

AS3-(3K-6K)-S-(W,G)-PX 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

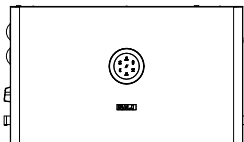
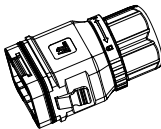
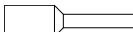
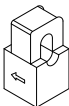
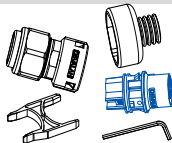
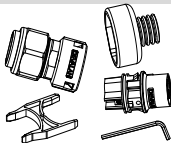


- Check the outer packing package for any damage, such as holes and cracks.
- Check the equipment model.

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

Contents in your shipment are order-dependent. Not all packages listed below may be in your shipment.
Place the connectors separately after unpacking to avoid confusion for connection of cables.

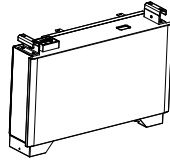
■ AS3 inverter

			
Inverter	24-pin communication cable connector	Insulated terminals x22	¹ Current transformer x2
			
² Backup load connector (blue) kit	² Grid connector (black) kit	Rubber plug x2	³ Printed documents

¹ A 10-meter cable is equipped for each CT.
² The waterproof cover is only available in some configurations.
³ The printed documents include a warranty card, a *Quick Guide*, and a *Configuration Instructions*.

■ BU3 battery pack

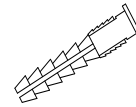
● Base battery



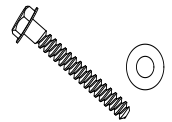
Battery module



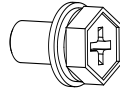
Locking bracket x2



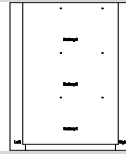
M6*80 expansion tube x2



M6*50 screw x2
Gasket x2

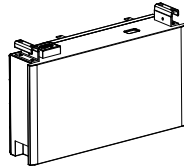


M5*14 screw x4



Cardboard

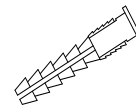
● (Optional) Battery



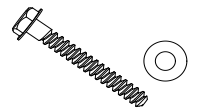
Battery module



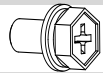
Locking bracket x2



M6*80 expansion tube x2



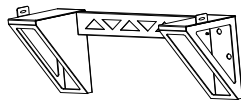
M6*50 screw x2
Gasket x2



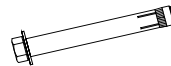
M5*14 screw x4

■ BT3-TV wall-mounting bracket

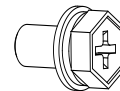
This is an optional package, depending on your system configuration.



Mounting bracket



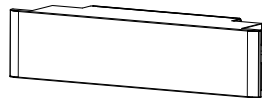
M12*100 expansion bolt x6



M5*14 screw x2

■ BC3-TV battery junction box

This is an optional package, depending on your system configuration.



Battery junction box



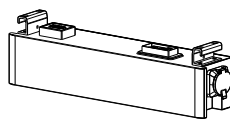
Communication cable



Positive cable
Negative cable

■ CU2 Charger Package

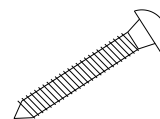
This is an optional package, depending on your system configuration.



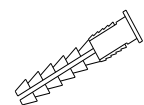
Charger



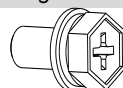
Holster



M4*32 screw x4

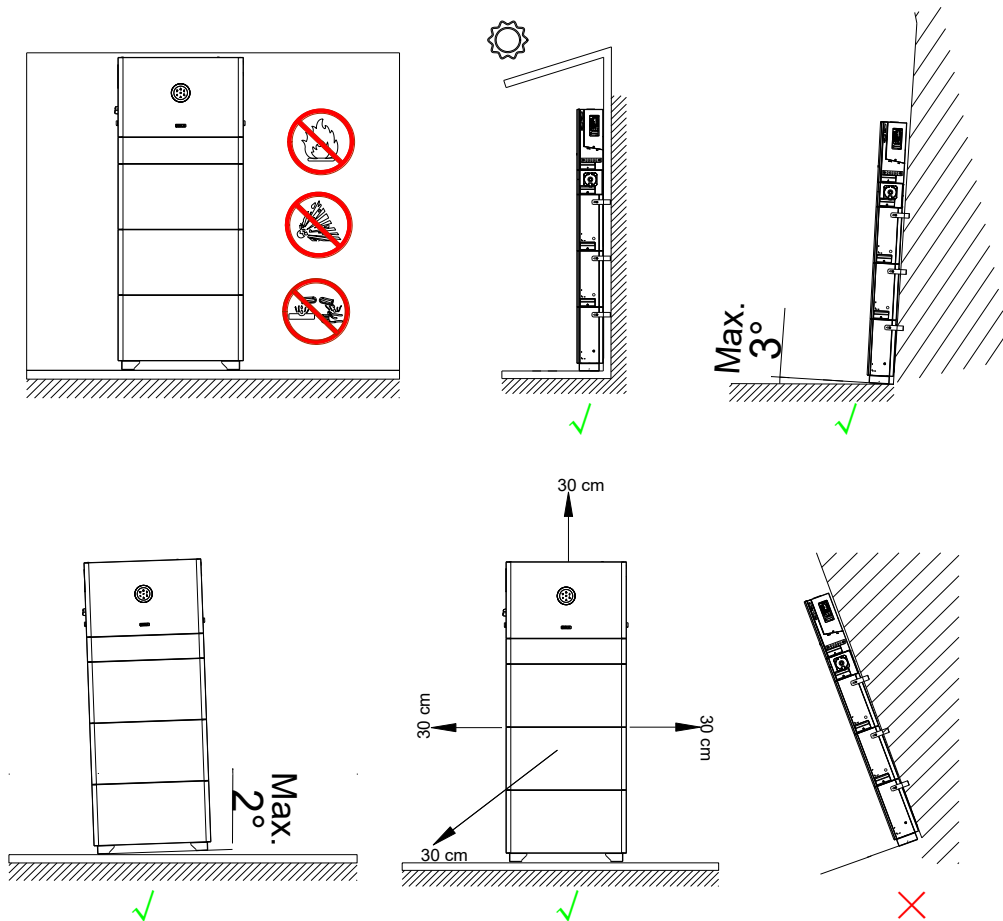


Expansion bolt x4



M5*14 screw x2

3. Check installation ways and gaps



Depending on the mounting manner, choose the following installation procedure:

- Ground-mounting manner: Step 4
- Wall-mounting manner: Step 5

4. Plan the battery stacks

One inverter supports up to eight batteries.

- For ground-mounting, a maximum of four batteries can be installed in one stack.
- For wall-mounting, a maximum of three batteries can be installed in one stack.

Besides the four or three batteries installed in the same stack as the inverter, the other batteries in each stack must be installed with a battery junction box (BC3-TV).

Due to the cable length limitations, the distance between each battery stack is 0.5 meter.

The following arrangement of battery stacks is applicable only for ground mounting:

Quantity of batteries supported by one inverter	Quantity of battery stacks	Quantity of batteries in each stack
1, 2, 3, or 4 batteries	1	1, 2, 3, or 4
5 batteries	2	3, 2
6 batteries	2	3, 3
7 batteries	2	4, 3
8 batteries	2	4, 4

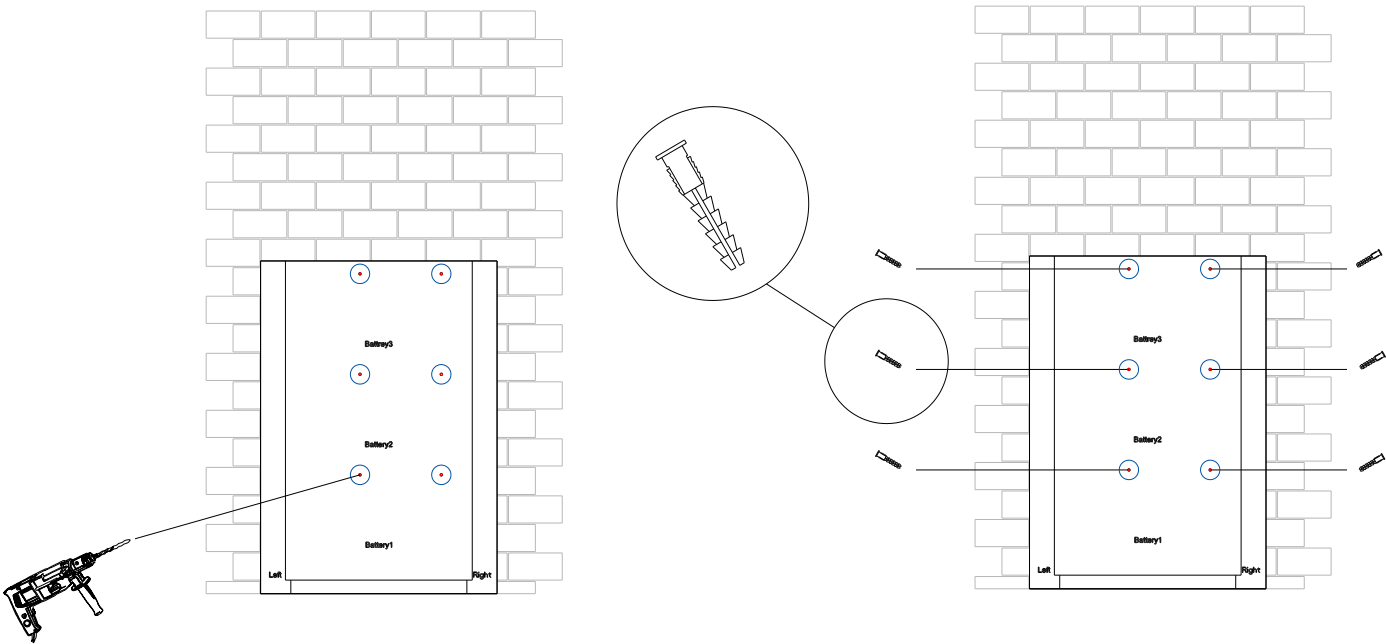
The following arrangement of battery stacks is applicable for both ground mounting and wall-mounting:

Quantity of batteries supported by one inverter	Quantity of battery stacks	Quantity of batteries in each stack
1, 2, or 3 batteries	1	1, 2, or 3
4 batteries	2	2, 2
5 batteries	2	3, 2
6 batteries	2	3, 3
7 batteries	3	3, 2, 2
8 batteries	3	3, 3, 2

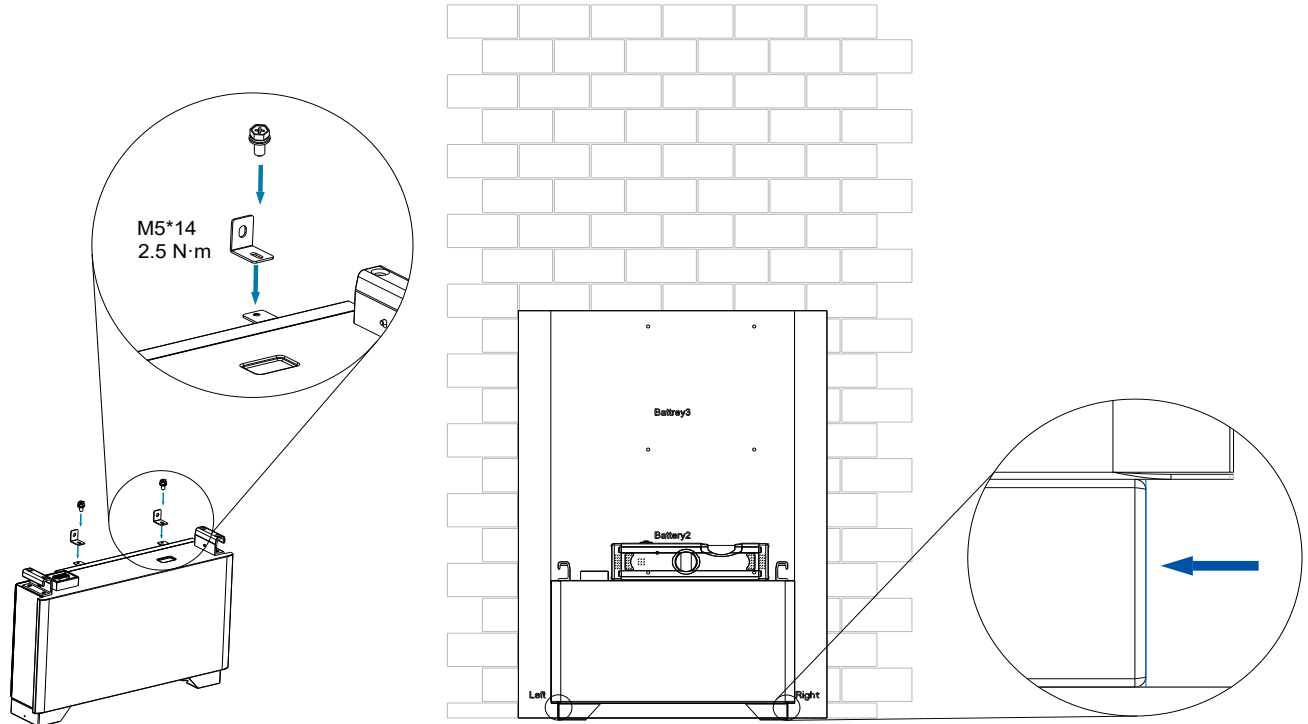
5. Grounding-mounting manner

5.1 Install the base battery (BU3-5.0-(TV1, TV2) -PRO or BU3-5.0-(TV1, TV2)-PRO-BASE)

- Get the cardboard from the base battery package. Place the cardboard on to the wall. Drill six holes (8mm in diameter and 55mm in depth) on the marked positions on the cardboard. Install the provided expansion bolts into the drilled holes.

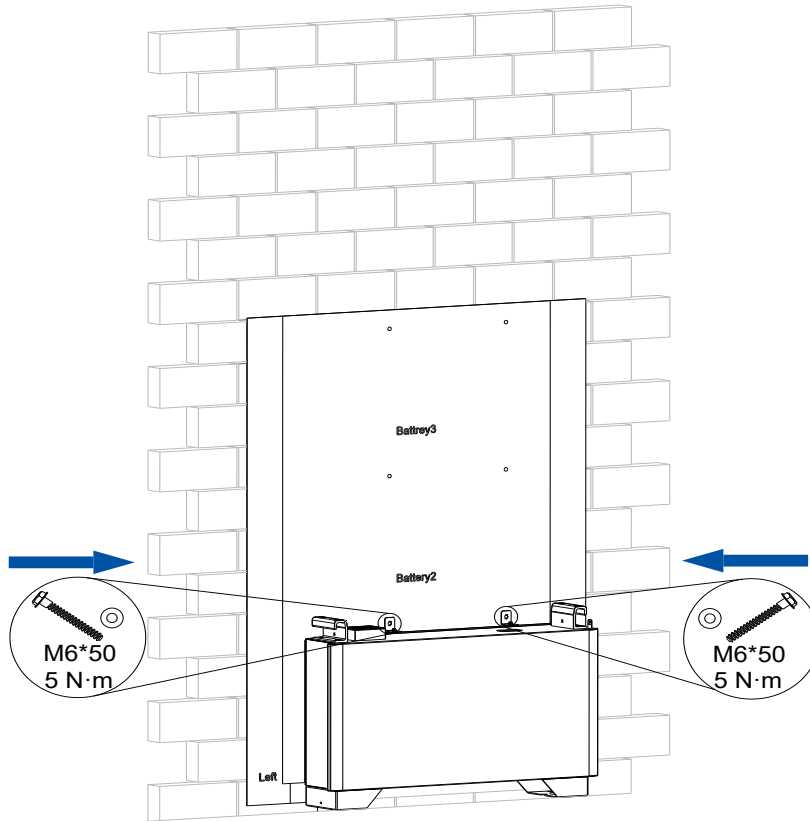


2. Use two M5*14 screws to install two locking brackets to the mounting ears on the top of the battery pack. On the desired installation site, place the base battery on the floor. Make sure that:
 - The left and right battery bases are aligned with the vertical black lines on the cardboard.
 - The battery pack is placed horizontally. (It is recommended that a gradienter be used.)
 - The space between the battery back and the wall surface is 50–65 mm.



- On the top of the battery pack, align the locking brackets to the drilled holes and install M6*50 screws to secure the locking brackets to the wall.

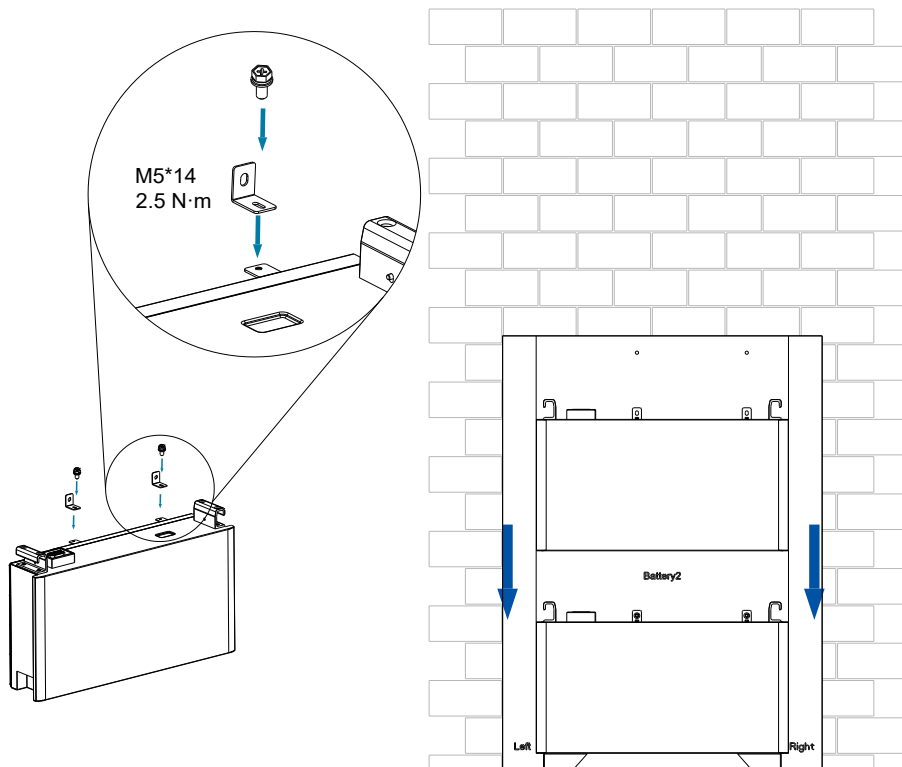
Note: If the battery is installed outdoors, it is suggested to remove the cardboard which is not waterproof.



5.2 (Optional) Install other batteries (BU3-5.0-(TV1, TV2)-PRO)

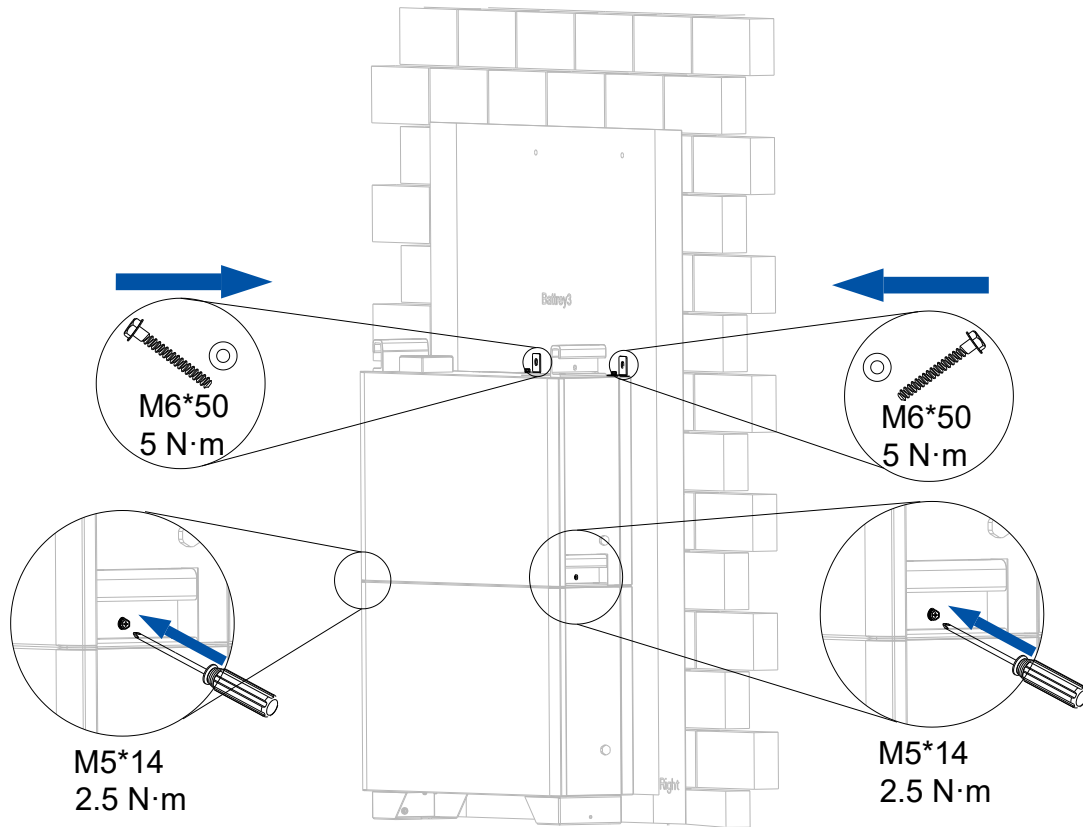
Note: In one stack, up to three batteries are supported.

- Use two M5*14 screws to install two locking brackets to the mounting ears on the top of the battery pack. Place this battery onto the base battery and push it downwards.

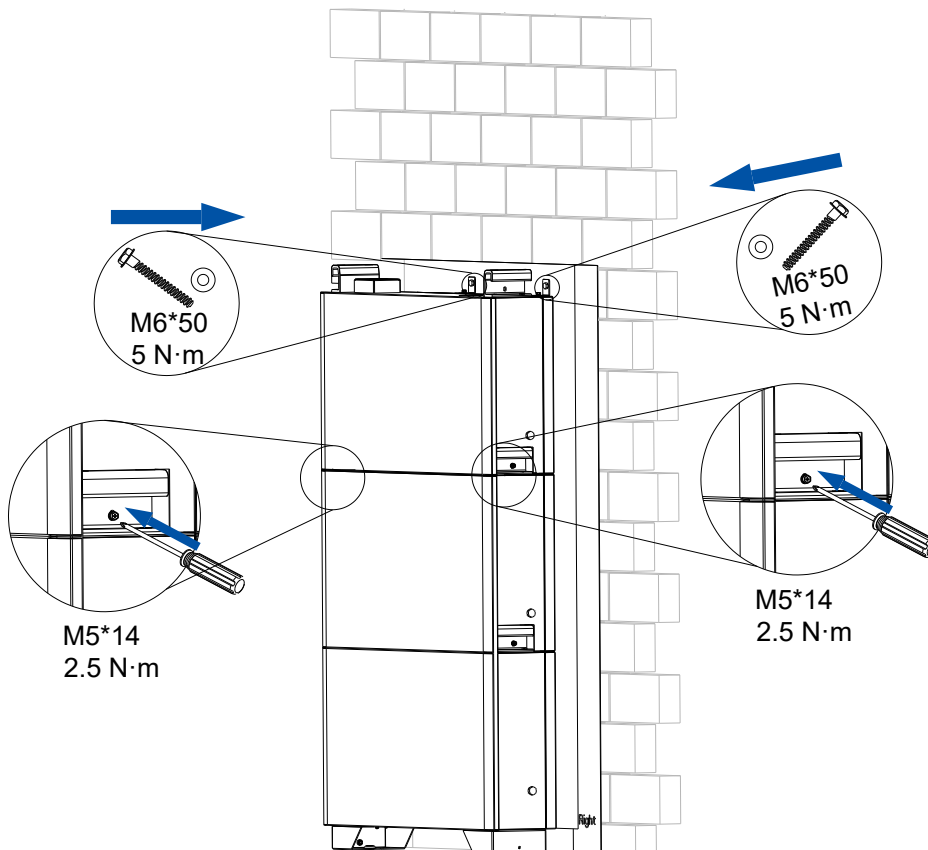


- On the top of the battery pack, align the locking brackets to the drilled holes and install the gaskets and M6*50 screws to secure the battery pack to the wall.

On the left and right bottom sides of the battery pack, install M5*14 screws to secure two batteries.

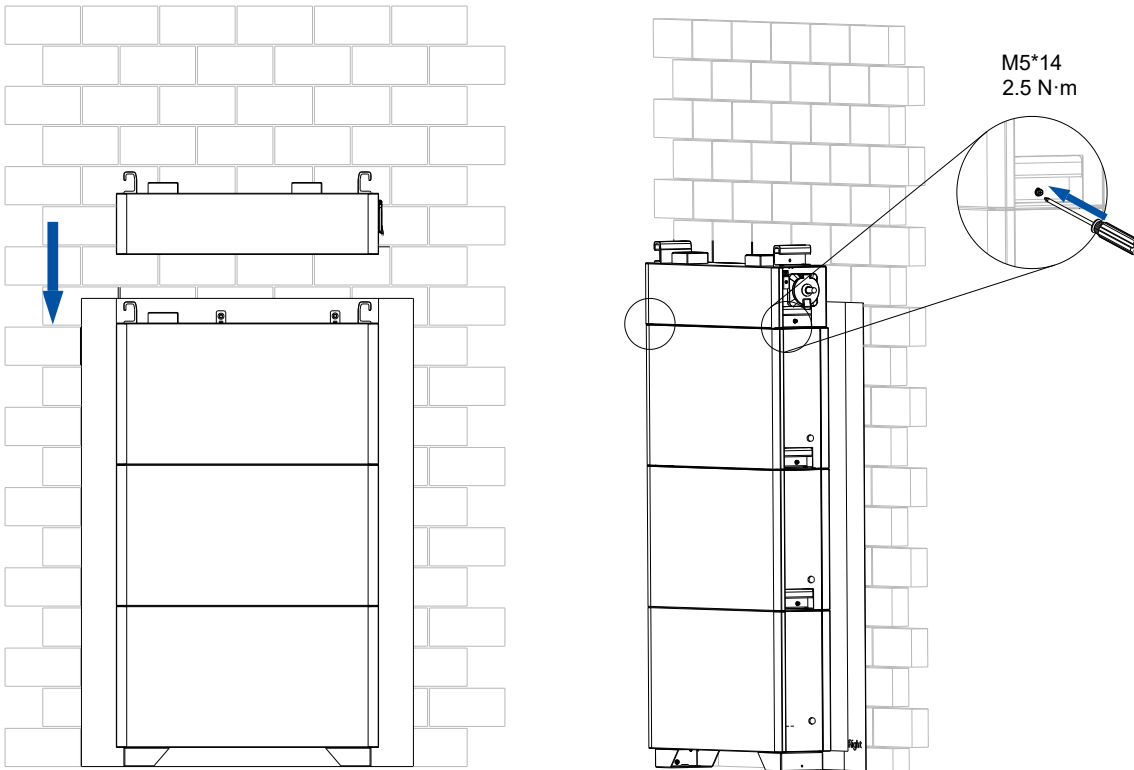


- (Optional) If needed, repeat steps 1 and 2 to install the third battery.



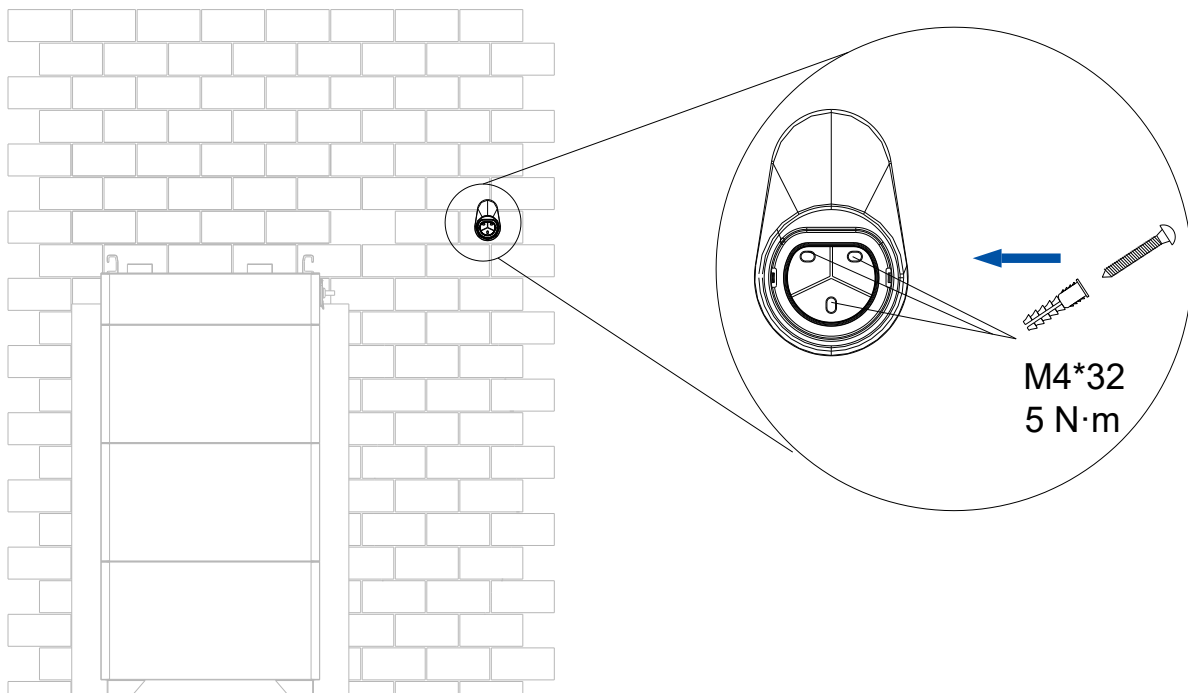
5.3 (Optional) Install the charger (CU2-7.4K-S-I)

1. Get the holster from the charger package. Install the holster onto the right side of the charger.
2. Place the charger onto the battery. Push it downwards.
3. On the left and right bottom sides, install M5*14 screws to secure the charger to the battery.



4. Install the holster on the wall by using three M4*32 screws.

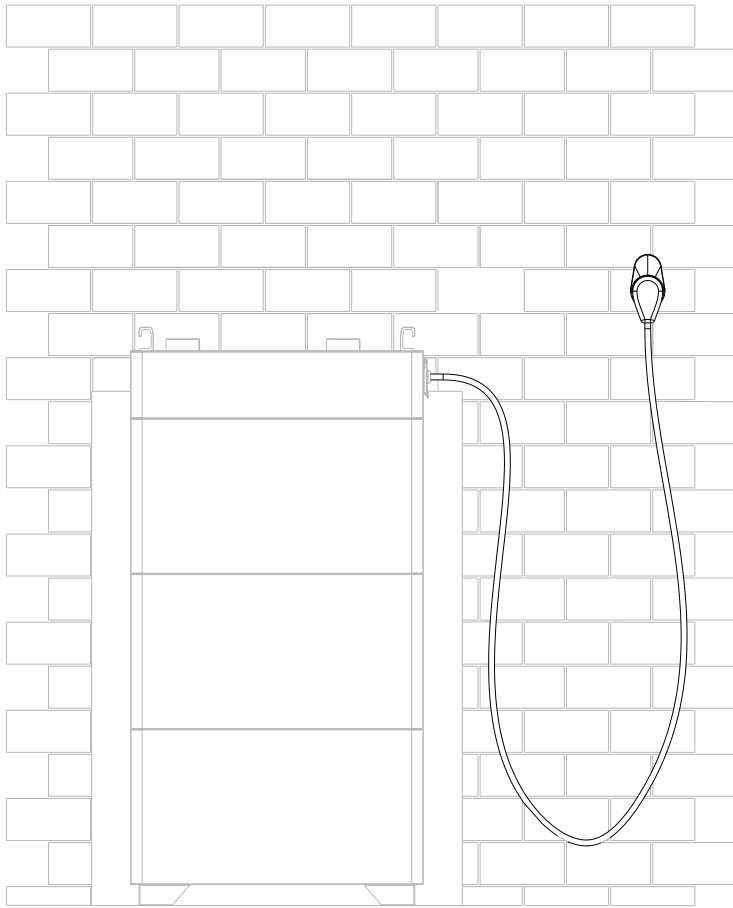
Note: The holster is used to the charger cable. You can connect the cable after all installation is completed. It is recommended that you purchase the cable from SAJ.



5. Connect the EV charger cable.

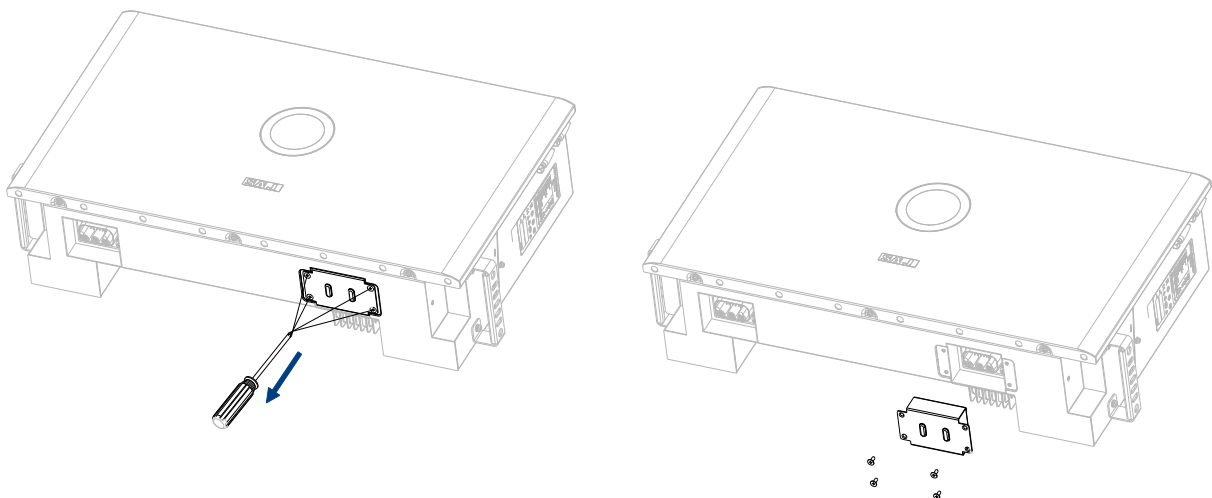
Notes:

- It is recommended that you purchase the cable from SAJ.
- It is recommended that you connect the cable after all device installation is completed.
- For a long cable, you can wrap the cable on the holster.

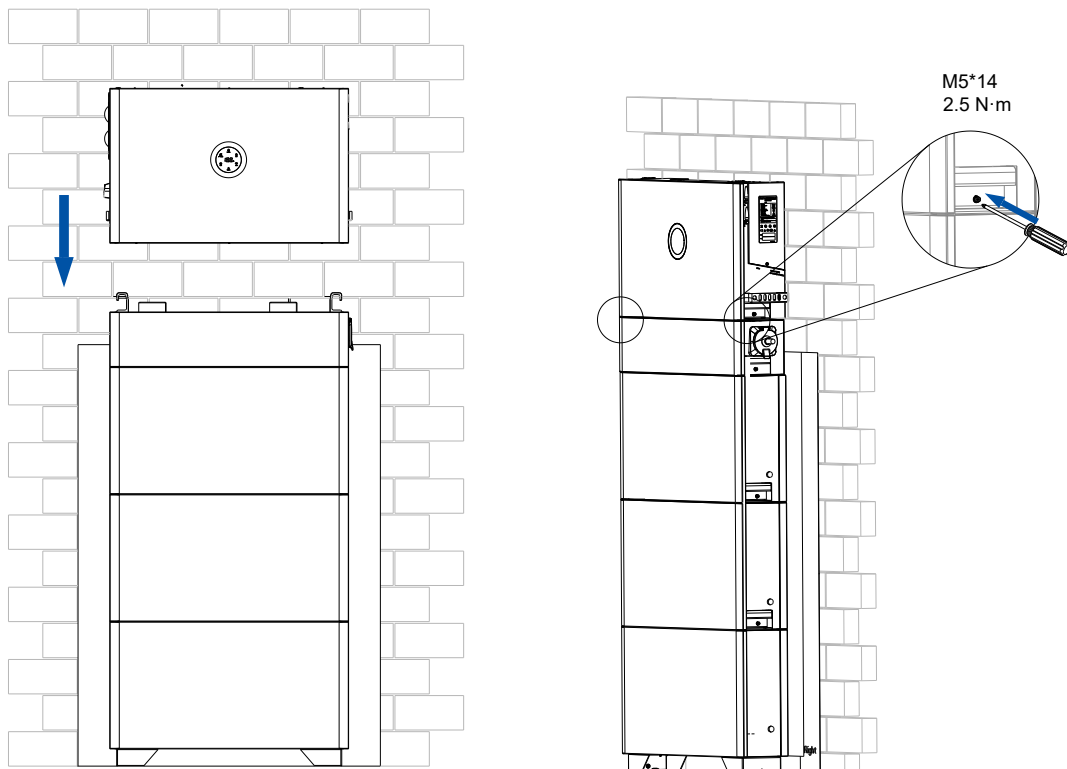


5.4 Install the inverter (AS3-xk-S-(W, G)-P or AS3-xK-S-(W, G)-P-(BE/IE))

1. (Optional) If you have installed a charger, loosen the screws on the inverter, and remove the port cover, as shown below:



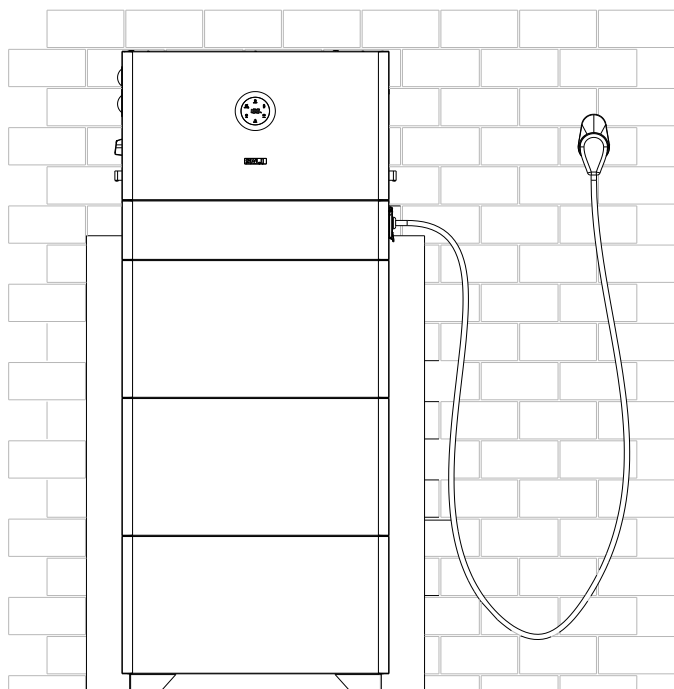
- Place the inverter onto the battery or charger (if available). Push it downwards. Install screws on both lower sides of the inverter to secure the inverter to the beneath device (battery or charger; here takes a charger as an example).



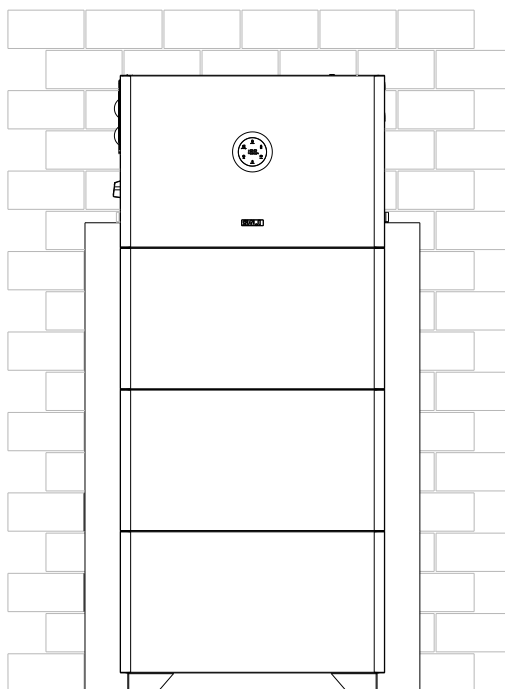
Completion View

Example of 3 batteries:

Inverter + charger + batteries



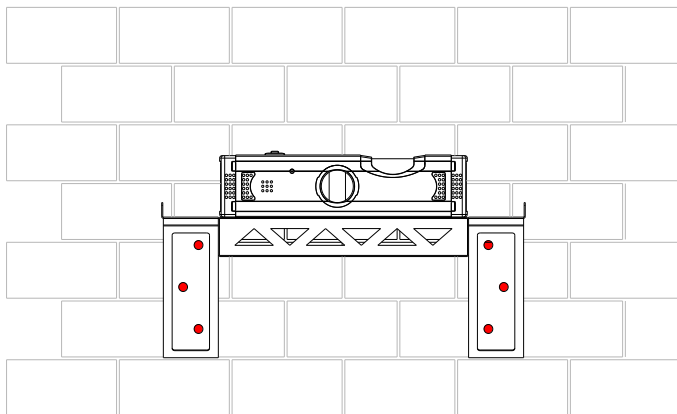
Inverter + batteries



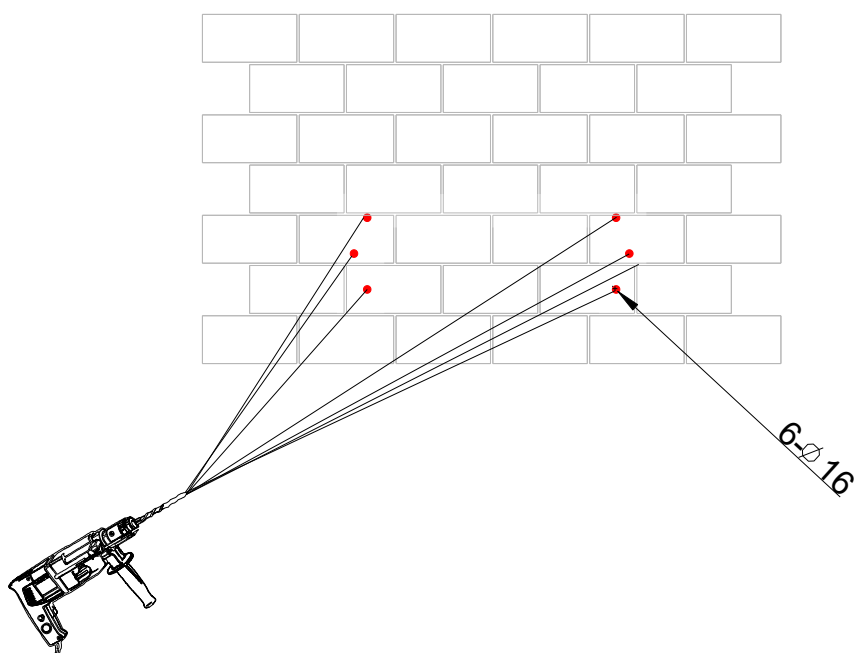
6. Wall-mounting manner

6.1 Install the wall-mounting bracket

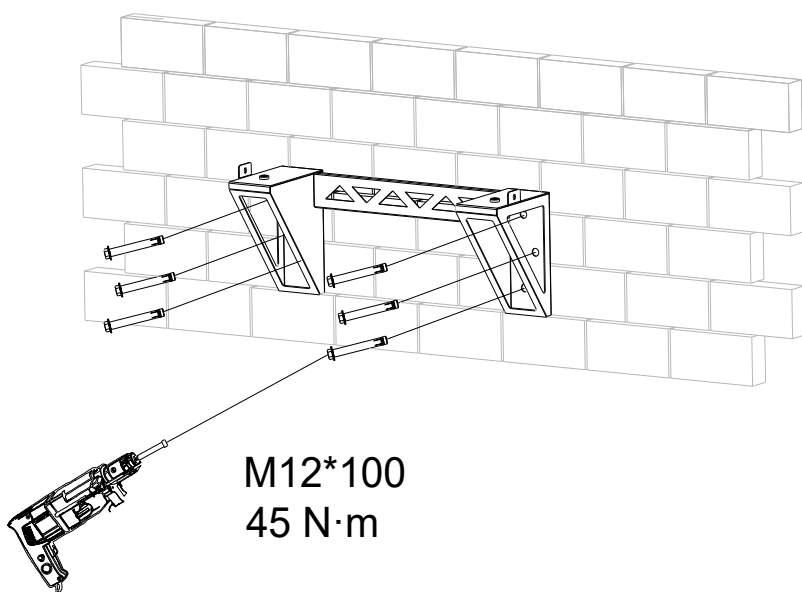
1. Place the mounting bracket onto the wall. Mark six holes. Remove the bracket.



2. Drill six holes according to the marked positions on the wall.

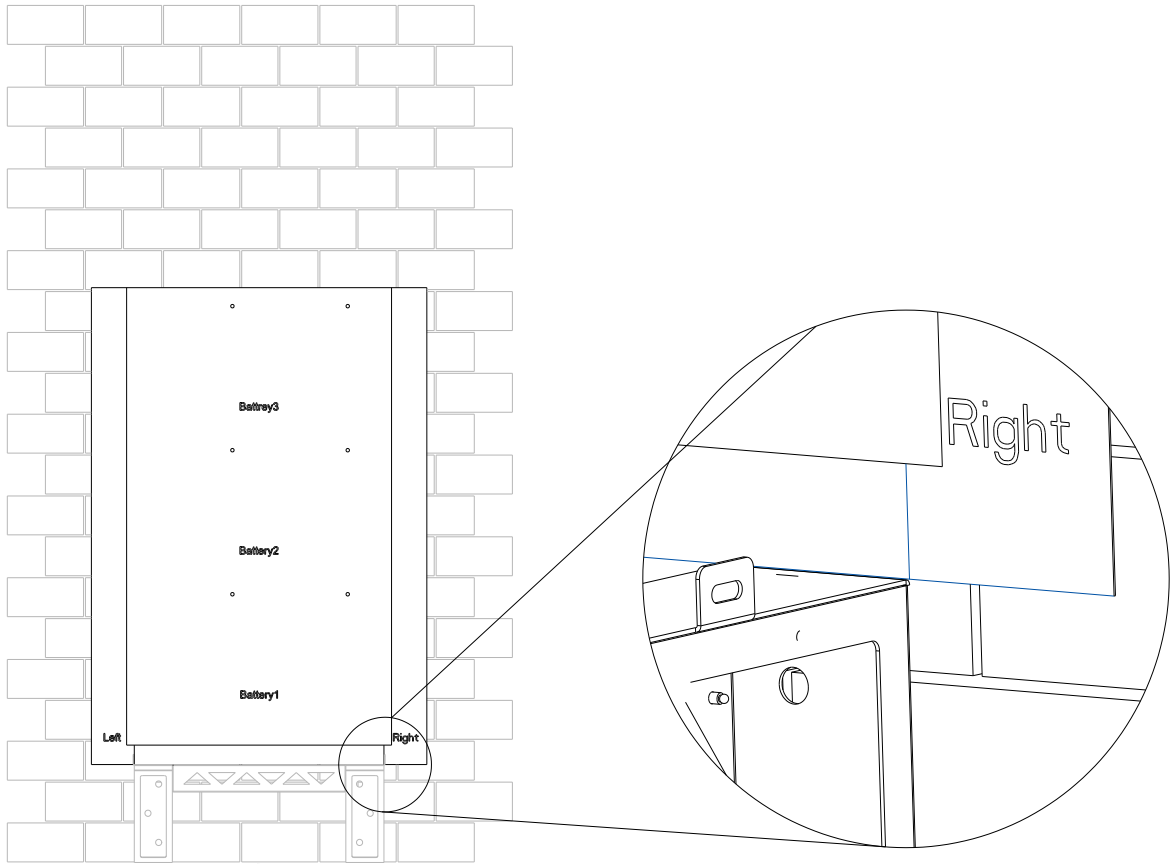


3. Install the mounting bracket on to the wall.

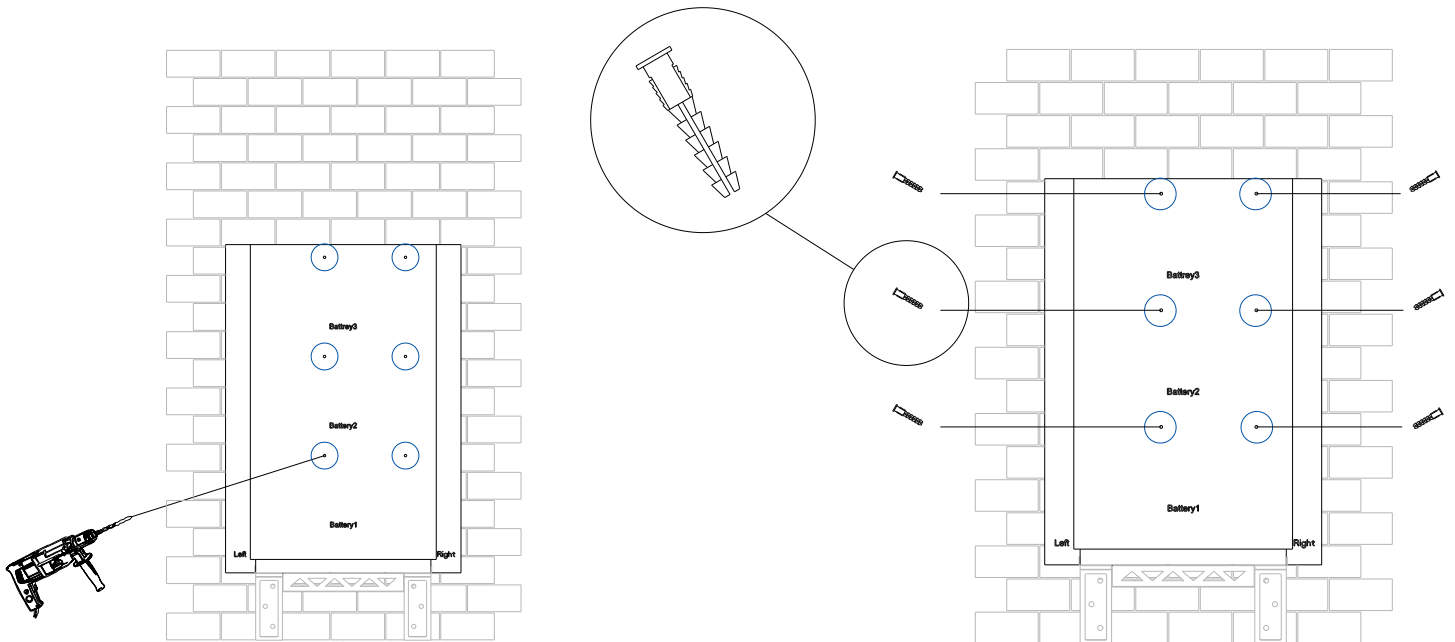


6.2 Install the base battery (BU3-5.0-(TV1, TV2)-PRO-BASE)

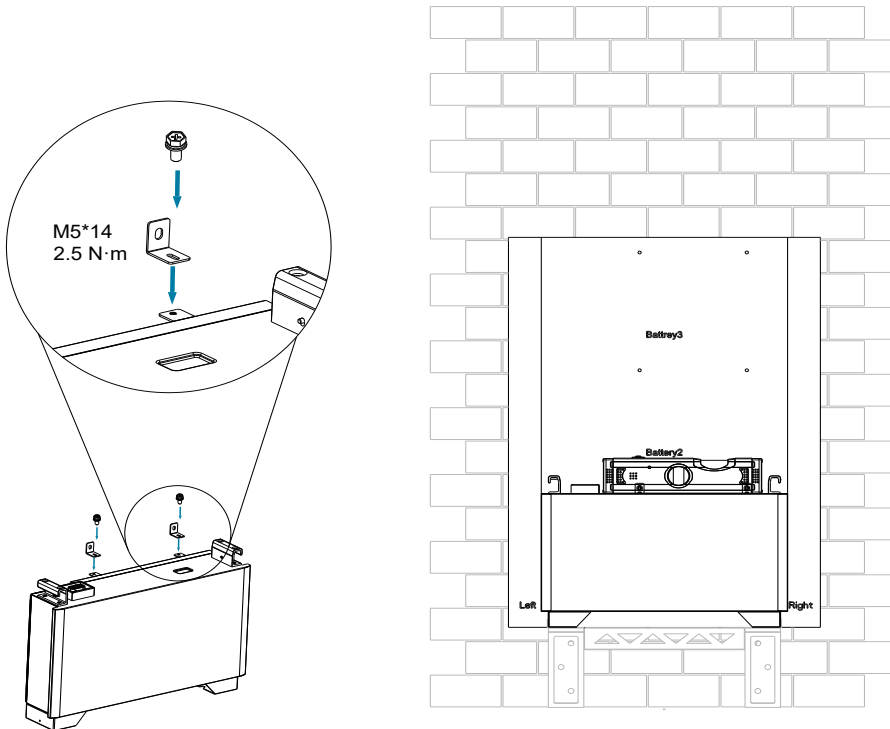
1. Get the cardboard from the base battery package. Place the cardboard on to the wall. Place the cardboard onto the wall by aligning the vertical lines with the bracket edges.



2. Drill six holes (8mm in diameter and 55mm in depth) on the marked positions on the cardboard. Install the provided expansion bolts into the drilled holes.

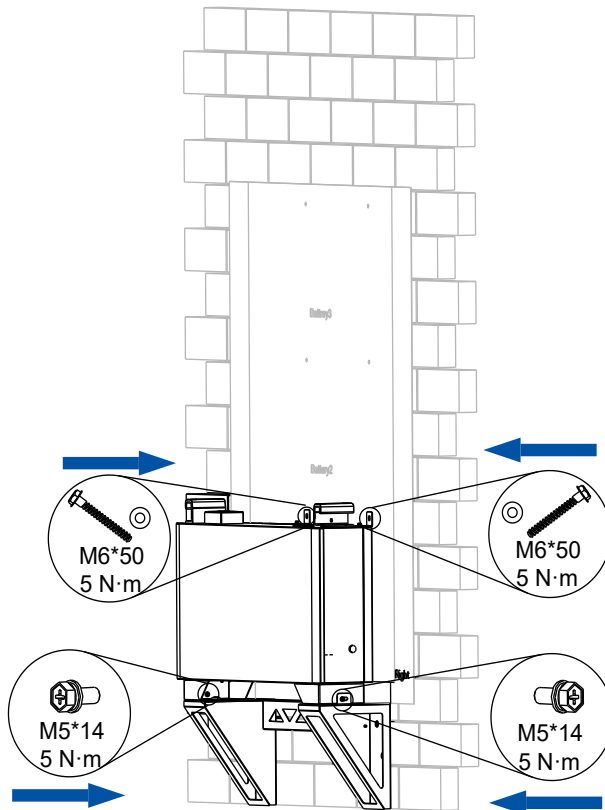


3. Use two M5*14 screws to install two locking brackets to the mounting ears on the top of the battery pack. Place the base battery onto the floor. Make sure that:
 - The battery feet are aligned with the vertical black line on the cardboard.
 - It is recommended to use a gradienter to make sure that the battery is placed horizontally.
 - The space between the battery back and the wall surface is 50–65 mm.



4. On the top of the battery pack, align the locking brackets to the drilled holes and install M6*50 screws to secure the locking brackets to the wall. Secure battery to the bracket by tightening two M5*14 screws.

Note: If the battery is installed outdoors, it is suggested to remove the cardboard which is not waterproof.



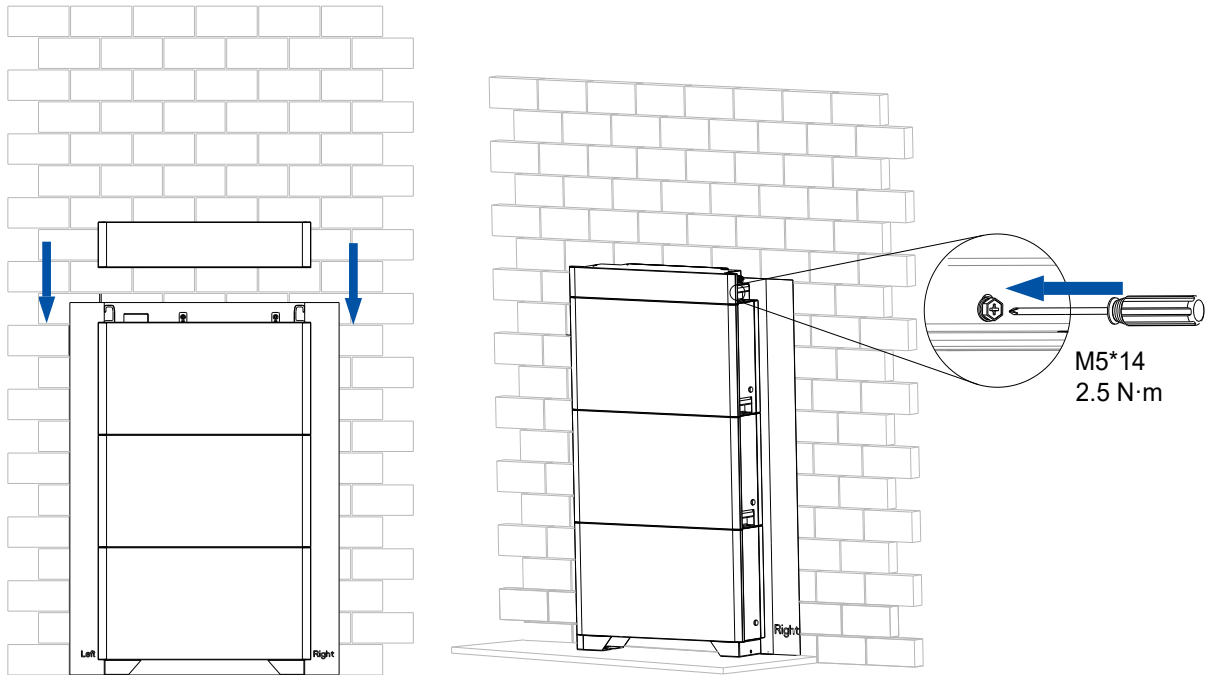
6.3 Install other required devices

For details, refer to same procedure (steps 5.2 to 5.4) in the ground mounting manner.

- (Optional) Battery without a base (BU3-5.0-(TV1, TV2) or BU3-5.0-(TV1, TV2)-PRO): Step 5.2
- (Optional) Charger (CU2-7.4K-S-I): Step 5.3
- Inverter (AS3-xK-S-W-P, AS3-xK-S-G-P): Step 5.4
- (Optional) Battery junction box (BC3-TV): Step 7

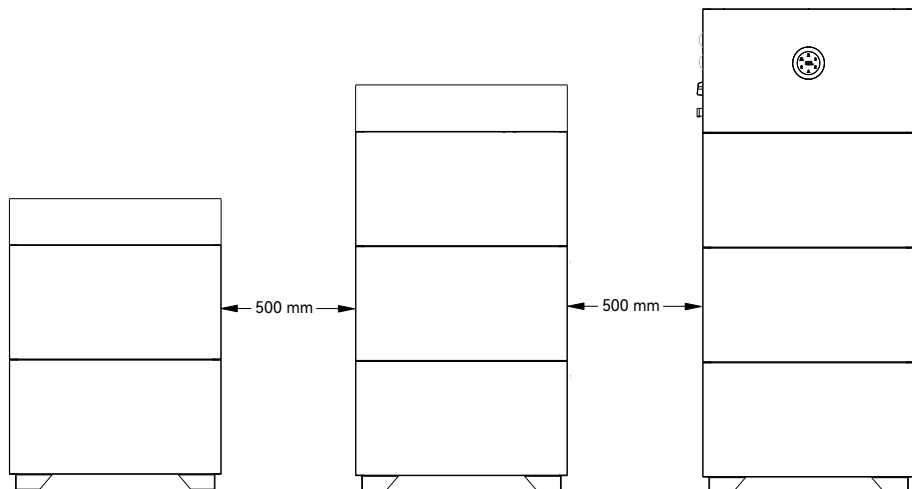
□ 7. (Optional) Install a battery junction box (BC3-TV)

1. Place the junction box onto the battery. Push it downwards.
2. Install screws on both lower sides of the junction box to secure the junction box to the beneath battery.



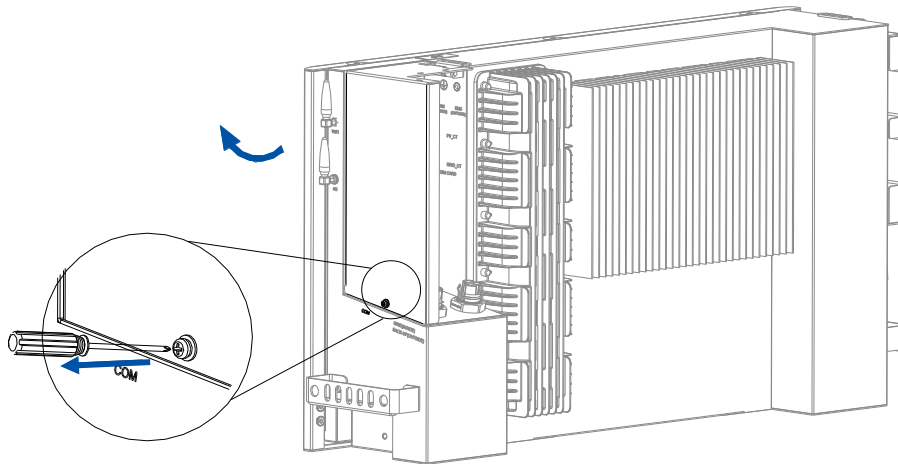
Completion View

Example of 8 batteries:



□ 8. Assemble the AC-side connection

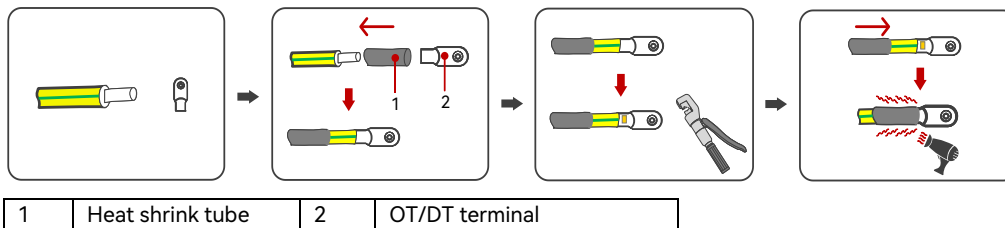
1. Open the AC-side Cover.



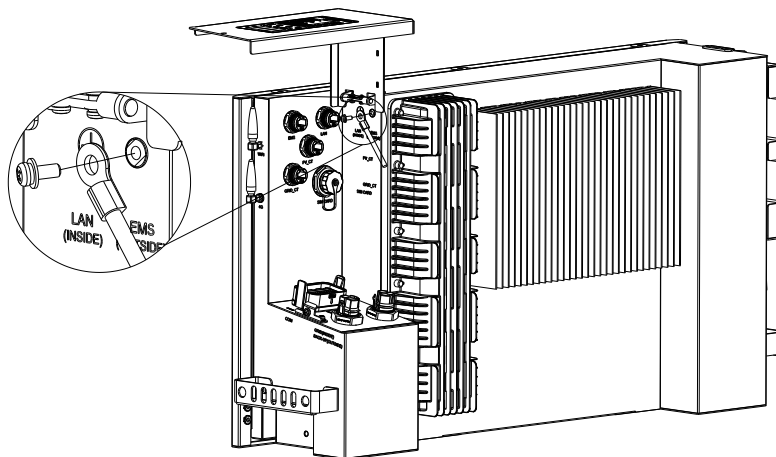
2. Connect the grounding cable, by taking AC-side grounding as an example.

The cable needs to be prepared by the user. It is recommended that a 6-mm² conductor cross-sectional area of cable be used.

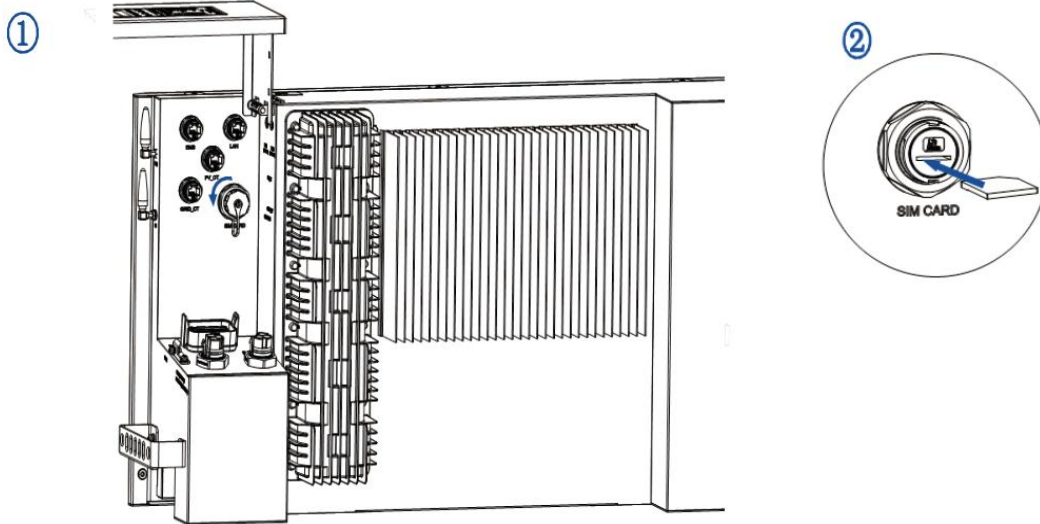
- a. Assemble the cable and OT/DT terminal.



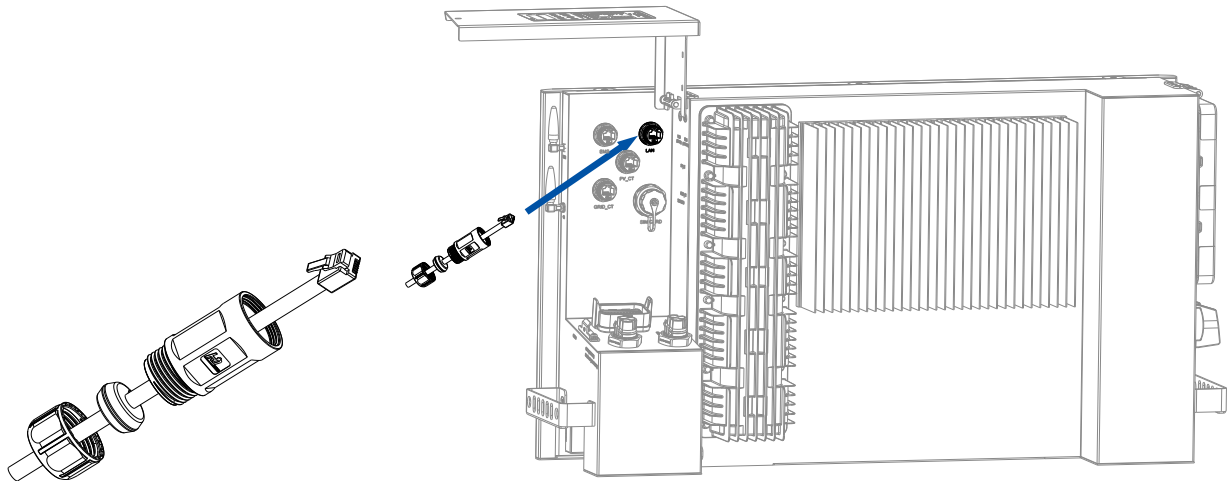
- b. Remove the M4*10 screw from the grounding port. Connect and secure the grounding cable, as shown below:



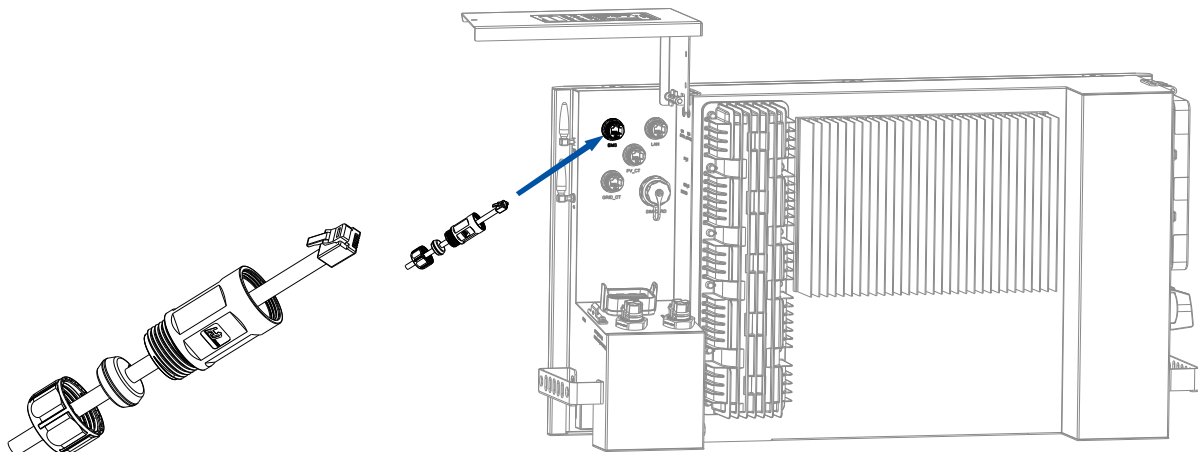
3. (4G model only) Install the SIM card: Loosen the cover of the SIM card slot. Then, insert the SIM card to the slot.



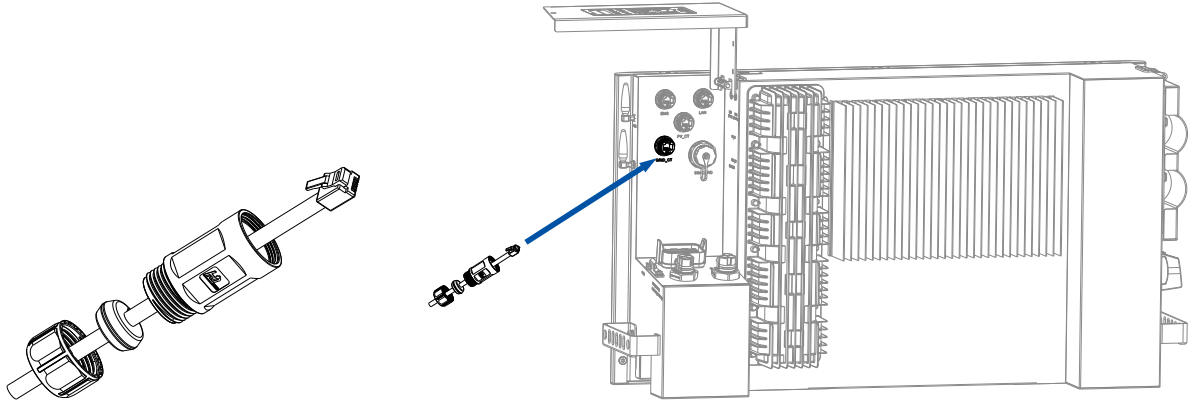
4. (W model only) Install the LAN cable, if you choose to use the Ethernet connection manner.
 - a. Remove the RJ45 cable fastener from the LAN port.
 - b. Use a standard RJ45 cable. Insert the cable through the cable fastener as shown below. Assemble the cable fastener.
 - c. Connect the LAN cable from the LAN port on the inverter to the router.



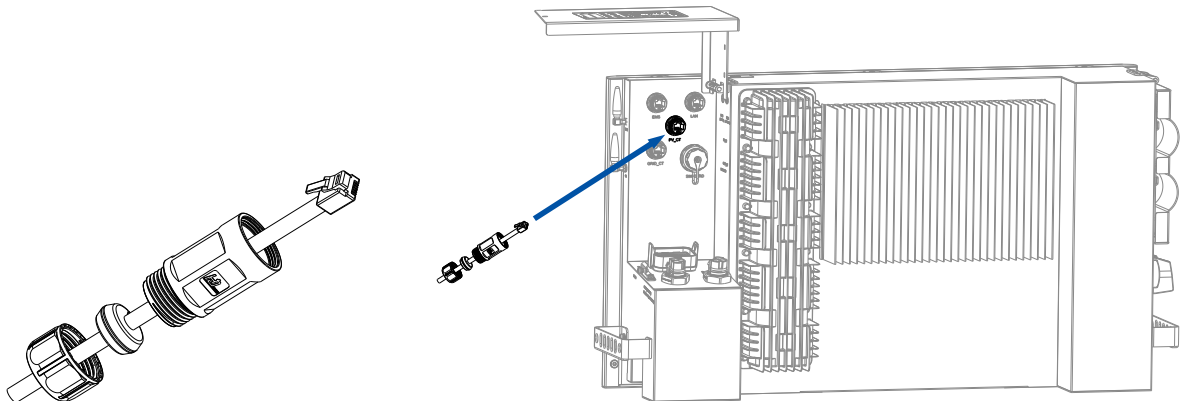
5. Install the EMS cable.
 - a. Remove the RJ45 cable fastener from the EMS port.
 - b. Use a standard RJ45 cable. Insert the cable through the cable fastener as shown below. Assemble the cable fastener.
 - c. Connect the cable from the EMS port on the inverter to the LAN port on SAJ eManager (EMS).



6. Connect the CT cable on the grid side
 - a. Remove the RJ45 cable fastener from the GRID_CT port.
 - b. Insert the CT cable through the cable fastener as shown below.
 - c. Insert the RJ45 connector of the CT cable to the GRID_CT port on the inverter.



- d. Install the CT on the grid side.
7. (Optional) Connect the CT cable on the solar inverter side.
This task is only applicable to the AC-coupling scenario in which the hybrid inverter and one or more solar inverters are installed in one ESS.
 - a. Remove the RJ45 cable fastener from the PV_CT port.
 - b. Insert the CT cable through the cable fastener as shown below.
 - c. Insert the RJ45 connector of the CT cable to the PV_CT port on the inverter.

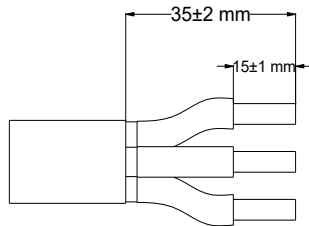


- d. Install the CT on the solar inverter side.
8. Install a circuit breaker.
For safety operation and regulation compliance, install a 63 A or higher air circuit breaker between the grid and the inverter.
9. (Optional) Install an RCD.
If the external RCD must be installed according to the local regulations, either type A or type B RCD can be installed with the action current 300 mA or higher.
10. Connect the grid and backup loads.
Recommended cable specification:

Cable type	Conductor cross-sectional area of cables		Conductor material	Cable diameter range (with insulation)
	Range	Recommended value		
Three-wire cable	10–13.3 mm ² or 7–6 AWG	10 mm ² or 6 AWG	Copper	15–19 mm
Three cables	/	10 mm ²		6.5–8.5 mm Double-layer insulation

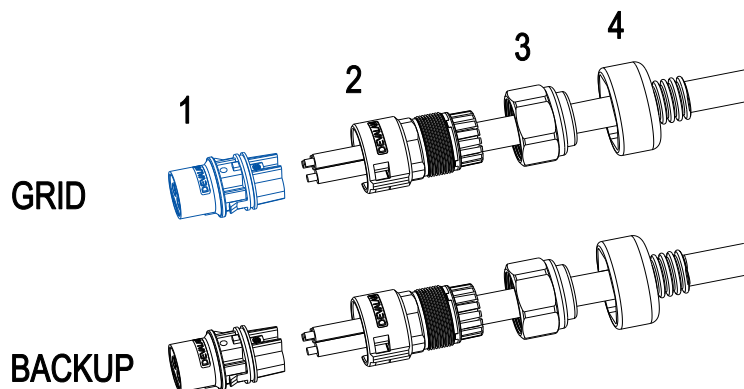
The following takes a three-wire cable as an example. However, if you choose to use three separated cables for grid or backup load connection, to ensure sealing safety, use the three-hole rubber plug provided in the accessory bag, instead of the original one-hole rubber plug in the connector.

- On the cable end, strip off the external protective layer around 35 mm and then strip off the wire insulation around 15 mm.

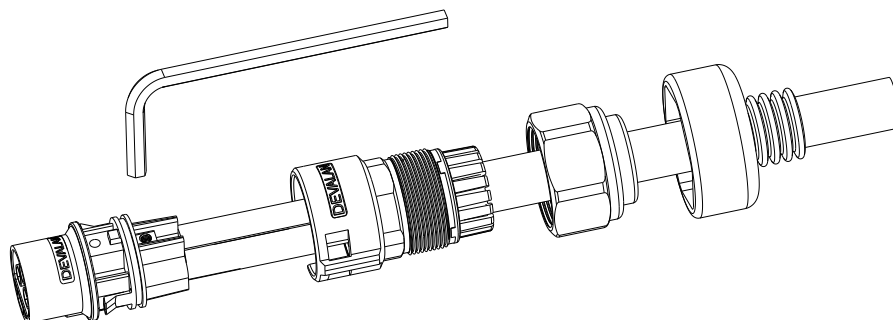


- Insert the cable through the dustproof cover, nut, and connector body of the connector and secure the wires to the terminal block with a spanner.
- Connect the cable to the grid or backup load connector.

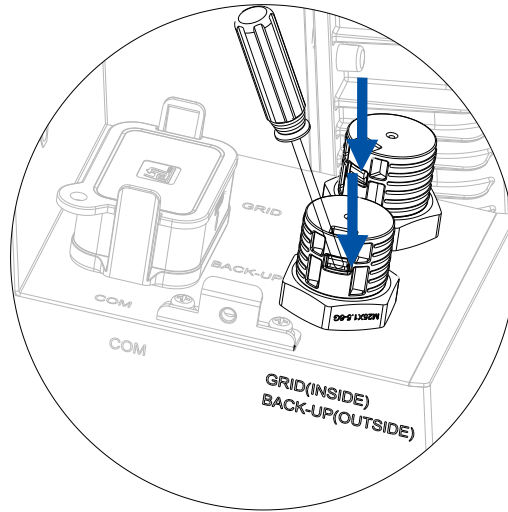
Note: Depending on the configurations, the waterproof gland nut (callout 4 in the following illustration) may not be provided.



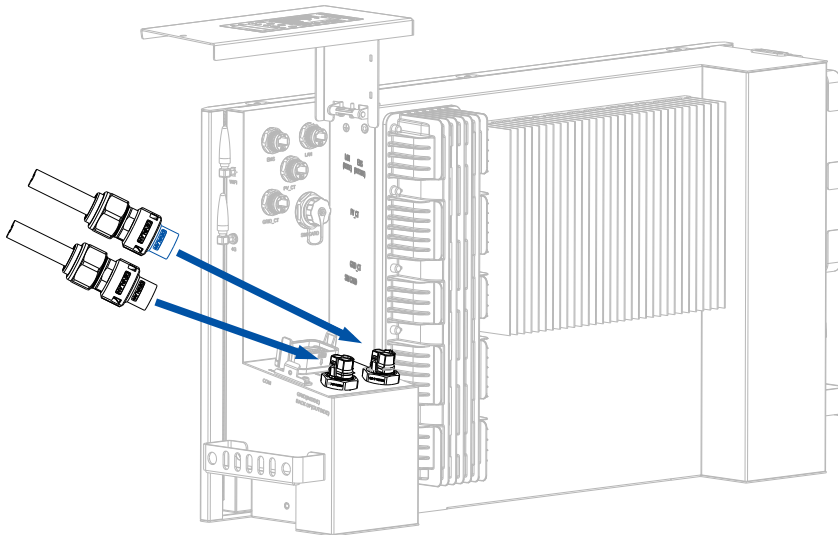
- Secure the cable to the connector. Then, assemble the connector.



- e. Remove the dustproof covers from the GRID and BACK-UP ports.
Use a flathead screwdriver to press down the tab in the cover.
Rotate the cover anti-clockwise and pull it upwards.



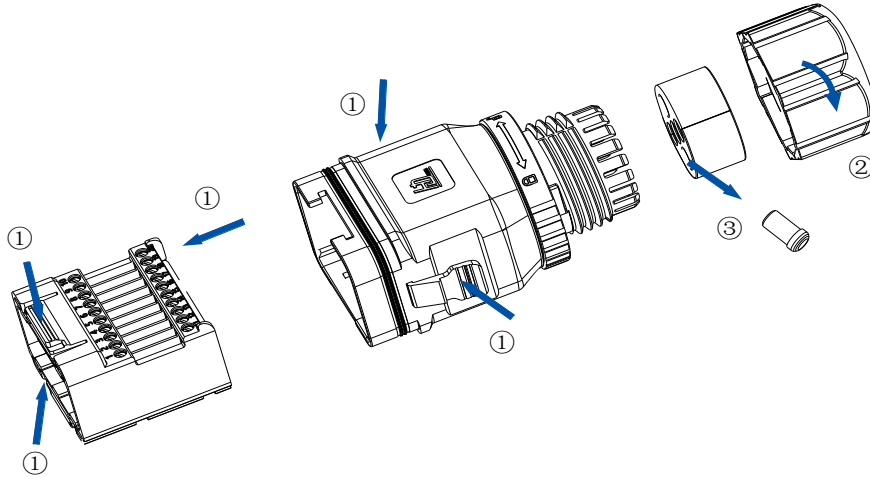
- f. Connect the cables to the GRID and BACKUP ports on the inverter.



11. Assemble the communication connection.

a. Disassemble the communication cable connector.

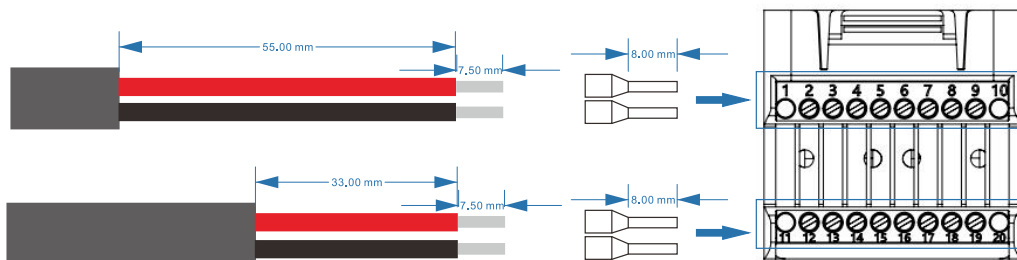
- ① Press the tabs on two sides of the connector by one hand and press the front ends of the terminal by another hand. Pull the connection terminal block outwards.
- ② Rotate the nut anti-clockwise and remove it from the connector body.
- ③ Remove the rubber plugs out of the seals.



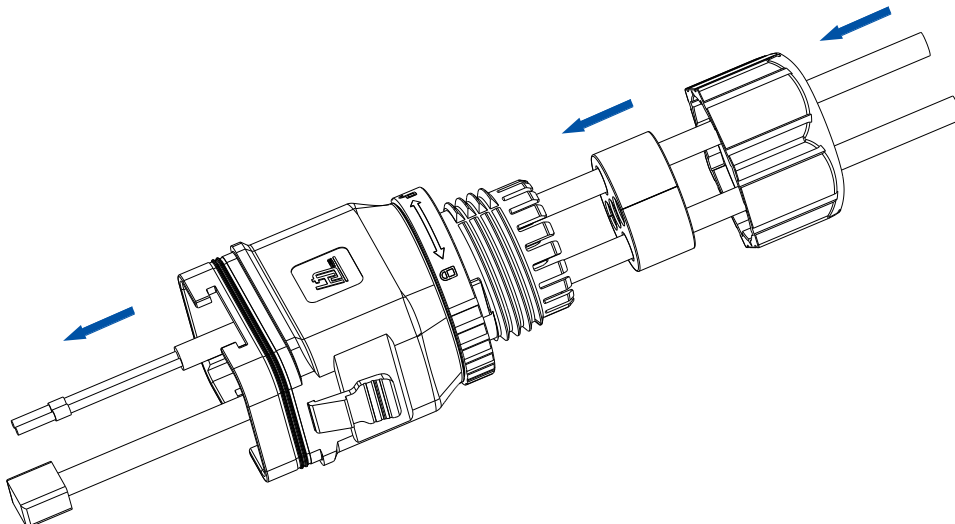
b. Connect all communication cables to the communication cable connector.

- ① Prepare cables according to the following suggested specifications:

Terminals	Cable diameter	Insulation off	
		External protective layer	Wire insulation
1-10	0.5-0.75 mm ²	55 mm	7.5 mm
11-20	0.2-0.5 mm ²	33 mm	7.5 mm



- ② Insert all communication cables through the nut, seals, and body of the connector.



- ③ Locate the ports and terminals on the connection terminal block according to their silkscreens.

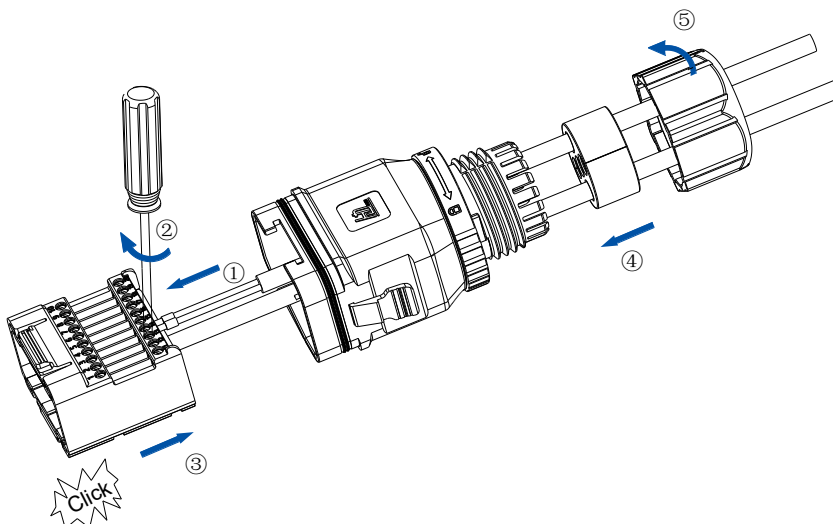
Name	Number	Pin definition	Description
PORT (RJ45 port)	/	1: CAN-H (with a 120 Ω resistor)	For parallelling connection scenario
		2: CAN-L	
		3: GND_W	
		4: SYN	
		5: GND_W	
		6: HOST	
		7: GND_W	
		8: TRF	
DRMs (RJ45 port)	/	1: DRM1/5	For RCR
		2: DRM2/6	For RCR
		3: DRM3/7	For RCR
		4: DRM4/8	For RCR
		5: REF D/0	/
		6: COM D/0	/
		7: NC	/
		8: NC	/
Terminals	4	DO1+	Dry contact output 1
	5	DO1-	Dry contact output 1
	6	DO2+	Dry contact output 2
	7	DO2-	Dry contact output 2
	11	RS485-A (with a 120 Ω resistor)	For external RS485 communication
	12	RS485-B	
	13	MET-A (with a 120 Ω resistor)	For meter communication
	14	MET-B	
	15	DI1+	Dry contact input 1
	16	DI1-	Dry contact input 1
	17	DI2+	Dry contact input 2
	18	DI2-	Dry contact input 2
	19	CAN_H (with a 120 Ω resistor)	For external CAN communication
	20	CAN_L	

- c. Connect and secure the cables to the connection terminal block. Then, assemble the communication cable connector.

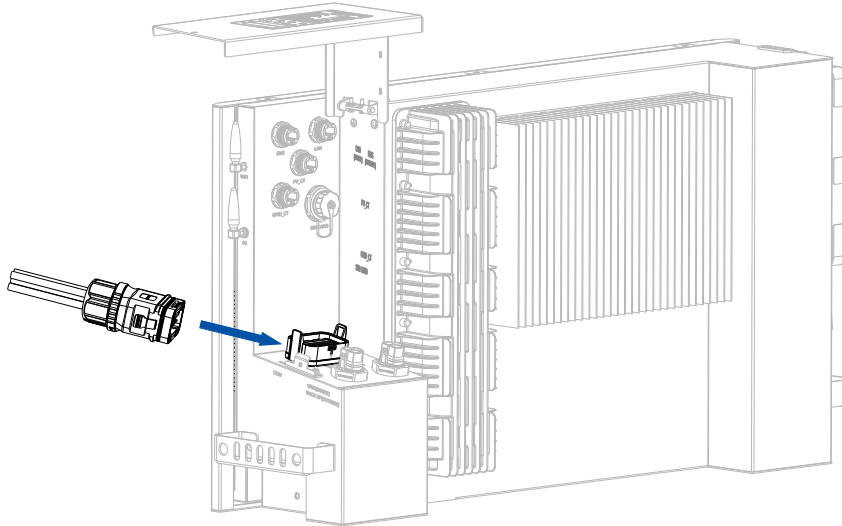
- ① Connect cables to corresponding terminals and RJ45 ports based on your needs.
- ② Use a screwdriver to secure the cables connected to the terminals.

Note: If any terminal that has been equipped with a 120 Ω resistor, such as METER-A, needs to be connected by a cable with the length longer than 20 meters, switch the resistor to ON status.

- ③ Insert the connection terminal block back to the connector body until you hear a click sound.
- ④ Insert the seals and nut back to the connector body.
- ⑤ Rotate the nut clockwise until it is secured to the connector body.

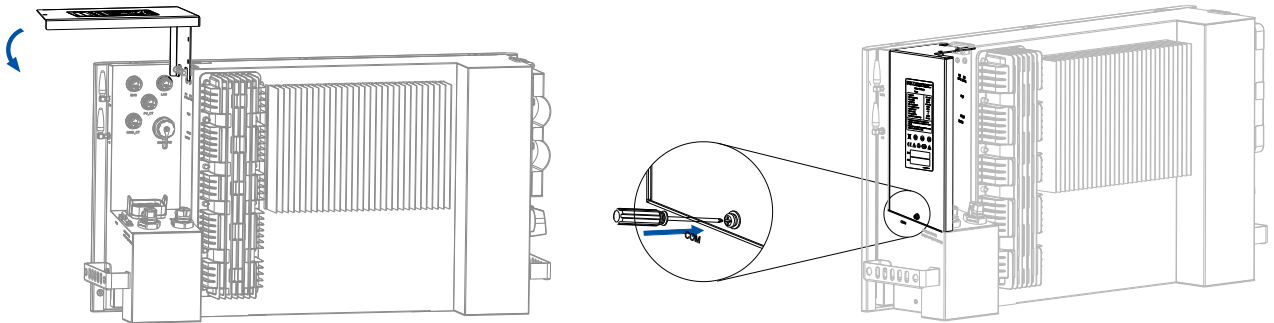


- d. Connect the assembled communication terminal connector to the COMM port on the inverter.



- e. Connect the other end of the cables to external devices, such as the meter.

12. Close the AC-side cover.



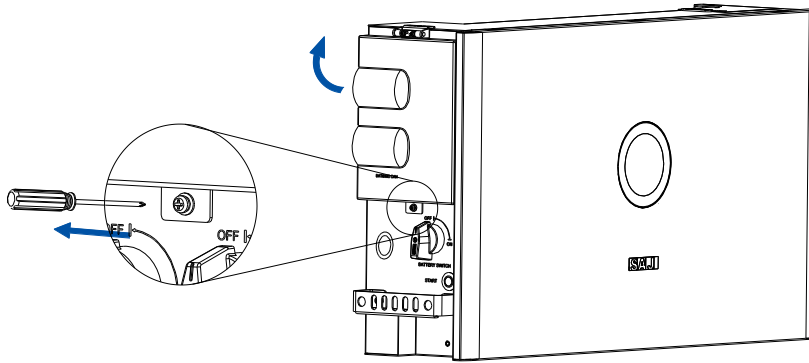
□ 9. (Optional) Connect the battery cables between multiple stacks

This procedure is only applicable when four to eight batteries are connected to one inverter. On top of the first stack, an inverter is installed. On top of other stacks, a battery junction box has been installed.

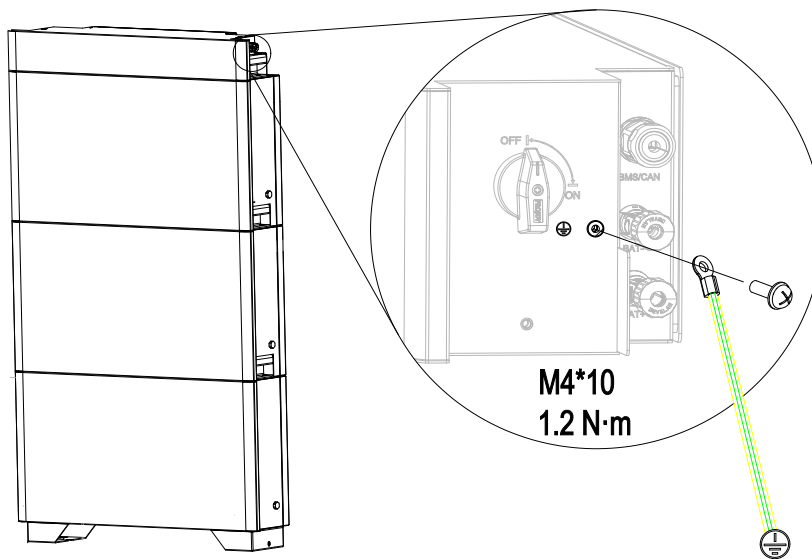
Pin definitions of the BMS CAN port are as follows:

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

1. Loosen the screw that locks the cover. Then, lift the cover upwards.



2. Prepare and connect the grounding cable to the battery junction box.



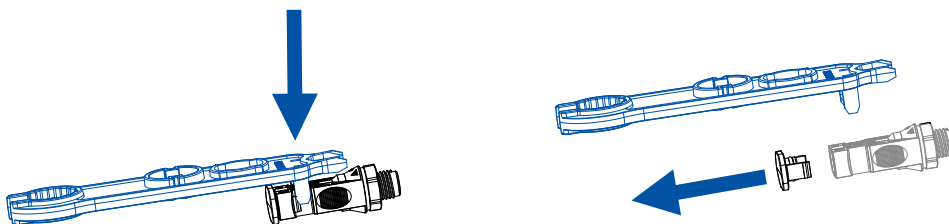
3. Use the provided positive and negative power cables and the communication cable. Connect the cables from the junction box to the inverter, as listed below.

Cable	From the junction box	To the inverter
Positive and negative power cables	BAT+ and BAT- ports	BAT+ and BAT- ports
Communication cable	BMS/CAN port	BMS CAN port

Notes:

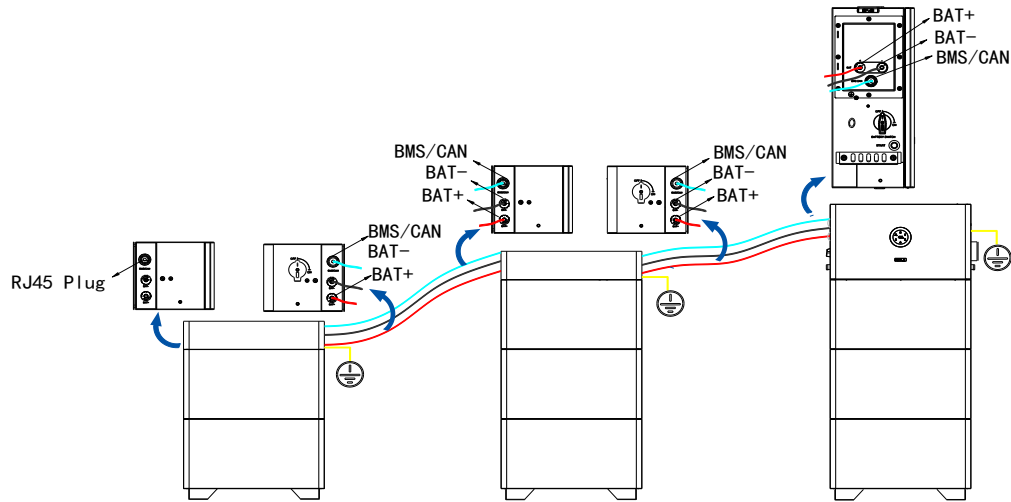
- The BMS/CAN port on the inverter has been installed with an RJ45 connector plug. In this case, remove this plug and insert it into the BMS/CAN port on the battery junction box on the left stack.
- The BAT+ and BAT- ports on the inverter and battery junction box are protected by waterproof covers. To remove the cover, perform as follows.

The positive connector is used as an example:

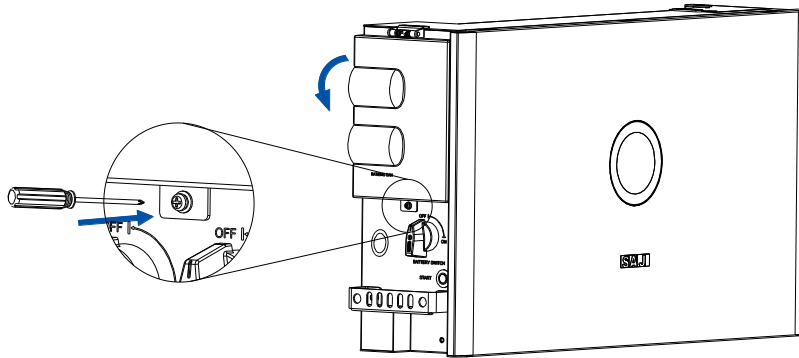


- The provided cables have been assembled with connectors. In some special cases, if you need to use your own cables, contact SAJ for technical support.


Taking eight batteries connecting to one inverter as an example:



4. Push the cover downwards. Use a screwdriver to tighten the screw to lock the cover securely



10. Start the system

1. Open the AC distribution box. Turn on the circuit breakers of the backup loads and grid.
2. (Optional) If there are multiple battery stacks, turn on the battery switch on the right side of the battery junction box.
3. On the left side of the inverter, perform as follows:
 - a. Turn on BATTERY SWITCH.
 - b. Press and hold the START button for five seconds until the LED indicator on the front panel is .
4. Check the LED indicator status on the inverter panel to ensure that the inverter is running properly.

Note: The LED indicator status label is on the left side of the inverter.
5. Configure the system on the SAJ App named Elekeeper. For details, refer to the section "System Commissioning" in the SAJ Configuration Instructions.
6. If any error occurs, check the error code displayed on the App. For detailed error messages, refer to the section "Troubleshooting" in the User Manual.

---End

Installer: _____