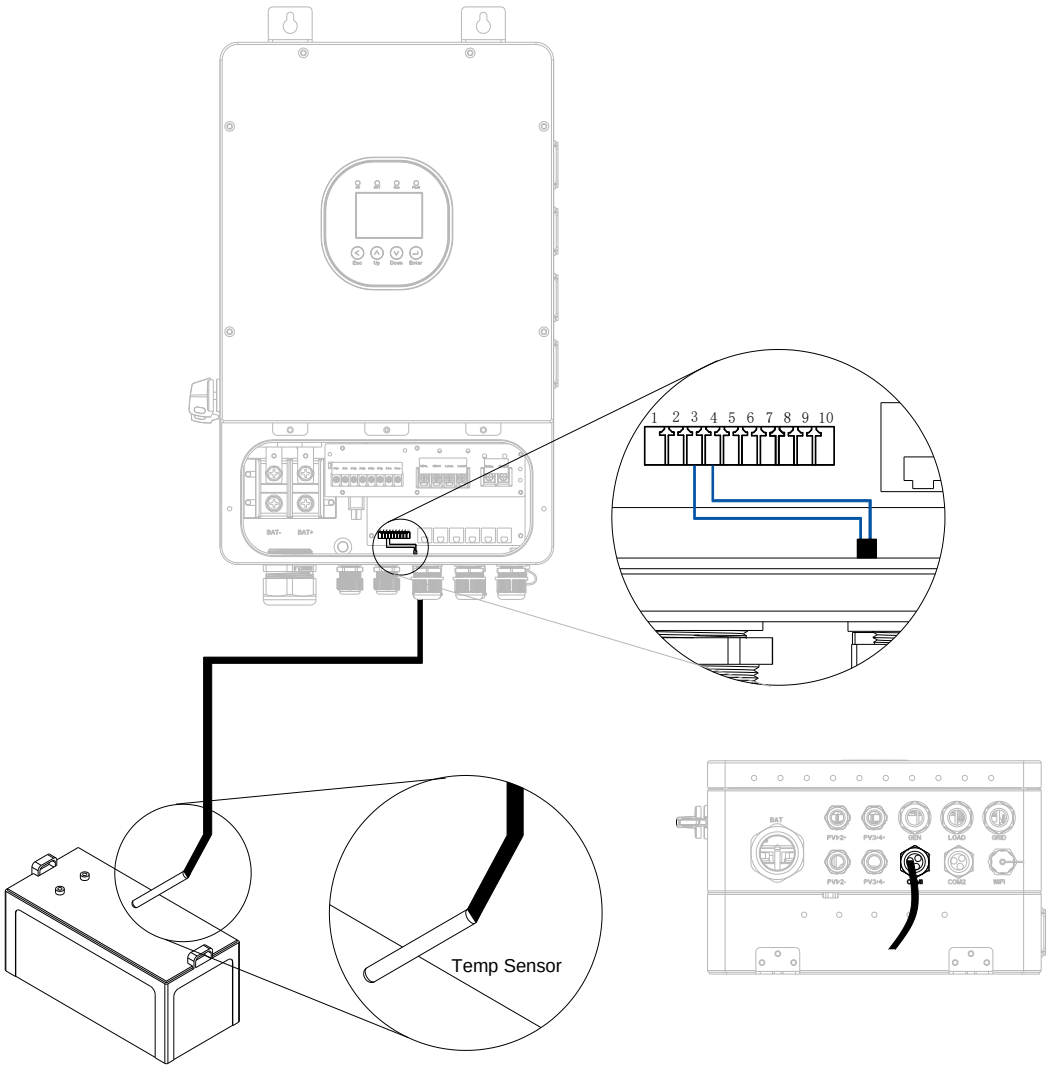


2. (Optional) Connect the battery temperature sensor.

   If lead-acid batteries are used, you need to use the battery temperature sensor.

   a. Connect the battery temperature sensor to the battery.

   b. Insert the cable of the battery temperature sensor through the COM1 cable gland. Then, connect the two wires to terminals 3 and 4 on the communications terminal block.



3. Connect the communication cables.

- **RJ45 ports**

a. Per your needs, prepare communication cables according to the pin definitions of communication ports on the inverter.

MODBUS_RS485	
1	NC
2	NC
3	NC
4	NC
5	NC
6	NC
7	RS485-B2-
8	RS485-A2+

BMS_CAN	
1	NC
2	NC
3	NC
4	CANH
5	CANL
6	NC
7	NC
8	NC

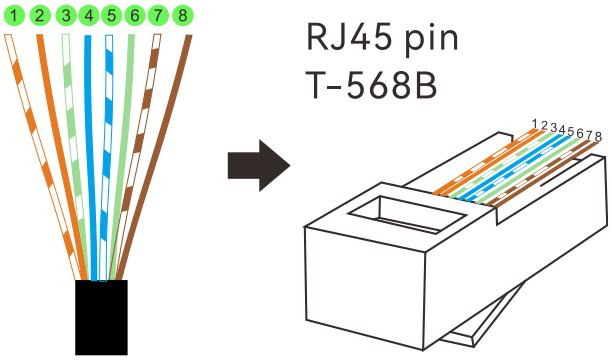
Parallel-1	
1	CANH
2	CANL
3	BKUP TO GRID_BUS+
4	CAN1_H
5	CAN1_L
6	CARRY_BUS+
7	GRID TO BKUP_BUS+
8	GND_S

Parallel-1	
1	CANH
2	CANL
3	BKUP TO GRID_BUS+
4	CAN1_H
5	CAN1_L
6	CARRY_BUS+
7	GRID TO BKUP_BUS+
8	GND_S

DRM	
1	DRM 1/5
2	DRM 2/6
3	DRM 3/7
4	DRM 4/8
5	RefGen
6	Com/DRM 0
7	V+
8	V-

METER_RS485	
1	RS485-B1-
2	RS485-A1+
3	NC
4	NC
5	NC
6	NC
7	NC
8	NC

- For meter connection to the METER_RS485 port, only use pin 1 **RS485-B1-** and pin 2 **RS485-A1+**.
- For connection to the MODBUS_RS485 port, only use pin 7 **RS485-B2-** and pin 8 **RS485-A2+**.



b. Insert the prepared communication cables through the cable glands COM1 and COM2 and connect to corresponding RJ45 ports.

RJ45 port	**Through (the cable gland on the inverter)**
MODBUS_RS485 (Reserved for future use)	COM1
BMS_CAN (For communication connection to the battery control unit)	
Parallel-1 (For paralleling scenario)	COM2
Parallel-2 (For paralleling scenario)	
DRM (ONLY applicable to Australia)	
METER_RS485 (For communication connection to the meter)	

- **Terminal block**

Per your needs, prepare communication cables according to the terminals listed as below. Insert the cables through the cable gland COM1 and connect the cables to corresponding terminals.

Number	**Terminal**	**Description**
1	CT1+	For connecting the CT positive cable
2	CT1-	For connecting the CT negative cable
3	BAT_T+	For temperature detection on external lead acid batteries
4	BAT_T-	For temperature detection on external lead acid batteries
5	EX_SD+	Emergency stop
6	GND_S	Emergency stop
7	G	For external generator dry contact

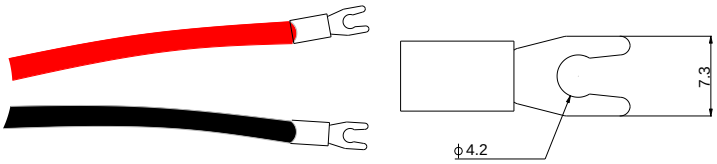
8	G_S	For external generator dry contact
9	+12V_RSD	For connecting 12V power supply
10	GND_S	For connecting 12V power ground

☐ 10. Assemble the communication connection

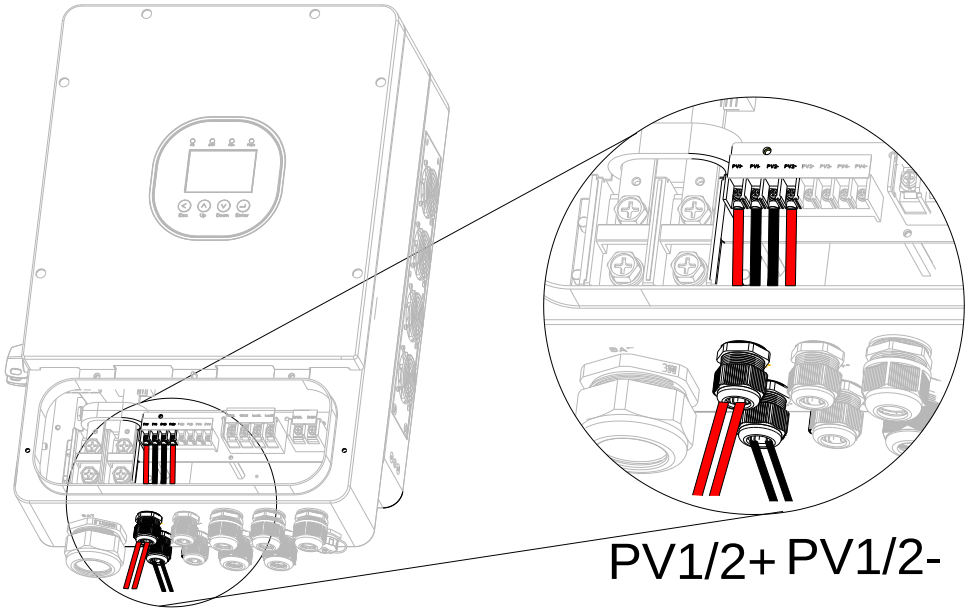
1. Strip off the insulation (20-mm/0.79-inch length) of the cable ends. User cable ferrules if the cable is of multi-strand type。

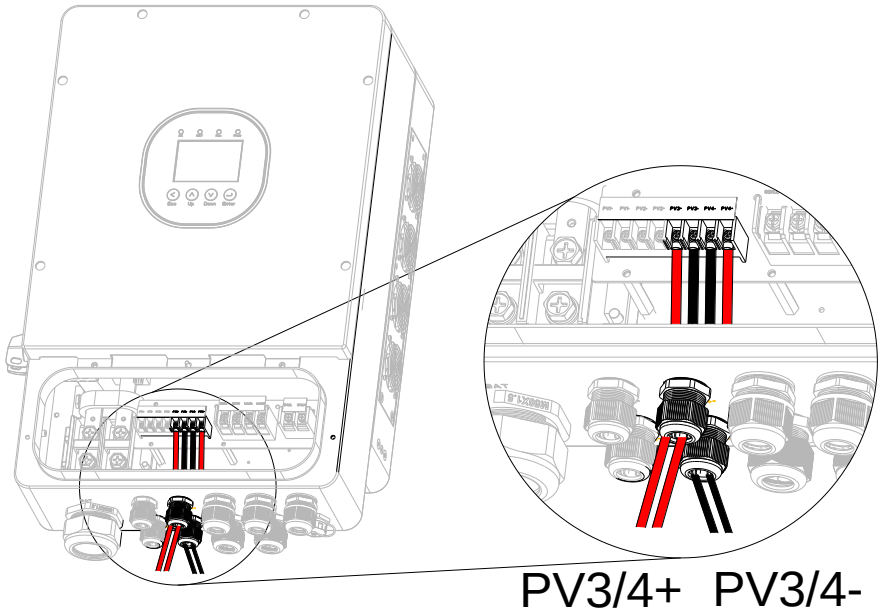
Cable	Recommended cable	Recommended torque
PV+ and PV-	12 AWG	25 LB-IN (1.68 N·m)

If needed, you can put a terminal on the cable end, as shown below.



2. Verify that the DC switch on the left side of the inverter is in OFF position.
3. Insert the PV cables through the PV cable glands and connect the cables to the PV terminals in the junction box.





☐ 11. Close the junction box of the inverter

Install the cover back to the inverter. On both sides of the cover, use the Allen Wrench to tighten the screws.

☐12. Start the system

1. Open the breaker on the grid side.
2. Turn on the DC switch on the inverter.
3. Turn on the battery switch on the battery.
4. Check the LED indicator status on the inverter panel to ensure that the inverter is running properly.

LED indicator	Color	Status	Description
AC	Green	Solid on	The grid is connected and working properly.
BAT	Green	Solid on	The battery is working properly.
Run	Green	Solid on	The inverter is working properly.
Fault	Red	Solid on	The inverter is not working properly.

5. Configure the system on the SAJ App named Elekeeper. For details, refer to the section "Commissioning" in the inverter user manual.
6. If any error occurs, check the error code displayed on the App. For detailed error messages, refer to the section “Troubleshooting” in the inverter user manual.

---End

Installer: _____

