

H2-(8K-20K)-LT2 Quick Guide

This quick guide provides installation operations. For safety precautions and detailed product information, refer to the H2-(8K-20K)-LT2 User Manual on the SAJ Website www.saj-electric.com. You can also scan the QR code below to access all the product documentation.



WARNING

Risk of High Voltage and Electric Shock

- This device is connected directly to the public grid. Installation, maintenance, and repair must only be carried out by qualified electricians.
- Electricians must read and fully understand all the safety regulations contained in this manual, as well as the energy storage system, its working principles, and relevant national and regional standards.
- Before operation, ensure the inverter is completely disconnected from both AC and DC power.
- During operation, wear appropriate personal protective equipment and use insulated tools.
- Failure to follow these instructions may result in serious injury or death.

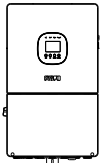
1. Check the outer packing

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

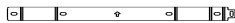
Note: If any serious damage is found or the model is not what you requested, do not unpack the product, and contact your dealer as soon as possible.

2. Check the product packages

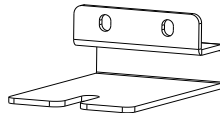
Place the connectors separately after unpacking to avoid confusion for connection of cables.



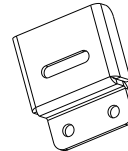
H2 inverter x1



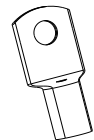
Wall mounting bracket x1



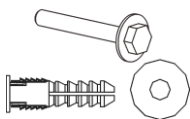
Locking bracket x1



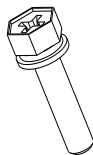
Security bracket x1



Cable lug x4



M6*50 screw suite x5



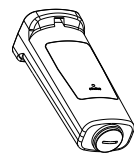
M5*12 screws x5



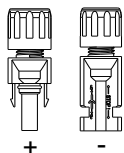
Communication cable x1
(for parallel connection)



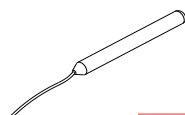
Current Transformer x3



Communication module



¹ PV positive and negative connectors



Battery temperature sensor x1



Hex Wrench x1



² Meter kit (Optional)



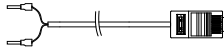
Documents

Note:

¹ For models H2-(8K-15K)-LT2, the package includes 3 PV positive connectors and 3 PV negative connectors.

For models H2-(16K-20K)-LT2, the package includes 4 PV positive connectors and 4 PV negative connectors.

² The meter kit contains the following items:



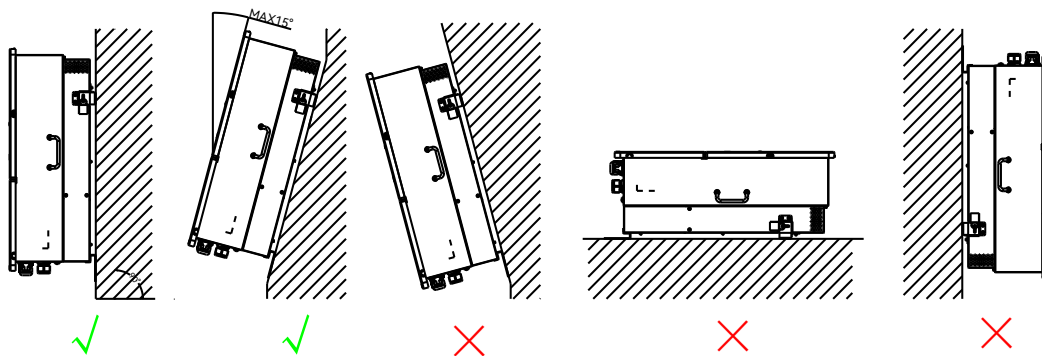
Communication cable
with an RJ45 connector



Smart meter

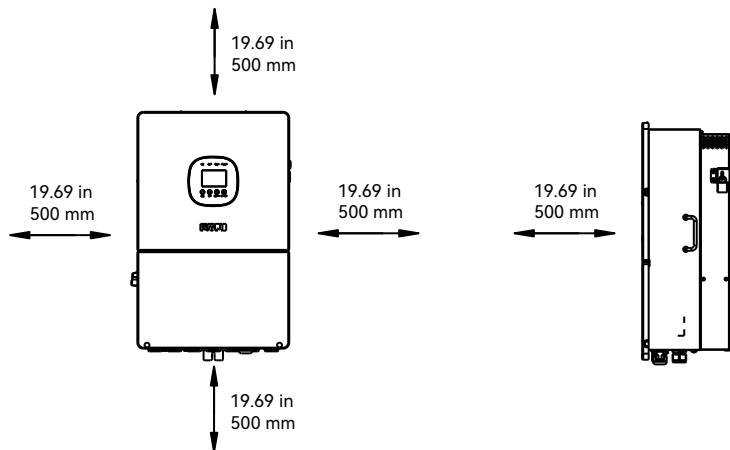
3. Check installation method and gaps

- The inverter uses natural convection cooling and can be installed indoors or outdoors.
- Do not expose the inverter to direct sunlight because overheating might cause power derating.
- Mount vertically with tilting angle no greater than 15°. Never install the inverter horizontally or upside down.



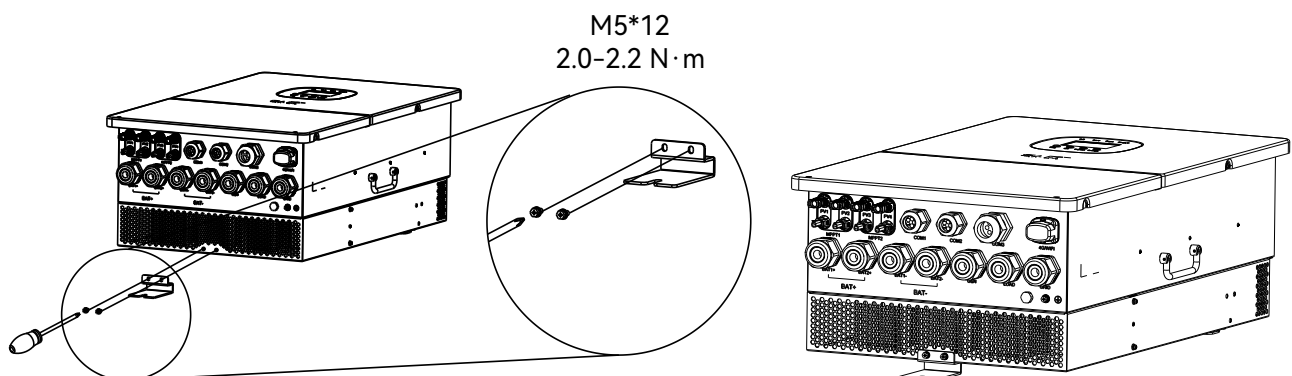
- The minimum clearance requirement for inverter installation is shown below.

For one or multiple inverters, maintain a minimum clearance of 500 mm on all sides of each inverter for ventilation and service access.



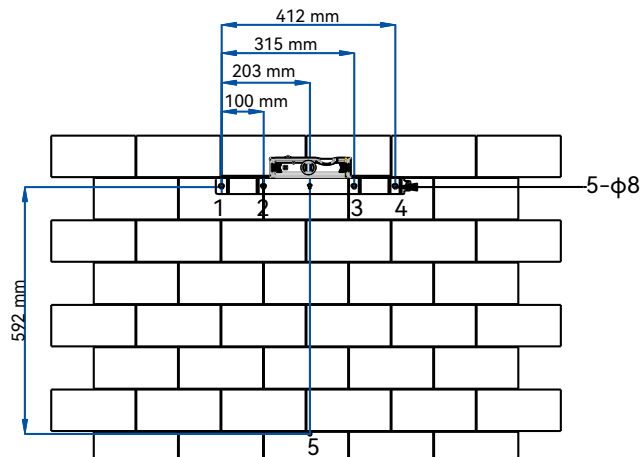
4. Install the inverter onto the wall

1. Install the locking bracket to the inverter.

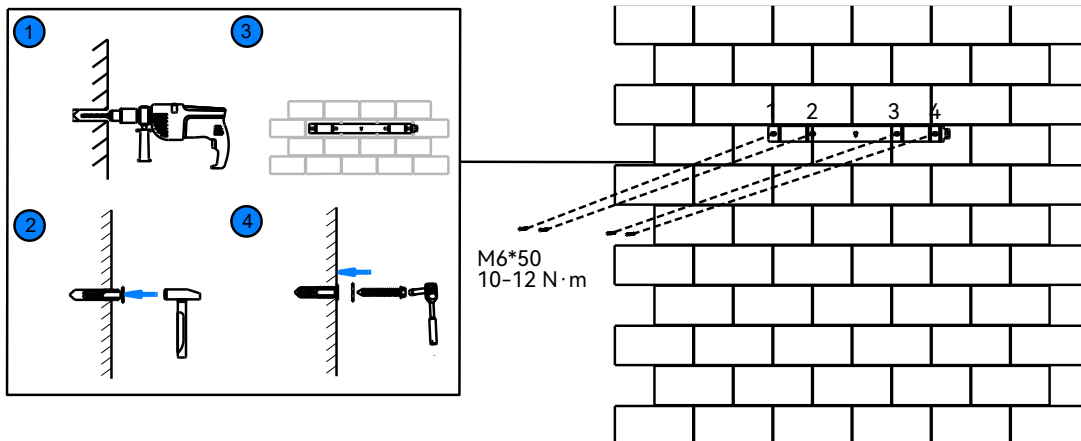


- Place the wall mounting bracket horizontally onto the wall by using a gradienter. Mark the five holes on the wall (hole 1, 2, 3, 4 and 5).

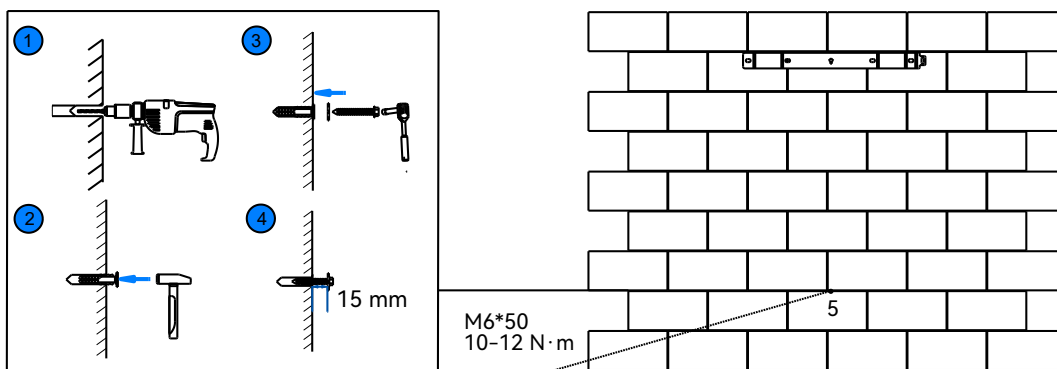
Note: Reserve enough distance at the bottom to install the cables.



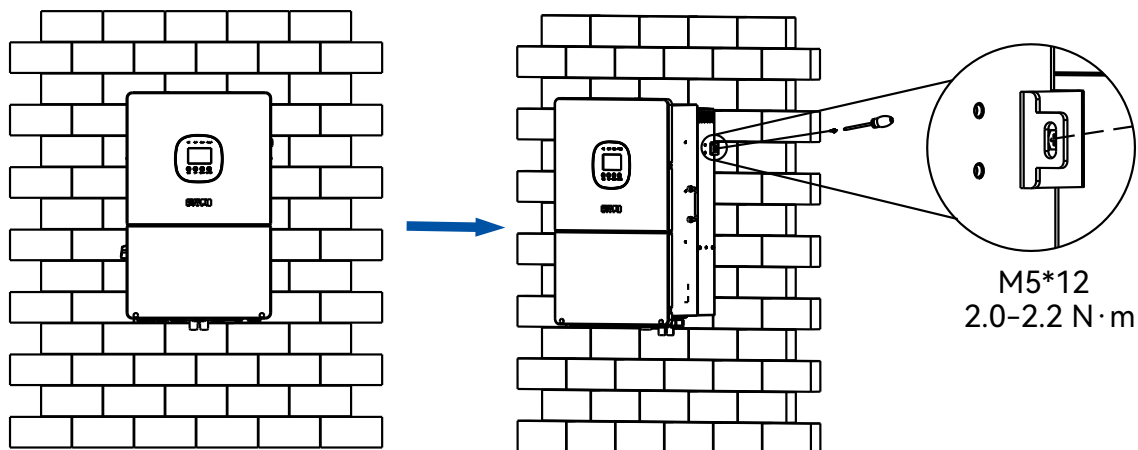
- Drill four holes and install the mounting bracket onto the wall.
 - Drill four holes (hole 1, 2, 3 and 4) according to the marked position.
 - Use a rubber mallet to insert four expansion tubes into the holes.
 - Align the holes of the mounting bracket to the drilled holes in the wall.
 - Insert the screws into the drilled holes to fix the mounting bracket to the wall.



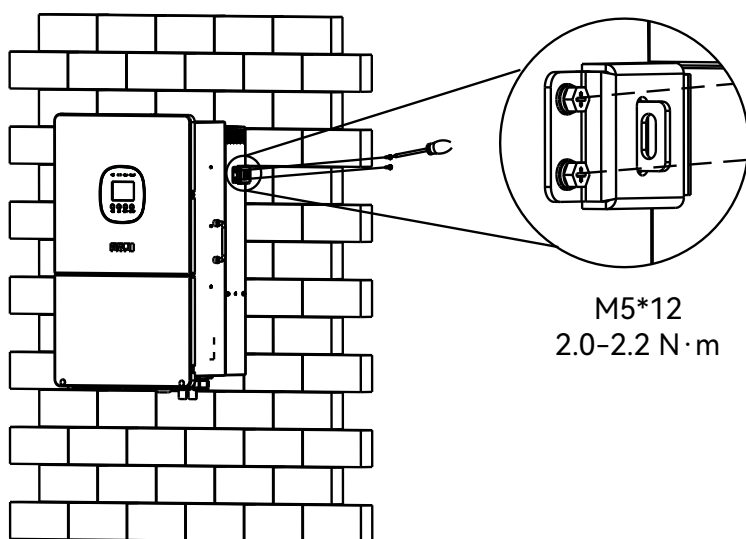
- Drill hole 5 and pre-tighten the screw.
 - Drill hole 5 according to the marked position.
 - Use a rubber mallet to insert an expansion tube into the hole.
 - Insert and pre-tighten the screw.
 - Leave a 15 mm gap for mounting the inverter to the bracket.



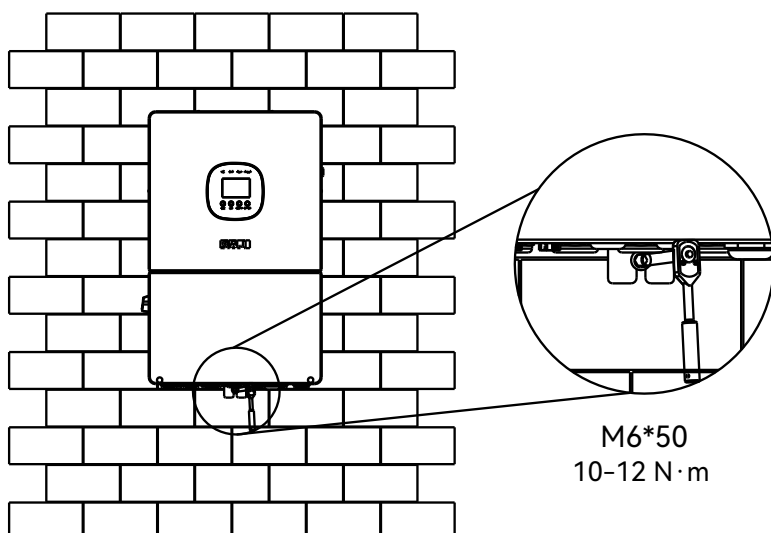
5. Mount the inverter onto the wall mounting bracket. Insert and tighten the screw.



6. Insert and tighten another two screws to secure the security bracket.



7. Tighten the screw at the locking bracket.



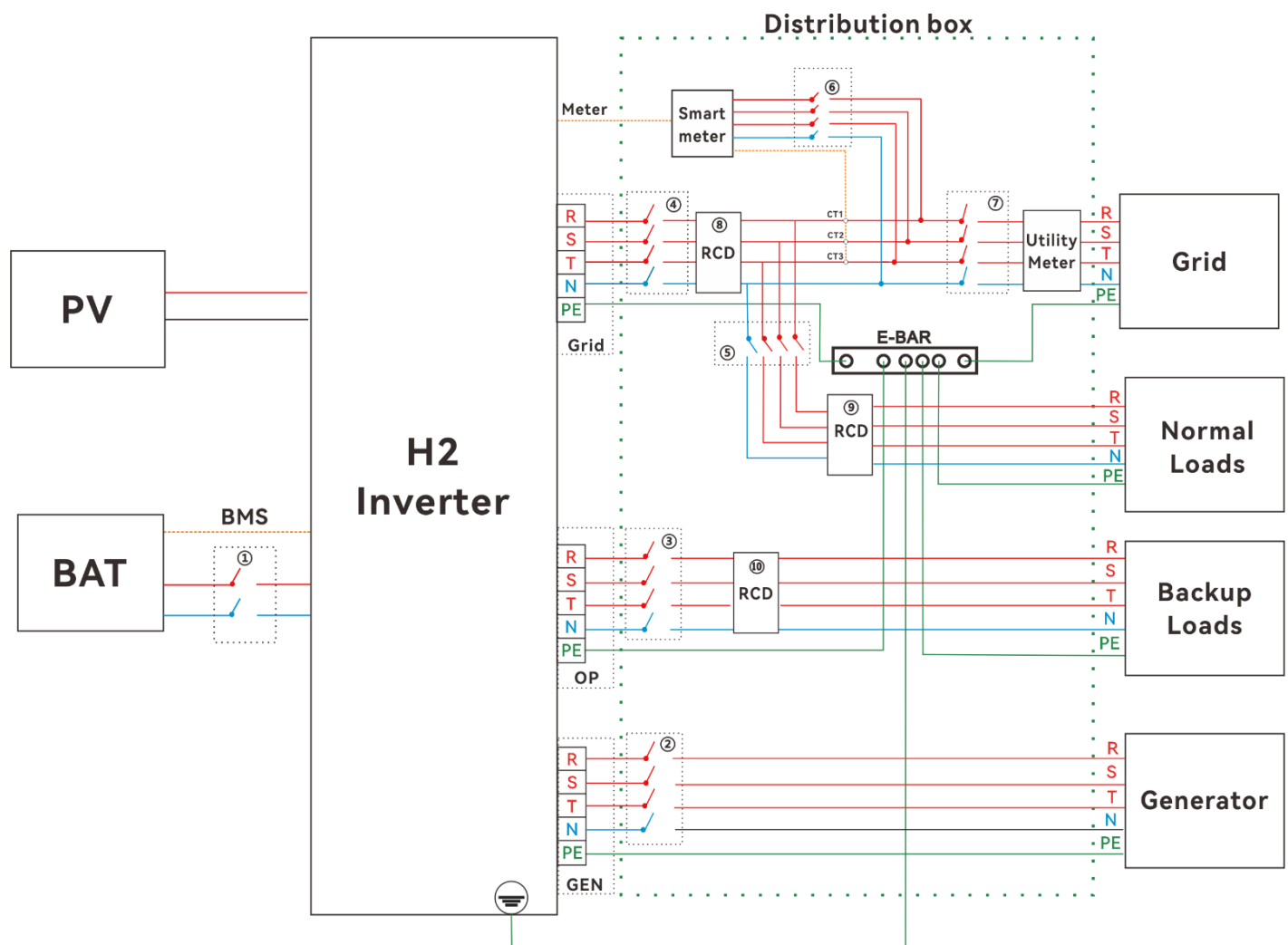
5. Install the battery

The H2 series inverter is compatible with the **B3-5.0-LV** SAJ batteries. For details, refer to the corresponding battery user manual.

6. Prepare the circuit breakers and cables

For safety operation and regulation compliance, prepare appropriate circuit breakers and cables based on different connection scenarios. Check the recommended size in the following tables. You may choose other sizes based on real needs.

- Basic system connection

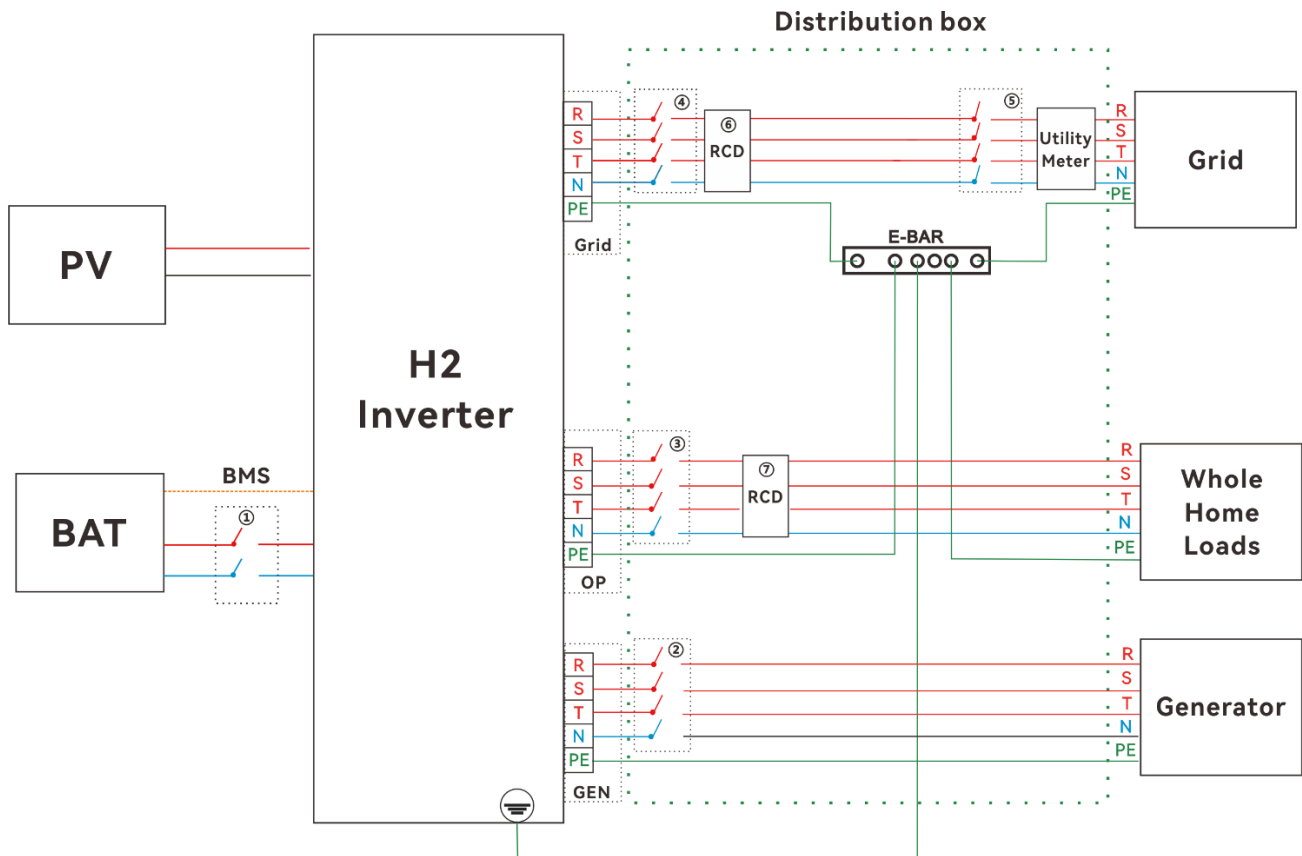


Model	① DC breaker	② AC breaker for generator	③ AC breaker for backup loads	④ AC breaker for grid	⑤⑥ AC breaker for normal loads/smart meter	⑦ AC breaker for utility meter	⑧ RCD for grid	⑨⑩ RCD for normal and backup loads
H2-8K-LT2	200 A/60 V	16 A/400 V	16 A/400 V	32 A/400 V	Depends on Loads and Meter	Main breaker	300 mA RCD	30 mA RCD
H2-10K-LT2	250 A/60 V	20 A/400 V	20 A/400 V	40 A/400 V				
H2-12K-LT2	250 A/60 V	25 A/400 V	25 A/400 V	50 A/400 V				
H2-14K-LT2	320 A/60 V	32 A/400 V	32 A/400 V	63 A/400 V				
H2-15K-LT2	320 A/60 V	32 A/400 V	32 A/400 V	63 A/400 V				
H2-16K-LT2	320 A/60 V	32 A/400 V	32 A/400 V	63 A/400 V				
H2-18K-LT2	400 A/60V	40 A/400 V	40 A/400 V	80 A/400 V				
H2-20K-LT2	400 A/60V	40 A/400 V	40 A/400 V	80 A/400 V				

Cable	Recommended Specification (mm ²)				Stripping Length (mm)
	H2-8K-LT2	H2-10K-LT2	H2-12K-LT2	H2-14K-LT2	
Ground	6-10				15
PV	4				8-10
Battery	30		40		15
GEN	8-10				12
LOAD/GRID	10				15

Cable (Copper)	Recommended Specification (mm ²)				Stripping Length (mm)
	H2-15K-LT2	H2-16K-LT2	H2-18K-LT2	H2-20K-LT2	
Ground	6-10				15
PV	4				8-10
Battery	40	50			15
GEN	8-10				12
LOAD/GRID	10				15

- Whole home backup system connection



Model	① DC breaker	② AC breaker for generator	③ AC breaker for whole home loads	④ AC breaker for grid	⑤ AC breaker for utility meter	⑥ RCD for grid	⑦ RCD for whole home loads
H2-8K-LT2	200 A/60 V	16 A/400 V	100 A/400 V	100 A/400 V	Main breaker	300 mA RCD	30 mA RCD
H2-10K-LT2	250 A/60 V	20 A/400 V	100 A/400 V	100 A/400 V			
H2-12K-LT2	250 A/60 V	25 A/400 V	100 A/400 V	100 A/400 V			
H2-14K-LT2	320 A/60 V	32 A/400 V	100 A/400 V	100 A/400 V			
H2-15K-LT2	320 A/60 V	32 A/400 V	100 A/400 V	100 A/400 V			
H2-16K-LT2	320 A/60 V	32 A/400 V	100 A/400 V	100 A/400 V			
H2-18K-LT2	400 A/60V	40 A/400 V	100 A/400 V	100 A/400 V			
H2-20K-LT2	400 A/60V	40 A/400 V	100 A/400 V	100 A/400 V			

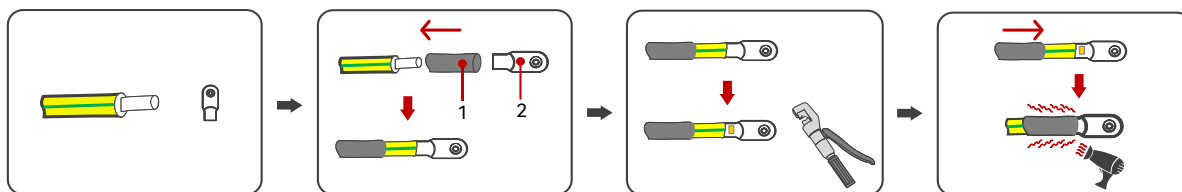
Cable (Copper)	Recommended Specification (mm ²)								Stripping Length (mm)
	H2-8K-LT2	H2-10K-LT2	H2-12K-LT2	H2-14K-LT2	H2-15K-LT2	H2-16K-LT2	H2-18K-LT2	H2-20K-LT2	
Ground	16								15
PV	4								8-10
Battery	30		40				50		15
GEN	8-10								12
LOAD/GRID	16								15

Note:

- The inverter is not compatible with aluminum cables. Only copper cables are allowed.
- If the inverter is installed far away from the grid connection point, select a larger cable size to ensure that the voltage drops from the grid connection point to the inverter is within 2% of the grid voltage.
- Do not connect multiple inverters to one AC breaker.

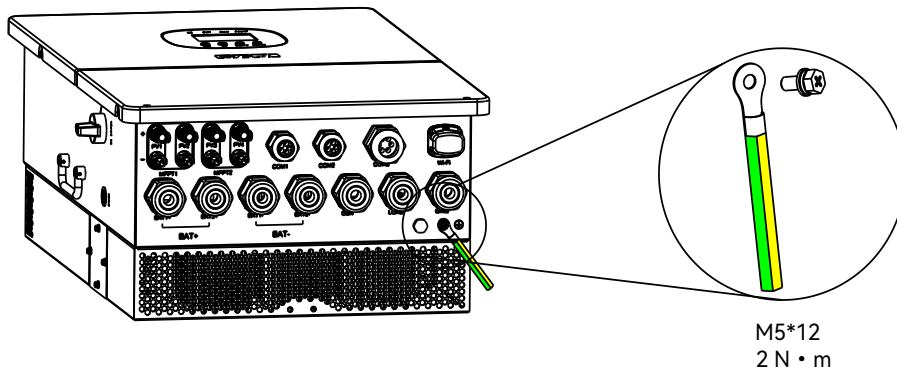
7. Connect the grounding cable

1. Prepare a cable with a conductor cross-sectional area of 6-10 mm² (basic system connection) or 16 mm² (whole home back-up system connection).
2. Assemble the cable and OT/DT terminal.



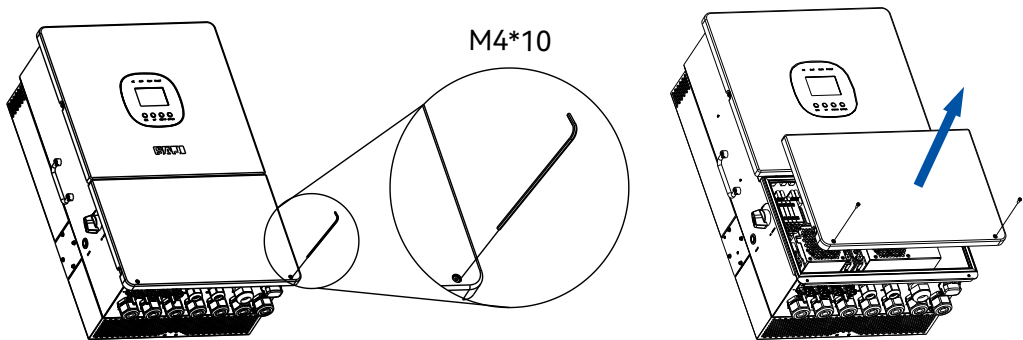
1-Heat shrink tube 2-OT/DT terminal

3. Remove the screw on the ground terminal and secure the cable.

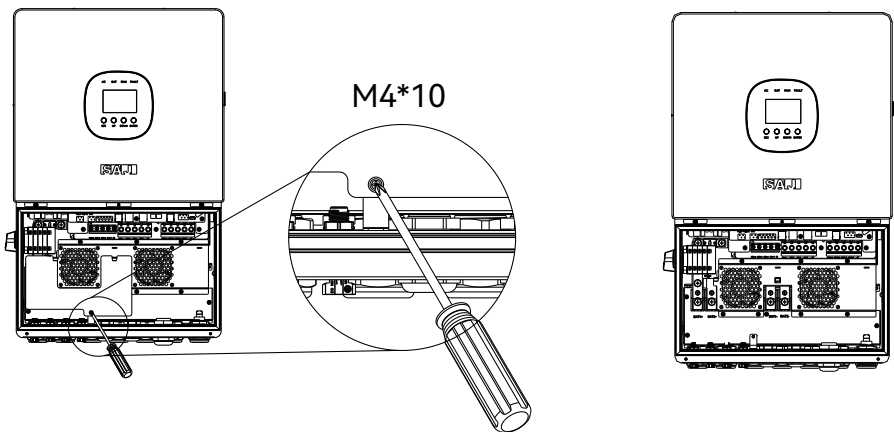


8. Open the junction box of the inverter

- Loosen the two screws on the cover to remove the cover.



- Use a screwdriver to loosen the internal cover. Lift the cover outwards.



9. Connect the battery to the inverter

The H2 series inverter is compatible with the following SAJ batteries. For details, refer to the corresponding battery user manual.

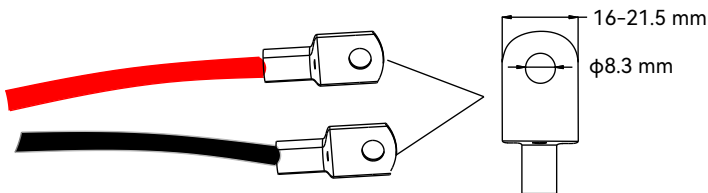
Brand	Compatible battery model
SAJ	B3-5.0-LV

Note:

- For batteries from other suppliers, consult SAJ product support. Do not use untested battery which may cause damage to the inverter and thus void the inverter warranty.
 - Some utility companies or electrical regulations may require a battery isolator to be installed near the inverter. Choose a $\geq 70\text{A}$ battery isolator for regulation compliance.
- Prepare the cables and strip the insulation on the positive and negative battery cable ends.

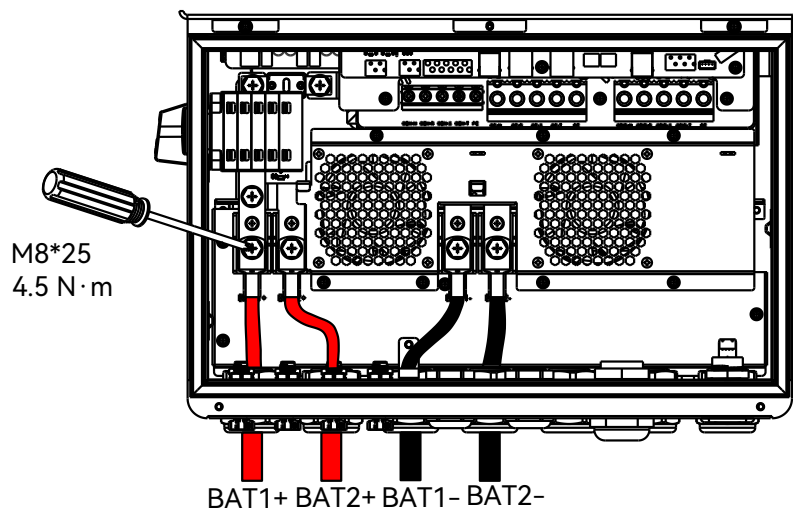
Cable (Copper)	Recommended Specification (mm ²)			Stripping Length (mm)	Recommended torque
	H2-(8K-10K)-LT2	H2-(12K-15K)-LT2	H2-(16K-20K)-LT2		
BAT+ and BAT-	30	40	50	15 	4.5 N·m / 39.83 LB-IN

- Crimp an terminal lug on the cable end shown as follows:

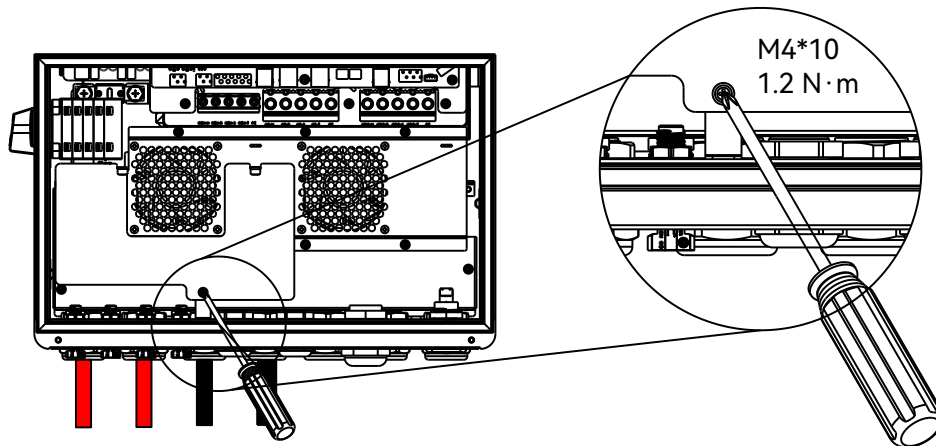


- Insert the cables through the cable glands **BAT 1+/2+** and **BAT 1-/2-**.

Connect the cables to the battery terminals **BAT 1+/2+** and **BAT 1-/2-** in the junction box.



- Install the inner cover back to the inverter and tighten the screws.



10. Assemble the AC-side electrical connection

⚠ WARNING

Risk of high voltage and electric shock

- Before carrying out any wiring operations, ensure that the device is powered off.
- Before applying power to the device, ensure that all connections are made correctly, in accordance with the instructions in this manual, and with local wiring codes and regulations. Improper wiring of AC conductors can result in electrical failure or equipment damage.

- Prepare the cables and strip the insulation on the cable ends.

- Basic system connection

Cable (Copper)	Recommended Specification (mm ²)	Stripping Length (mm)	Recommended Torque
	H2-(8K-20K)-LT2		
GEN	8-10	12	2.5 N·m / 22.13 LB-IN
LOAD/GRID	10	15	

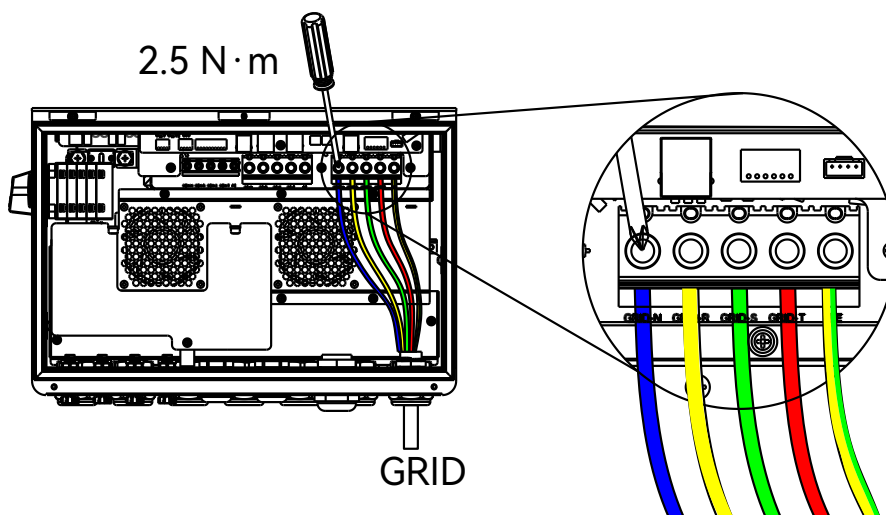
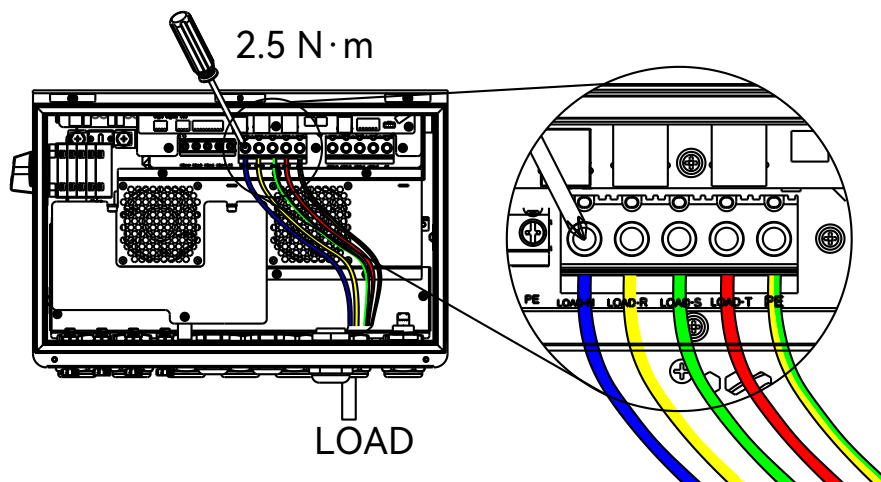
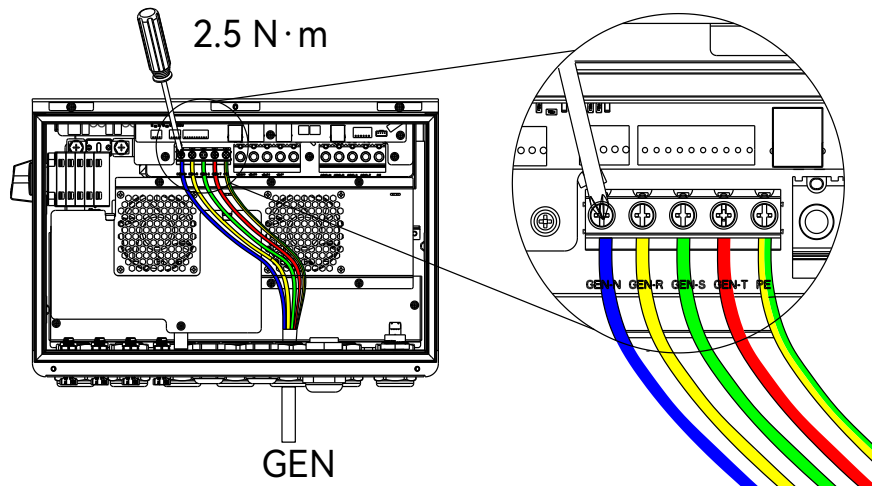
- Whole home backup system connection

Cable (Bypass) (Copper)	Recommended Specification (mm ²)	Stripping Length (mm)	Recommended Torque
	H2-(8K-20K)-LT2		
GEN	8-10	12	2.5 N·m / 22.13 LB-IN
LOAD/GRID	16	15	

- Insert the cables through the cable glands **GEN**, **LOAD**, **GRID** and connect the cables to the corresponding terminals.

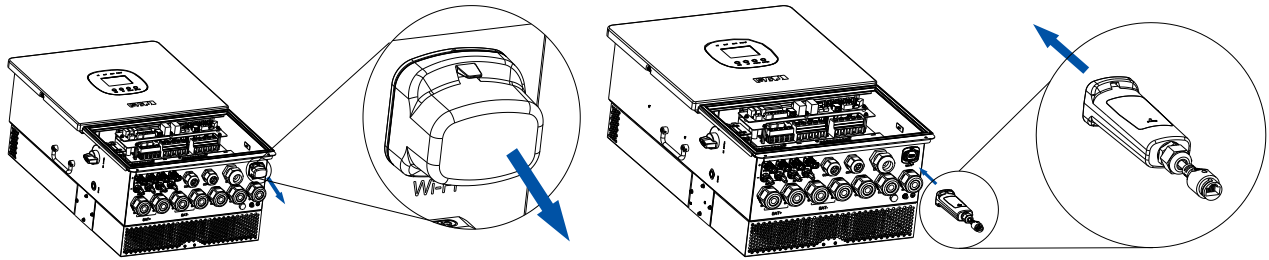
Then, use standard torque to tighten the screws on the terminals to secure the cable connection.

Cable gland	Terminals
GEN	GEN-N, GEN-R, GEN-S, GEN-T, PE
LOAD	LOAD-N, LOAD-R, LOAD-S, LOAD-T, PE
GRID	GRID-N, GRID-R, GRID-S, GRID-T, PE

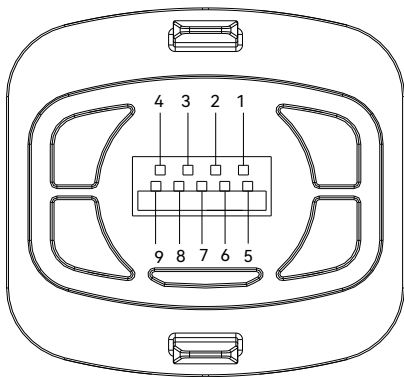


11. Assemble the communication connection

1. Connect communication module
 - a. Remove the cover on the **WIFI** port.
 - b. Insert the communication module to the **WIFI** port.

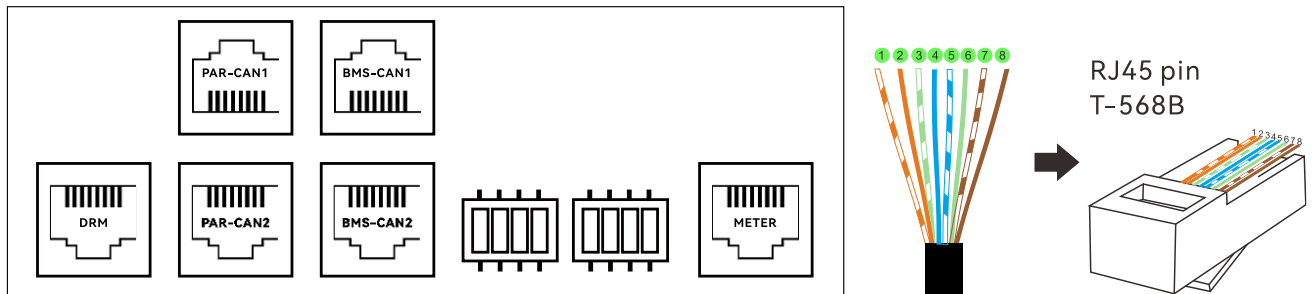


The **WIFI** port is an RS232 USB communication port. See detailed pin definitions below:



Pin	Description
1	+5V: Power supply
2	232TX: Transmit data
3	232RX: Receive data
4	GND
5	GND
6	NULL
7	NULL
8	NULL
9	+5V: Power supply

2. Connect communication cables
 - **RJ45 ports**
 - a. Per your needs, prepare communication cables according to the description of communication ports.



Port	Description
DRM	The inverter complies with AS/NZS 4777.2 and supports the Demand Response Mode (DRM). For detailed connection methods, refer to DRM connection of the User Manual.
PAR-CAN1	Parallel connection is performed through the PAR1-CAN1 and PAR2-CAN2 terminals. For detailed parallel connection methods, refer to Parallel connection of the User Manual.
PAR2-CAN2	
BMS-CAN1	The inverter can communicate with the battery control unit through BMS-CAN1 and BMS-CAN2 terminals. For detailed connection methods, refer to BMS connection of the User Manual.
BMS-CAN2	
METER	The inverter can communicate with the meter through METER terminal. For detailed connection methods, refer to Smart meter connection of the User Manual.

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-	

PAR-CAN1		
1	CANH_PAR	
2	CANL_PAR	
3	GND_S	
4	SYN_BUS+	
5	CANH_DSP	
6	HOST_BUS+	
7	CANL_DSP	
8	TRF_BUS+	

PAR-CAN2		
1	CANH_PAR	
2	CANL_PAR	
3	GND_S	
4	SYN_BUS+	
5	CANH_DSP	
6	HOST_BUS+	
7	CANL_DSP	
8	TRF_BUS+	

BMS-CAN1		
1	NC	
2	NC	
3	NC	
4	CANH	
5	CANL	
6	NC	
7	NC	
8	NC	

BMS-CAN2		
1	NC	
2	NC	
3	NC	
4	CANH	
5	CANL	
6	NC	
7	NC	
8	NC	

METER		
1	RS485_A	
2	RS485_B	
3	NC	
4	NC	
5	NC	
6	NC	
7	RS485_A	
8	RS485_B	

- b. Insert the communication cables through the cable glands **COM2** and **COM3** and connect to corresponding RJ45 ports.

RJ45 port	Through (Cable gland on the inverter)
DRM	COM2
PAR-CAN1	
PAR-CAN2	
BMS_CAN1	
BMS_CAN2	
METER	COM3

• Communication ports

- a. Per your needs, prepare communication cables according to the port description below.

1	2	3	4
DO1+	DO1-	DO2+	DO2-

1	2	3	4
DI+	DI-	EPO+	EPO-

1	2	3	4	5	6	7	8	9	10
GND	12V	R-CT+	R-CT-	S-CT+	S-CT-	T-CT+	T-CT-	NTC+	NTC-

1	2	3	4	5	6
EV-485A	EV-485B	PC-485A	PC-485B	VPP-485A	VPP-485B

Number	Port	Description
1	DO1+	For connecting the positive cable 1 of dry contact output.
2	DO1-	For connecting the negative cable 1 of dry contact output.
3	DO2+	For connecting the positive cable 2 of dry contact output.
4	DO2-	For connecting the negative cable 2 of dry contact output.
1	DI+	For connecting the positive cable of dry contact input.
2	DI-	For connecting the negative cable of dry contact input.
3	EPO+	For connecting the positive cable of external Emergency Power Off switch.
4	EPO-	For connecting the negative cable of external Emergency Power Off switch.
1	GND	Ground terminal for connecting to external devices.
2	12V	12V DC power output terminal for connecting to external devices. Serves as a 12V power supply for external devices such as Energy Management System (EMS), or other accessories compatible with 12V DC.
3	R-CT+	For connecting the positive cable of the R-phase grid current transformer.
4	R-CT-	For connecting the negative cable of the R-phase grid current transformer.

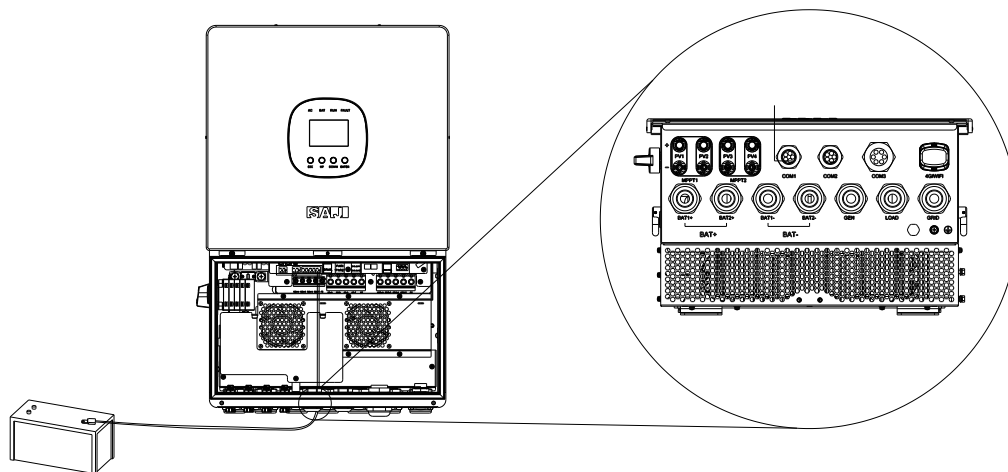
5	S-CT+	For connecting the positive cable of the S-phase grid current transformer.
6	S-CT-	For connecting the negative cable of the S-phase grid current transformer.
7	T-CT+	For connecting the positive cable of the T-phase grid current transformer.
8	T-CT-	For connecting the negative cable of the T-phase grid current transformer.
9	NTC+	For connecting the positive cable of the battery temperature sensor (only for lead-acid batteries).
10	NTC-	For connecting the negative cable of the battery temperature sensor (only for lead-acid batteries).
1	EV-485A	For connecting cable A of EV charger.
2	EV-485B	For connecting cable B of EV charger.
3	PC-485A	For connecting cable A of personal computer.
4	PC-485B	For connecting cable B of personal computer.
5	VPP-485A	For connecting cable A of virtual power plant.
6	VPP-485B	For connecting cable B of virtual power plant.

- b. Insert the cables through the cable glands **COM1** and **COM3** and connect the cables to the corresponding ports.

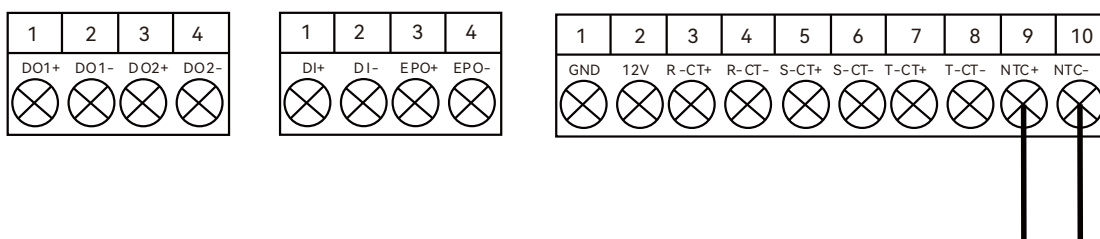
Communication ports	Through (Cable gland on the inverter)
DO1+ / DO1- / DO2+ / DO2-	COM1
DI+ / DI- / EPO+ / EPO-	
GND / 12V	
R-CT+ / R-CT-	
S-CT+ / S-CT-	
T-CT+ / T-CT-	
NTC+ / NTC-	
EV-485A / EV-485B	COM3
PC-485A / PC-485B	
VPP-485A / VPP-485B	

3. Connect the battery temperature sensor (for lead-acid batteries)

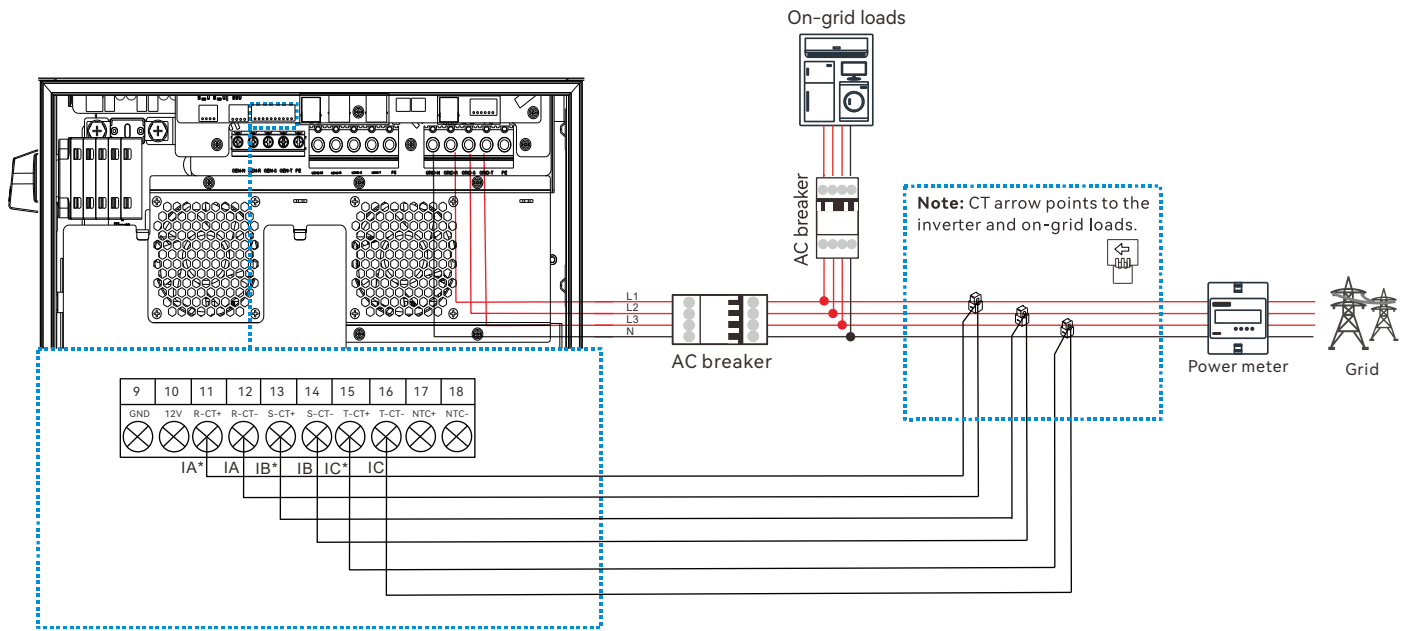
- a. Connect the battery temperature sensor to the battery.
b. Insert the cable of the battery temperature sensor through the **COM1** cable gland.



- c. Connect the two wires to ports **NTC+** and **NTC-**.



4. Connect the current transformer (without smart meter)
 - a. Clamp three CTs to **Grid L1, L2, L3**.
 - b. Connect the three CTs to the inverter's CT communication ports **R-CT+, R-CT-, S-CT+, S-CT-, T-CT+, T-CT-**.



12. Assemble the PV-side electrical connection

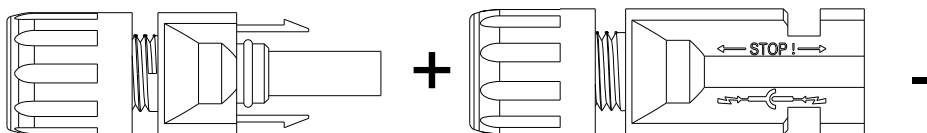
1. Prepare the PV cables according to the following specification.

Note: For models H2-(8K-15K)-LT2, prepare 3 PV positive cables and 3 PV negative cables.

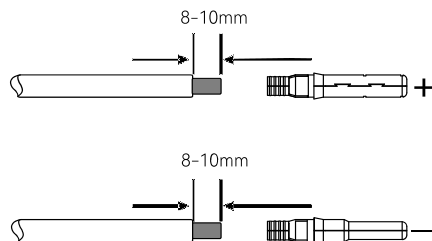
For models H2-(16K-20K)-LT2, prepare 4 PV positive cables and 4 PV negative cables.

Cable	Recommended cross-sectional area (mm ²)
PV+ and PV-	4

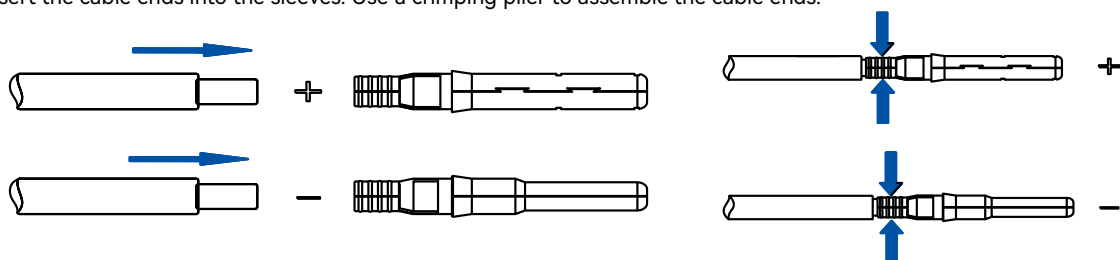
2. Loosen the lock screws on positive and negative connector.



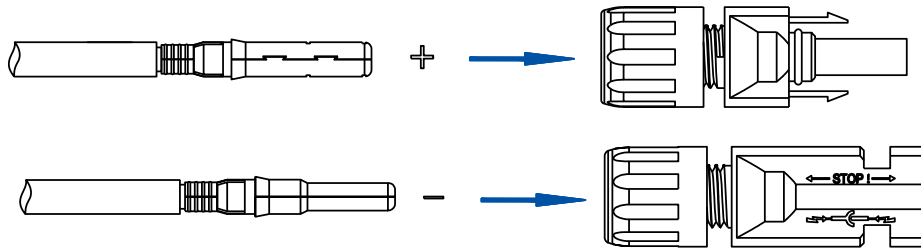
3. Strip off the insulation of the positive and negative cables by 8–10 mm (0.31–0.39 inch).



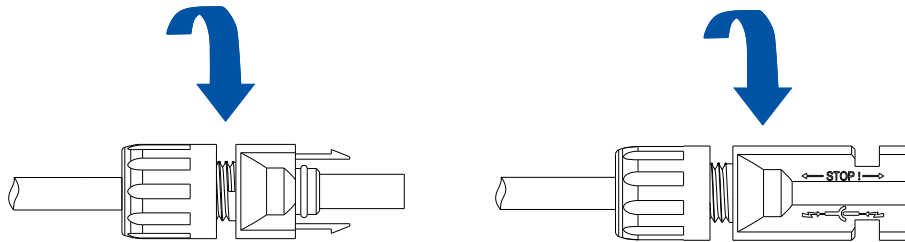
4. Insert the cable ends into the sleeves. Use a crimping plier to assemble the cable ends.



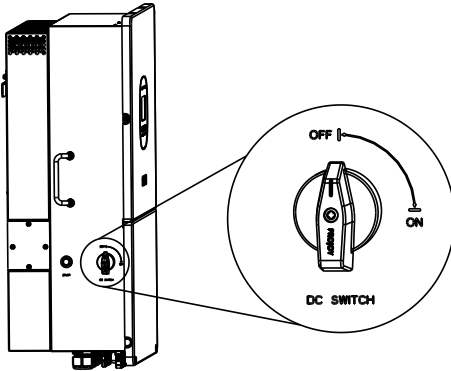
- Insert the assembled cable ends into the positive and negative PV connectors. Gently pull the cables backwards to ensure firm connection.



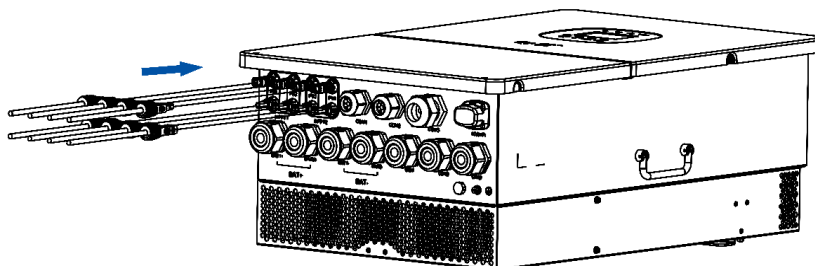
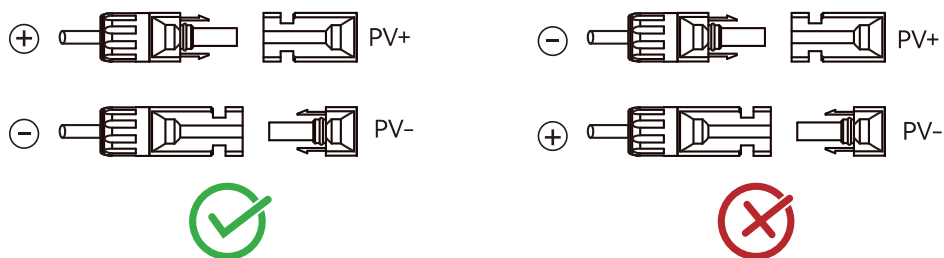
- Tighten the lock screws on the positive and negative cable connectors.



- Make sure that the DC switch is at the **OFF** position.



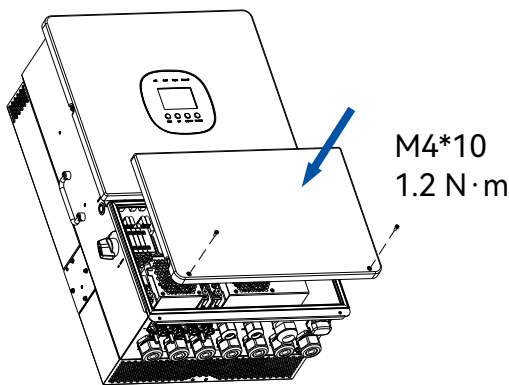
- Connect the positive and negative connectors into the positive and negative DC input terminals of the inverter. A “click” sound should be heard when the contact cable assembly is seated correctly.



Note: For models H2-(8K-15K)-LT2, only 3 PV strings are used; for models H2-(16K-20K)-LT2, all 4 PV strings are used.

13. Close the junction box of the inverter

Use hex wrench to reinstall the cover back to the inverter.



14. Start up the system

1. Close the circuit breaker on the grid side to connect to the grid.
2. Turn on the DC switch on the inverter to connect to the PV array.
3. Turn on the battery switch on the battery to connect to 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 is 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 elekeeper App. For details, refer to Section **Commissioning on the APP** in the inverter user manual.
6. If any error occurs, check the error code displayed on the App. For detailed error messages, refer to Section **Troubleshooting** in the inverter user manual.

Installer: _____



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