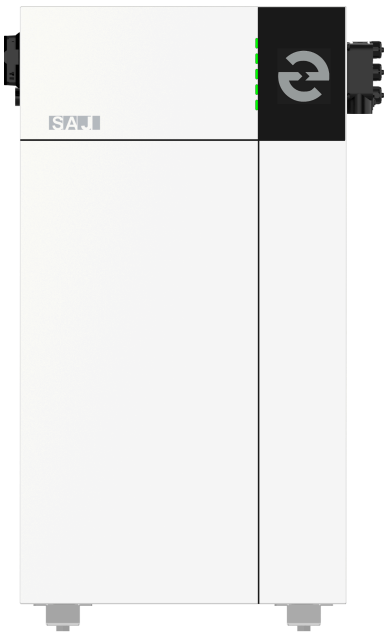
EK60 series

Low-voltage Battery

EK60 B3-16.0-LV

User Manual



Version 1.0

Copyright Statement

This document, including all text, images, and designs contained herein, is the proprietary information of **Guangzhou Sanjing Electric Co., Ltd.** ("**SAJ**") and is protected by applicable copyright and trademark laws. No part of this publication may be reproduced, stored, distributed, or transmitted in any form or by any means without the prior written permission of **SAJ**.

The information in this document is provided "as is" for general guidance. While every effort has been made to ensure accuracy and completeness, **SAJ** reserves the right to modify the content herein without prior notice.

Guangzhou Sanjing Electric Co., Ltd. disclaims all implied warranties, including but not limited to warranties of merchantability and fitness for a particular purpose, and shall not be liable for any direct, indirect, incidental, or consequential damages arising out of or in connection with the use of this document or reliance on its content.

SAJ (SAJ) used in this document are the trademarks of Guangzhou Sanjing Electric Co., Ltd. All other brand names, trademarks, or registered trademarks mentioned herein are the property of their respective owners.

For the most current version of this document and product support, please scan the QR code or visit our website as shown below:

Website: https://www.saj-electric.com/

Contact us

Online technical support: Go to https://www.saj-electric.com/services-support-technical to check FAQs or send your message or product enquiry.

Call for assistance: For SAJ support telephone numbers, see https://www.saj-electric.com/locations for your region support details.

- **Headquarter**: Guangzhou Sanjing Electric Co., Ltd.
- **Address**: SAJ Innovation Park, No.9, Lizhishan Road, Guangzhou Science City, Guangdong, P.R.China.
- **Tel**: +86 20 6660 8588
- **E-mail**: service@saj-electric.com
- **Website:** https://www.saj-electric.com/

Warranty

Check the product warranty conditions and terms on the SAJ website: https://www.saj-electric.com/.

About this document

This user manual provides introductions and instructions of operating, maintaining, and troubleshooting the following SAJ product:

- EK60 B3-16.0-LV

You can find the latest version of this document as eManual at https://www.saj-electric.com/, or scan the QR code below.

Scan for eManuals

Note: Illustrations in this document show only essential details and may differ from the actual product.

Target Audience

This document is applicable to the personnel that transport, install, and operate on the product. The personnel are required to have the following qualifications:

- A certain level of expertise in electronics, electrical wiring, and mechanical knowledge in electrical and mechanical schematics.
- Being familiar with the composition and working principles of the product and its upstream and downstream equipment.
- Professional training related to the installation and commissioning of electrical equipment.
- The ability to respond urgently to dangers or emergencies that may arise during installation or commissioning.
- Being familiar with relevant standards and regulations in the country or region where the project is located.
- Being familiar with the contents in this manual.

Use of the Manual

Read the user manual carefully before any installation, operation and maintenance and follow the instructions during installation and operation. Always keep the printed manual available for future reference.

Levels of Warning Messages

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, will result in serious injury or moderate injury.

CAUTION

Indicates a hazardous situation which, if not avoided, will result in minor or moderate injury.

NOTICE

Indicates a situation which, if not avoided, can result in property damage.

Revision history

Version	Date	Changes
V1.0	2026-10-23	Fifth version. Updated contents of the following sections: 2.1. General introduction *(on page 7)*, 2.4. Electrical terminals *(on page 8)*, . LED indicators *(on page)*, 5.4. Communication connection *(on page 32)*, 5.5. Connect battery to inverter *(on page 34)*, 8.2. Troubleshooting *(on page 47)*, and 9. Product specification *(on page 50)*.
V0.3	2026-07-22	Fourth version. Updated contents of the following sections: 3.1. Transportation *(on page 11)*, 4.7. Install battery on the floor *(on page 23)*, 4.8. Install battery on the wall *(on page 25)*, and 7. Commissioning on App *(on page 40)*.
V0.2	2026-06-08	Third version. Updated contents of the following sections: 3.1. Transportation *(on page 11)*, 4.6. Packing list *(on page 21)*, 4.8. Install battery on the wall *(on page 25)*.
V0.1	2026-04-25	Second version. Updated . About this document *(on page 4)*.
V0.0	2026-02-26	First version.

Contents

1. Safety instructions 3
- 1.1. Safety symbols 3
- 1.2. Battery safety instructions 4
- 1.3. Emergency 5
- 1.4. Recycling and disposal 6

2. Product information 7
- 2.1. General introduction 7
- 2.2. Model description 7
- 2.3. Dimensions 7
- 2.4. Electrical terminals 8
- 2.5. LED indicators 9

3. Transportation and storage 11
- 3.1. Transportation 11
  - 3.1.1. Transportation safety instruction 11
  - 3.1.2. Description of the hand truck 11
  - 3.1.3. Transportation procedure 13
- 3.2. Storage safety instruction 15

4. Installation 16
- 4.1. Safety instruction 16
- 4.2. Installation environment requirements 17
- 4.3. Installation location requirements 18
- 4.4. Installation tools 19
- 4.5. Unpacking 20
- 4.6. Packing list 21
- 4.7. Install battery on the floor 23
- 4.8. Install battery on the wall 25

5. Electrical connection 29
- 5.1. Safety instruction 29
- 5.2. Grounding connection 29
- 5.3. Power connection 30
- 5.4. Communication connection 32
- 5.5. Connect battery to inverter 34

6. Startup and shutdown 38
- 6.1. Startup and shutdown 38
  - 6.1.1. Startup 38
  - 6.1.2. Shutdown 39

7. Commissioning on App 40
- 7.1. About elekeeper 40
- 7.2. Download the elekeeper App 40
- 7.3. Sign up at the elekeeper App 40
- 7.4. Log in to the elekeeper App 43
- 7.5. Battery settings 44

8. System maintenance.....46
8.1. Routine maintenance.....46
8.2. Troubleshooting.....47

9. Product specification.....50

1. Safety instructions

1.1. Safety symbols

Symbol	Description
	**Danger:** Electrical shock hazard This device is directly connected to public grid and thus all work to the system shall only be carried out by qualified personnel.
	**Danger:** Hot surface The components inside the battery will release a lot of heat during operation. Do not touch metal plate housing during operating.
	**Danger:** Risk of electric shock from energy stored in capacitor. Do not open the cabinet door until 5 minutes after disconnecting all sources of supply.
	**Warning:** No open flames Do not place or install near flammable or explosive materials.
	**Caution** Keep the product out of reach of children.
	**Caution:** Check the user manual before service If an error has occurred, refer to the troubleshooting instructions to remedy the error.
	**Caution** This device shall NOT be disposed of in residential waste.
	**Caution** This battery module shall NOT be disposed of in residential waste.
	**CE Mark** Equipment with the CE mark fulfills the requirements of the Low Voltage Directive and Electro Magnetic Compatibility.
	**RoHS compliant mark** Equipment with the RoHS mark does not exceed the allowable amounts of the restricted substances defined in Restriction of Hazardous Substances in Electrical and Electronic Equipment.
	**RCM compliant mark** Equipment with the RCM mark is in compliance with AS/NZS 4417.1 & 2 and the EESS.
	**Recyclable**

1.2. Battery safety instructions

DANGER

Risk of electric shock, short circuit, or equipment damage

Performing operations on live / defective equipment or improper grounding connection cause electric shock.

- Do not use the battery or the battery control unit if it is defective, broken or damaged.
- Do not subject the battery to any strong force.
- Keep the power off prior to any operations.
- Make sure that the battery is grounded prior to use.
- Do not pull out any cables or open the battery enclosure when the battery is powered on.

DANGER

Risk of reduced life cycle, fire, or explosion

Excessive heat or direct exposure to heat sources destabilizes the battery chemistry.

- Do not expose the battery to temperatures more than 50℃.
- Do not place the battery near a heat source, such as direct sunlight, a fireplace.
- Keep inflammable and explosive dangerous items or flames away from the battery.

DANGER

Risk of short circuit, corrosion, internal damage, or malfunction

Water, moisture, or specific corrosive gases can damage electronics and battery components.

- Do not soak the battery in water or expose it to moisture or liquids.
- Do not use the battery in areas where the ammonia content of the air exceeds 20 ppm.

WARNING

Severe injury, death, equipment damage, system failure, and voided warranty

Improper handling by unqualified individuals can lead to electrical hazards.

- Only qualified personnel with a thorough understanding of local safety regulations and battery standards may install, maintain, remove, or dispose of this product.
- **SAJ** Electric shall not be held liable for any loss or warranty claims resulting from unauthorized product modifications that could lead to fatal injury, harm to third parties, or impaired equipment performance.
- The battery cannot be disposed of as household refuse. When the service life of the battery reaches its limit, it is not required to return it to the dealer or **SAJ**, but it must be recycled to the special waste lithium battery recycling station in the area.

WARNING

Risk of fire, explosion, severe burns, equipment destruction

Short circuit allows high current to flow and generate intense heat.

- To ensure personal and property safety, never short-circuit the positive (+) and negative (-) terminals.

⚠ CAUTION

System malfunction, accelerated battery degradation, risk of overheating, and potential safety hazards

Incompatible components or mixed battery types can lead to improper charging/discharging, voltage imbalance, and communication failures.

- Use this battery only with inverters specified as compatible by the manufacturer.
- Do not mix batteries of different models or specifications in a single energy storage system.

ⓘ NOTICE

For optimal performance and safety, use batteries from the same production batch to minimize the risk of operational abnormalities.

1.3. Emergency

Despite its careful and professional protection design against any hazards, damage of the battery may still be possible. The causes, potential hazards, and handling measures of damaged batteries are as follows.

Risk of Electrolyte Leakage and Hazardous Gas Release

- **Causes:** Battery rupture may occur due to mechanical damage or excessive internal pressure, resulting in the leakage of electrolyte and the release of hazardous gas.
- **Hazards:** The battery electrolyte is corrosive and flammable. Toxic gases released can cause irritation to the skin and eyes, as well as discomfort upon inhalation.
- **Response Measures:**
  - **General Handling Procedures for a Damaged Battery:**
    - Do not open the damaged battery.
    - Avoid causing further damage (e.g., shock, impact, crushing, or trampling).
    - Keep the damaged battery away from water sources, unless water is necessary to prevent an energy storage system fire.
    - Do not expose the damaged battery to direct sunlight to prevent internal overheating.
  - **Emergency Procedures for Electrolyte Leakage or Gas Release:**
    - Eye contact: Rinse eyes with a large amount of running water and seek medical advice.
    - Contact with skin: Wash the contacted area with soap thoroughly and seek medical advice.
    - Inhalation: If you feel discomfort, dizziness, or vomiting, seek medical advice immediately.
    - Fire response: If a fire occurs within the battery pack area, extinguish it using an FM-200 or Carbon Dioxide (CO_2) fire extinguisher. Always wear a gas mask to avoid inhaling toxic gases and harmful combustion products.
    - If the fire is not caused by battery and has not yet spread to the battery, use an ABC-type fire extinguisher.

Risk of Fire and Explosion

- **Causes**: Batteries present a risk of fire or explosion if subjected to damage, misuse, or improper handling.
- **Hazards:** Such incidents can result in rapid fire spread, the release of toxic fumes, and potential projectile hazards from battery rupture.
- **Response Measures:**

- If a fire has just occurred, try to disconnect the battery circuit breaker, and cut off the power supply first, but only if you can do so without endangering yourself.
- If the battery is already on fire, do not attempt to extinguish the fire. Evacuate the crowd immediately.
- If a fire occurs within the battery pack area, extinguish it using an FM-200 or Carbon Dioxide (CO_2) fire extinguisher. Always wear a gas mask to avoid inhaling toxic gases and harmful combustion products.
- If the fire is not caused by battery and has not yet spread to the battery, use an ABC-type fire extinguisher.

1.4. Recycling and disposal

NOTICE

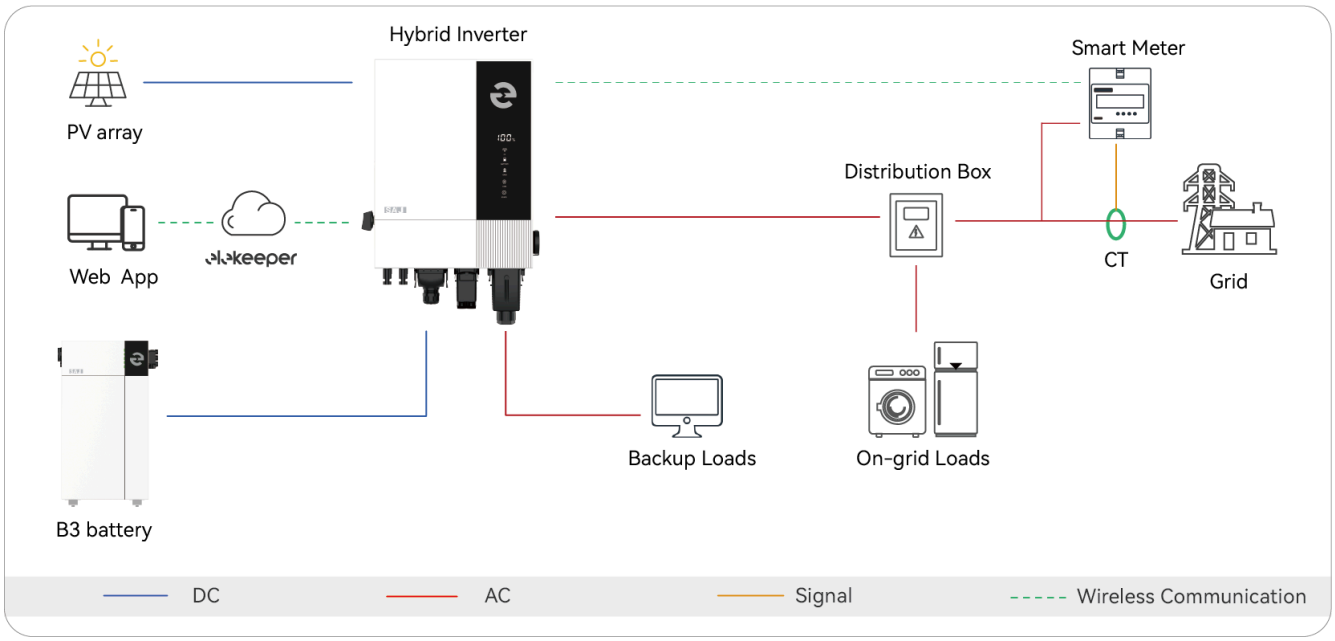
This product should not be disposed as a residential waste.

Some components inside the equipment can be recycled and reused, while others may pose a pollution risk to the environment. Please contact a locally authorized professional recycling agency for the proper handling of the product and its internal components.

2. Product information

2.1. General introduction

- The battery is applied to the residential photovoltaic energy storage system which stores electricity for future use.
- The battery is a low voltage battery system and employs modular design for easy installation and wiring.
- The battery is built internally with a battery management system (BMS), which is used to ensure efficiency of the battery and protect the battery from operating outside its specified limitations.
- The battery can only operate with inverters that support the Pylontech 2.0 protocol, such as SAJ H2 low voltage series hybrid inverter.



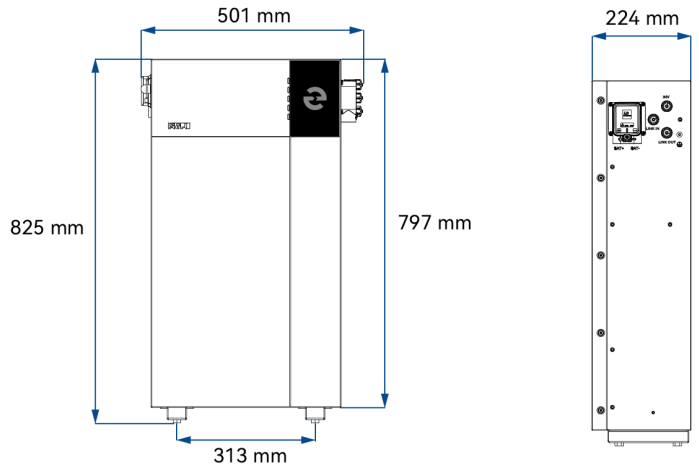
2.2. Model description

EK60 B3 -16.0 - LV
① ② ③ ④

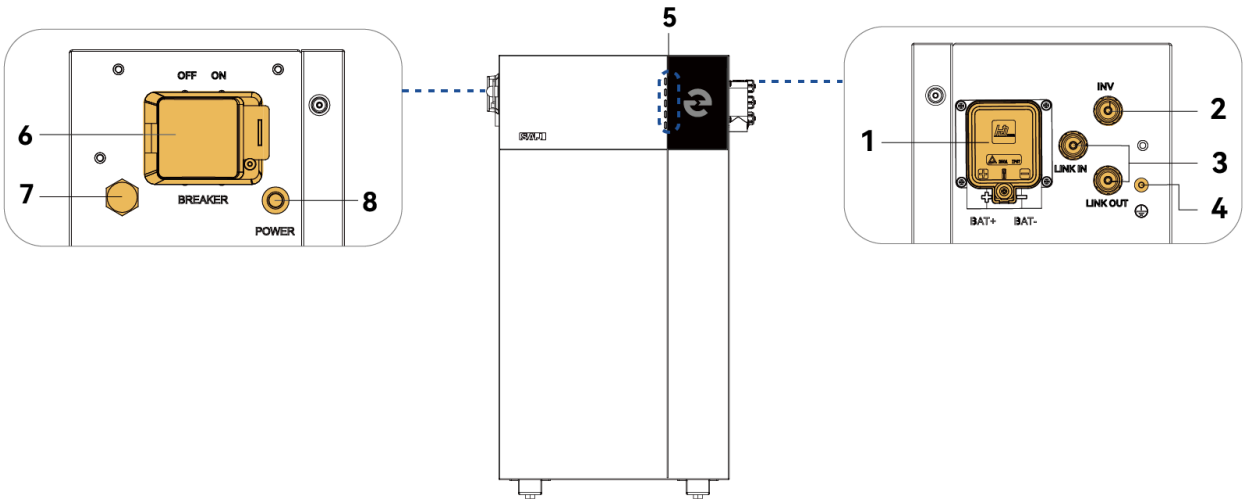
EK60	Product series.
B3	Battery model.
16.0	The nominal capacity of the battery is 16.0 kWh.
LV	Low-voltage battery.

2.3. Dimensions

- Without base (H*W*D): 797*501*224 mm
- With base (H*W*D): 825*501*224 mm

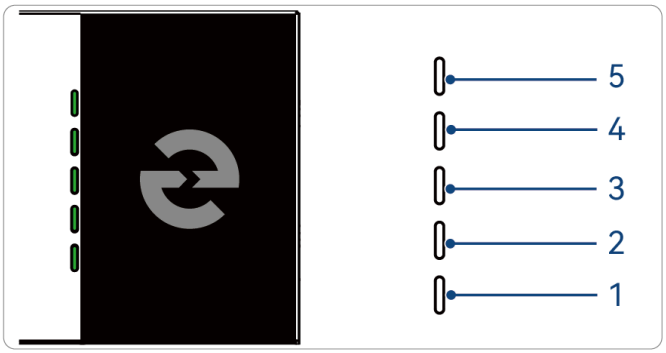


2.4. Electrical terminals



Callout	Silkscreen	Description
1	**BAT+**	Positive and negative battery terminals for connecting the battery to an inverter.
	BAT-	
2	**INV**	Communication port for connecting the battery to an inverter.
3	**LINK IN**	Communication ports for single-stack or multi-stack configuration.
	LINK OUT	
4	⏚	Protective earth (PE) port for connecting the battery to the ground.
5	**LED indicator**	LED indicators to show the status of the battery.
6	**BREAKER**	Circuit breaker to protect the battery from overcurrent and short-circuit conditions.
7	⬡	Explosion-proof vent valve.
8	**POWER**	Switch to power on/off the battery.

2.5. LED indicators



Note: The appearance may vary depending on different machine models.

Green lights (normal status)

Status	SOC	Description
Light 1 on	10-20%	• Solid on: The battery is charging or in no-charge / no-discharge state. • Last light breathing: The battery is discharging. For example, when lights 1-2 are solid on and light 3 is breathing, it indicates that the battery is discharging with SOC of 40-60%. • All lights breathing: The battery is standby. For example, when lights 1-3 are breathing, it indicates that the battery is standby with SOC of 40-60%.
Lights 1-2 on	20-40%	
Lights 1-3 on	40-60%	
Lights 1-4 on	60-80%	
Lights 1-5 on	80-100%	
Lights 1-5 chasing	/	Upgrade in progress. Do not power off during upgrade.

Table 2.1. Descriptions of green lights

Yellow lights (abnormal status)

Status	SOC	Description
Light 1 flashing (3s interval)	/	The battery voltage is low and forced charging is required.
Light 1 on	0-20%	• Solid on: A communication error occurred. • Flashing (1s interval): The battery is charging at a low temperature.
Lights 1-2 on	20-40%	
Lights 1-3 on	40-60%	
Lights 1-4 on	60-80%	
Lights 1-5 on	80-100%	

Table 2.2. Descriptions of yellow lights (abnormal status)

Red lights (warning or fault status)

Status	SOC	Description
Light 1 on	0-10%	Low battery charge. • Solid on: The battery is charging or in no-charge / no-discharge state. • Breathing: The battery is discharging or standby.

Status	SOC	Description
All lights on	/	A protection fault occurred, excluding the following special faults: • The battery is charging at a low temperature. • The battery voltage is low and forced charging is required.

Table 2.3. Descriptions of red lights (warning or fault Status)

3. Transportation and storage

3.1. Transportation

3.1.1. Transportation safety instruction

⚠ WARNING

- The product has passed the UN38.3 test and meets the transportation requirements for dangerous goods, including lithium-ion batteries.
- The transportation service provider must be qualified to transport dangerous goods.
- Before transportation, check that the battery package is intact and that there are no abnormal odour, leakage, smoke or signs of burning. Otherwise, the batteries must not be transported.
- Keep no more than 6 cartons of batteries in one stack during transportation.
- Do not place other items on top of the battery during transportation.
- Load or unload batteries with caution. Otherwise, the batteries may short circuit or become damaged like leakage or cracking, catch fire or explode.
- When using hand truck to transport the battery, place the battery evenly and securely. Otherwise, the hand truck may tip over, leading to personal injury or battery damage.

NOTICE

After installing the battery on site, keep the original packaging containing the lithium-ion battery identification. When the battery needs to be returned to the factory for repair, use the original packaging to transport it.

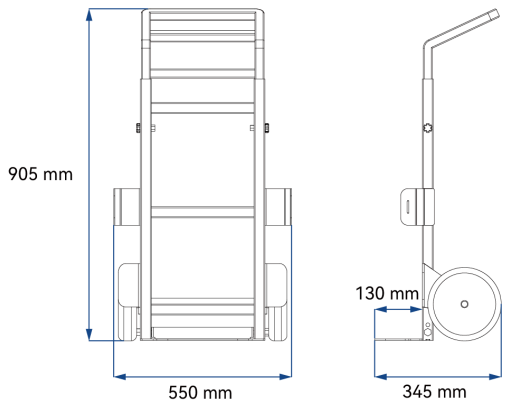
3.1.2. Description of the hand truck

NOTICE

- Due to the battery package is too heavy to lift manually, transporting it with a suitable hand truck is recommended. Contact after-sales to purchase the hand truck from SAJ.
- If the hand truck used is not provided by SAJ, ensure that the hand truck has a rated capacity that meets or exceeds the weight of the battery pack and is equipped with a base plate wide enough to fully support the battery base.

Dimensions

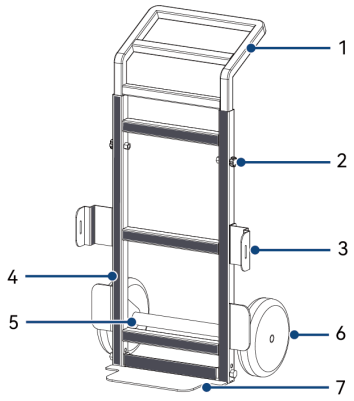
Dimensions (H*W*D): 905*550*130 mm



Components description

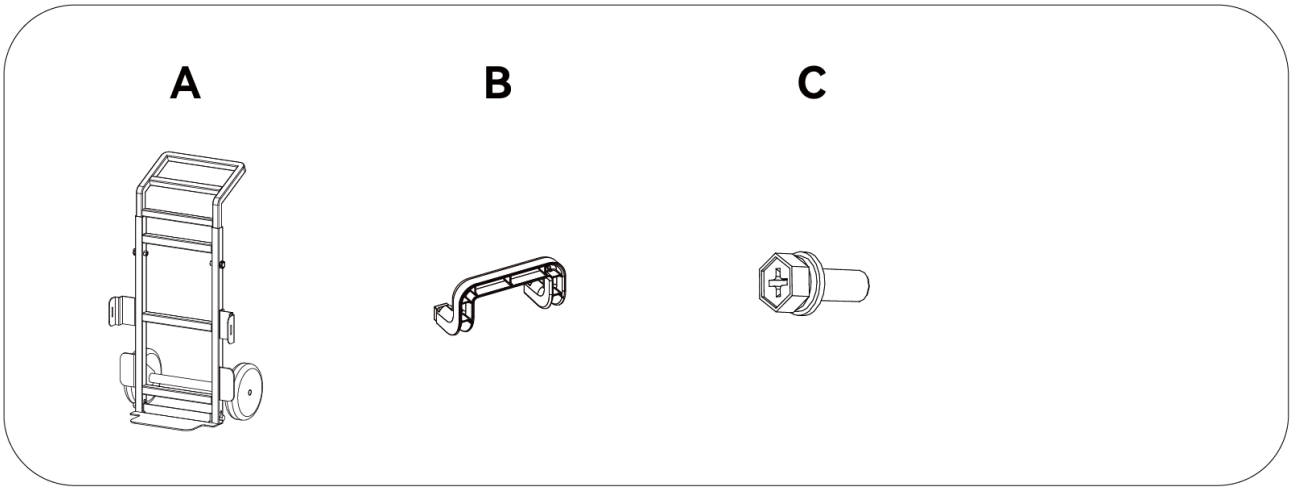
NOTICE

Check regularly whether the sealing strip becomes loose after long-term use to prevent scratches on the battery cover.



Number	Description
1	Adjustable handle
2	Adjustable bar
3	Strap slot
4	Sealing strip
5	Crossbar
6	Wheel
7	Base plate

Packing list

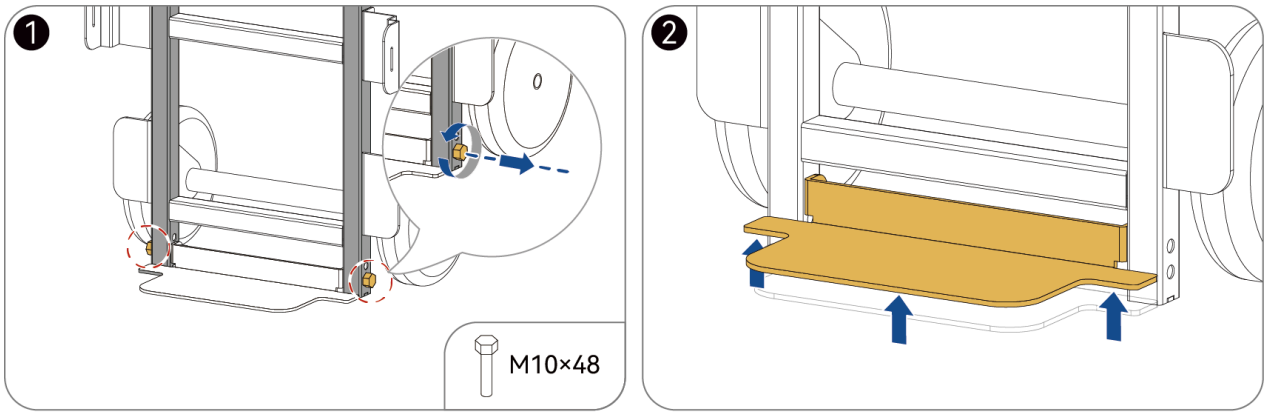


Number	Quantity	Designation
A	1	Hand truck
B	4	Handle for lifting the battery pack
C	8	M6*14 screw for handles

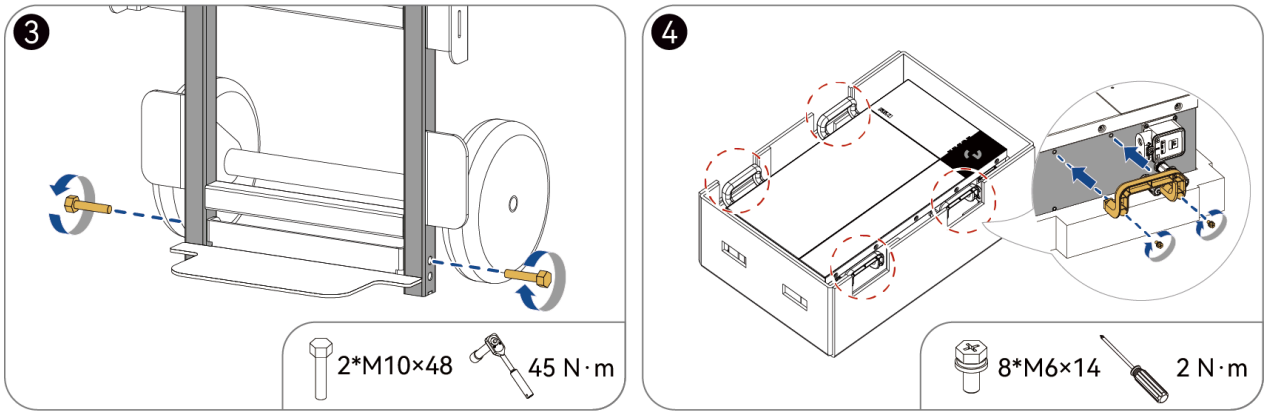
3.1.3. Transportation procedure

Procedure

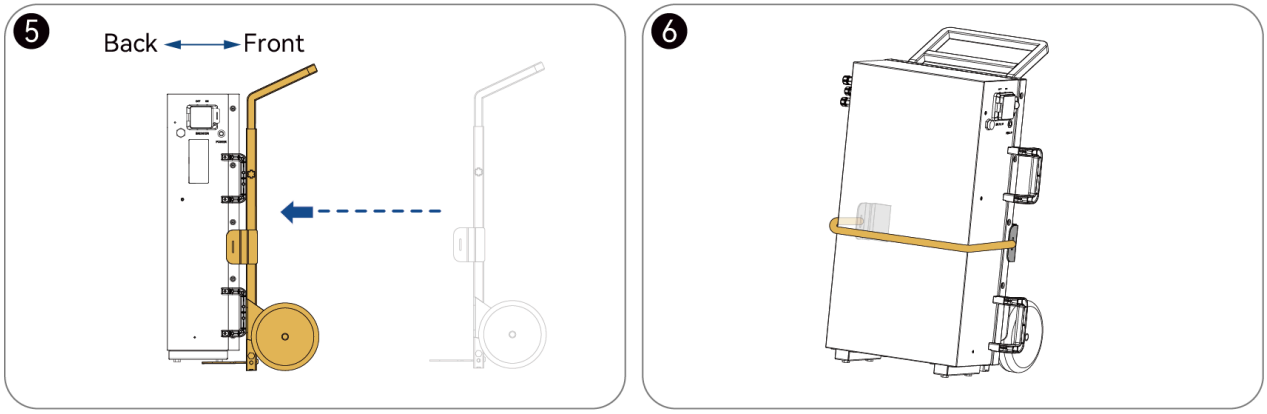
1. (Optional, subject to actual screw layout) Loosen the screws on both sides of the hand truck.
2. (Optional, subject to actual screw layout) Raise the base plate to align with the upper screw holes.



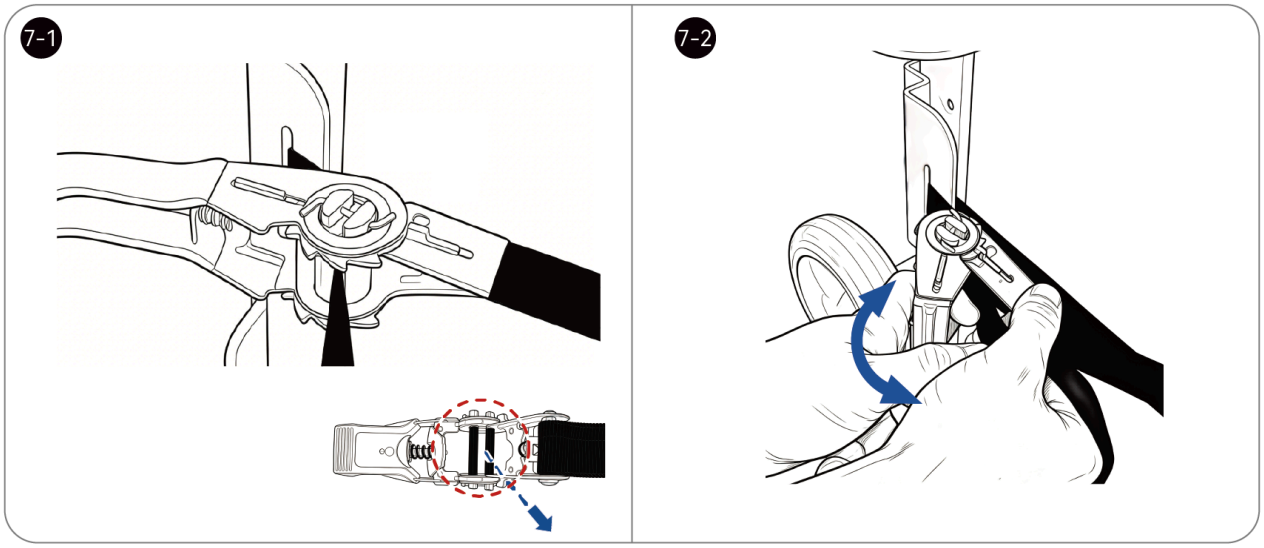
3. Tighten the screws on both sides to secure the base plate.
4. Mount two handles on each side of the battery for easy lifting.



5. Place the battery onto the hand truck with its front facing inward.
6. Thread the strap through the strap slots on both sides of the hand truck to secure the battery.



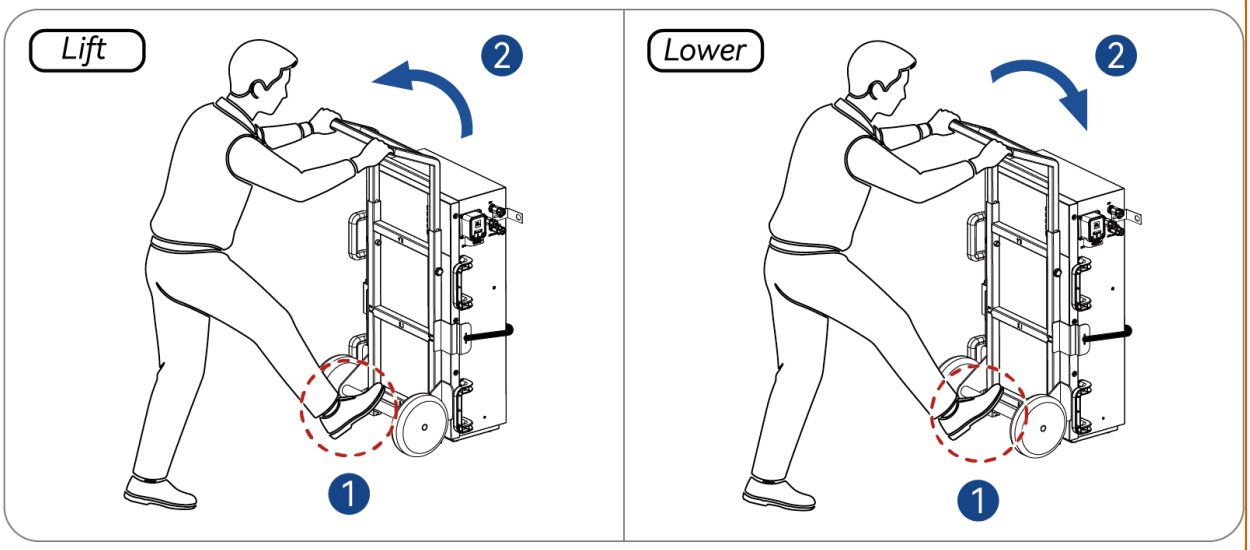
7. To fasten the battery to the hand truck, thread the strap through the center slot of the tensioner. Close the tensioner and toggle repeatedly to tighten the strap.



8. Move the battery slowly and steadily. Avoid sudden stops, starts, or sharp turns.

⚠ WARNING

- Be cautious when operating the hand truck. Before lifting or lowering the battery pack, brace one foot against the lower crossbar of the hand truck to prevent unintended sliding caused by the battery's weight.



- When placing the battery onto the hand truck, place the battery with its front side facing inward **ONLY**. **DO NOT** force the battery in with its rear side inward.
- **DO NOT** place the battery front-side down for extended periods. Positioning the battery with the cells facing downward will shorten battery service life and pose safety hazards.
- Restore the battery to vertical state and complete installation promptly once transportation is finished.

3.2. Storage safety instruction

WARNING

- Store the battery in a dry and ventilated environment and keep it away from heat sources.
- For daily use or short-term storage, keep the battery at temperatures between -10℃ and 50℃, with relative humidity from 0% to 95%.
- For long-term storage (3–6 months), store the battery at temperatures between -20℃ and 25℃, and keep relative humidity below 85%.
- Avoid rapid temperature changes to stop moisture from forming inside the device. Condensation can cause short circuits, corrosion, or failure.

NOTICE

- When shipped from the factory, the battery retains 40% of its charge.
- The State of Charge (SOC) decreases over time during storage. If the remaining battery voltage falls below the required startup voltage, the battery may become damaged.
- To check operation, close the circuit breaker and press the switch. A solid green light indicates normal operation. A solid red or yellow light indicates malfunction.
- The battery should be installed within 6 months and used only with compatible inverters.
- This battery must not be disposed of as household waste. Once the battery reaches the end of its service life, it does not need to be returned to the dealer or **SAJ**, but must be taken to a designated waste lithium battery recycling facility in your area.

4. Installation

4.1. Safety instruction

⚠ DANGER

Risk of fatal electric shock

Battery terminals and cables may be energized at lethal voltages when the inverter is off.

- Disconnect all AC and DC power sources before installation.
- Verify no voltage is present using a voltmeter.
- Never handle terminals or tools with wet hands or while standing on a wet surface.
- Remove all rings, watches, and other metal objects before installation.
- Use insulated tools and wear personal protective equipment.

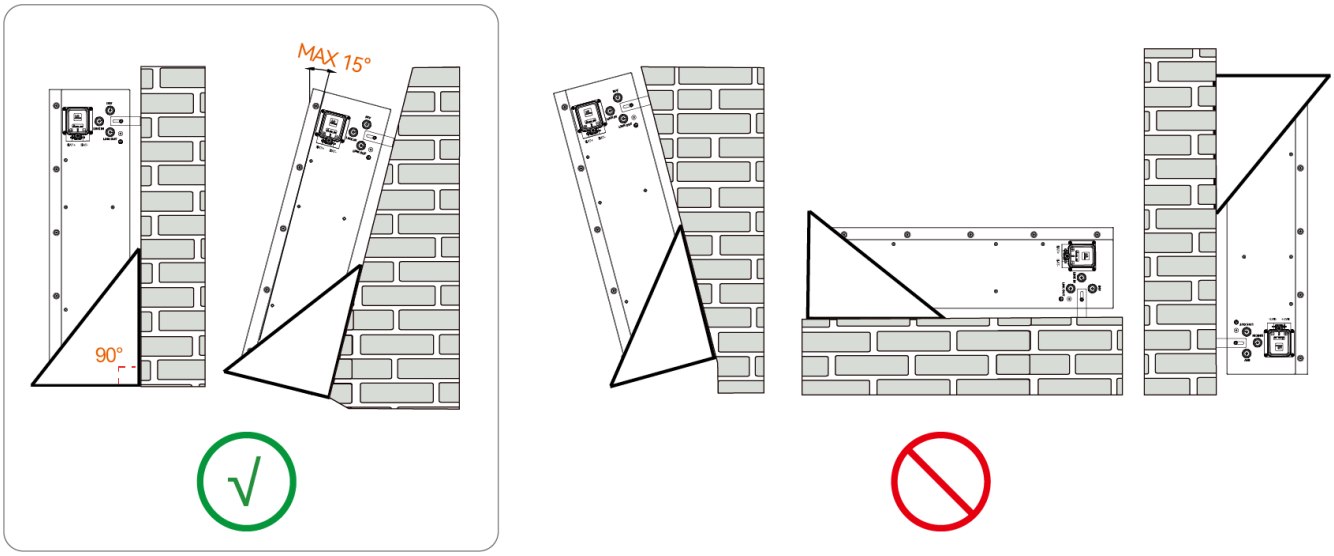
4.2. Installation environment requirements

- Do not expose the device to direct solar irradiation as this could cause power derating due to overheating.
- The installation environment must be free of inflammable or explosive materials.
- The device must be installed in a place away from any heat source.
- Do not install the device at a place where the temperature changes extremely.
- Keep the device away from children.
- Do not install the device in the bedroom, toilet, or bathroom. The installation site must be at least 1.2 meters away from the emergency exit.
- When installing the device at the garage, keep it away from the driveway.
- Keep the device from water sources such as taps, sewer pipes and sprinklers to prevent water seepage.
- For outdoor installation, keep the device away from direct sunlight, rain and snow.
- Keep the air inlet and outlet at the installation site clear. If natural airflow is insufficient, add extra ventilation and consult SAJ for assistance.
- Ensure the inverter is installed in a well-observed area where the LED display panel can be easily read for real-time status check.

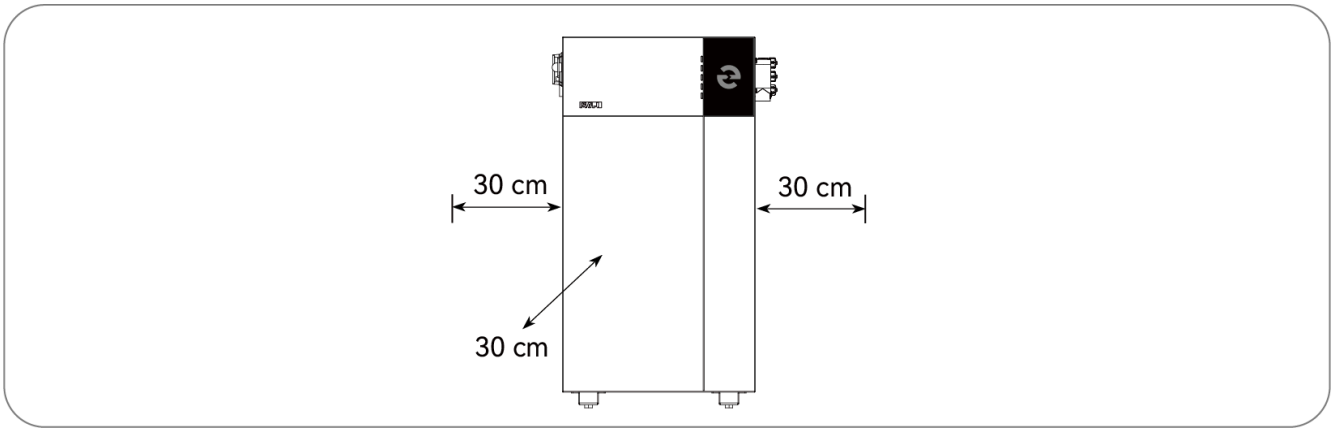


4.3. Installation location requirements

- The device employs natural convection cooling and must be installed in a non-habitable indoor location.
- To prevent overheating of the device, install the device in an environment with an ambient temperature preferably below 40 °C. Keep the battery at least 1 m away from heat sources.
- For wall-mounting method, choose a solid and smooth wall to ensure that the device can be installed securely on the wall. Make sure that the wall can bear the weight of the device and accessories.
- Install the device vertically. Do not install it forward-tilted, horizontally or upside down.



- Reserve enough clearance around the device to ensure a good air circulation at the installation area, especially when multiple devices need to be installed in the same area.



4.4. Installation tools

Installation tools include but are not limited to the following recommended ones. Use other auxiliary tools on site if necessary.

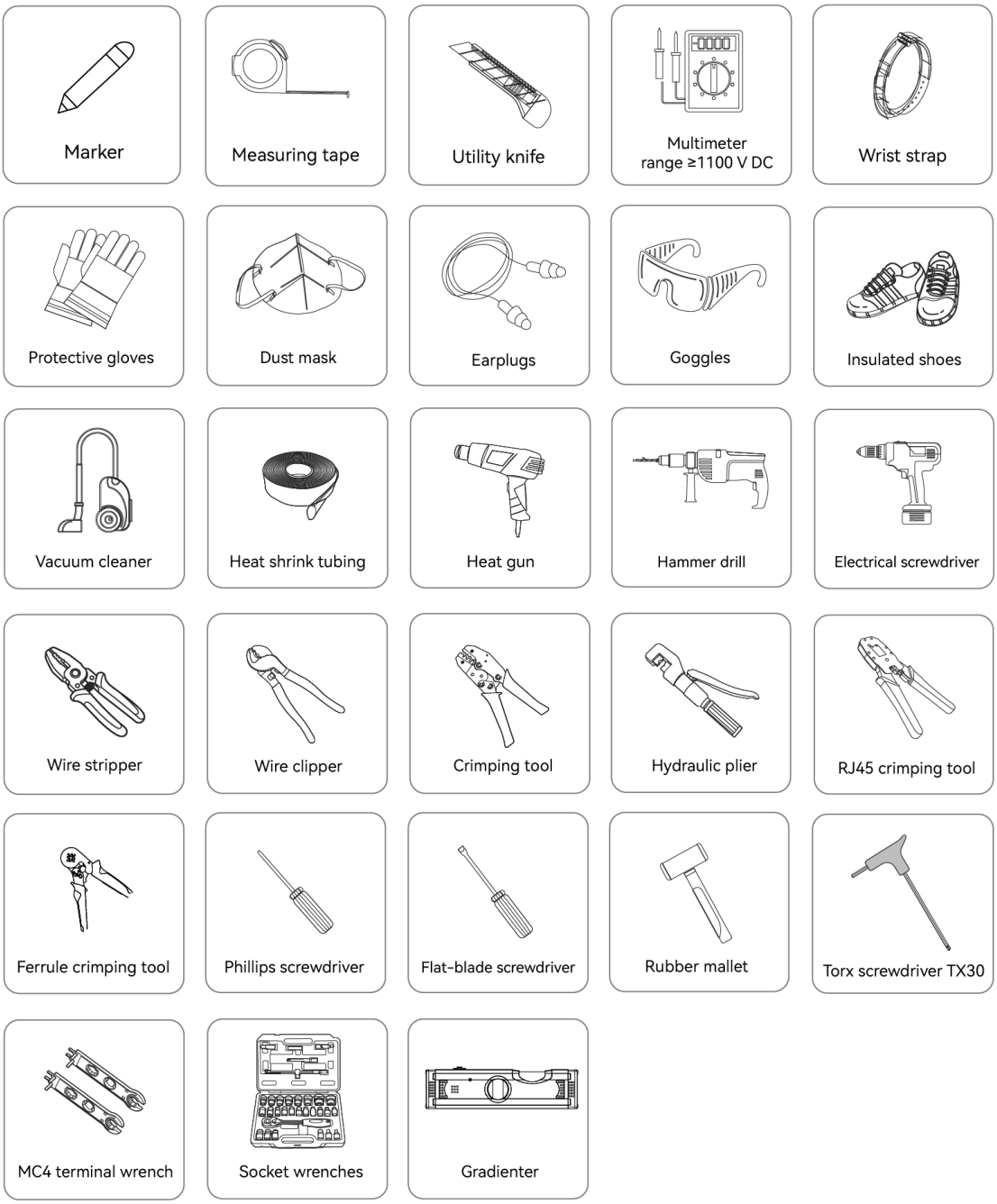


Figure 4.1. Suggested installation tools

4.5. Unpacking

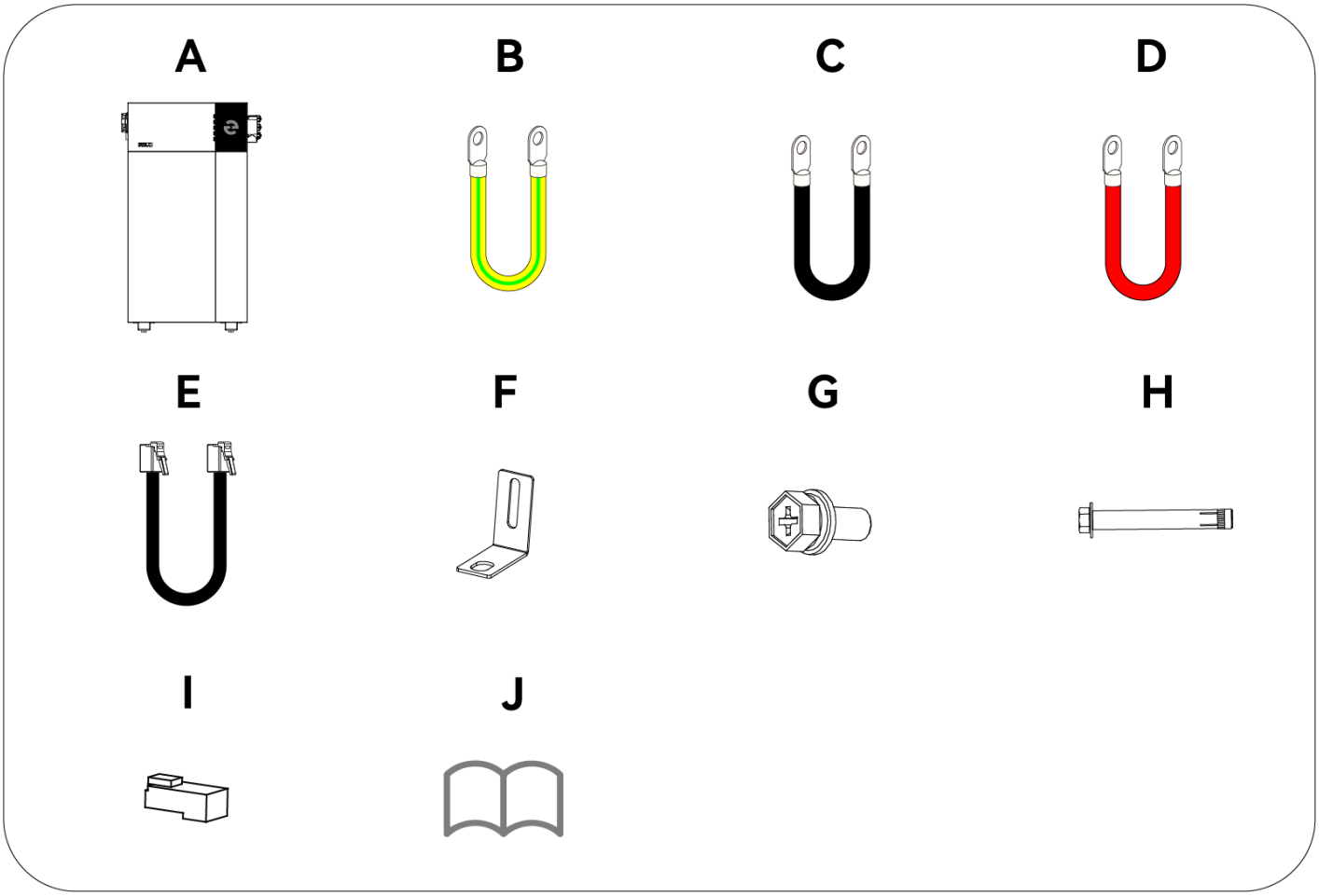
Procedure

1. Check the outer packing
   a. Check the outer packing package for any damage, such as holes and cracks.
   b. Check whether the equipment model is what you requested or not.

   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 package contents
   a. Verify that the shipment contains everything that you expected to receive. Contact after sales if there are missing or damaged components. For detailed contents, see 4.6. Packing list *(on page 21)*.
   b. Place the accessories separately to avoid confusion.

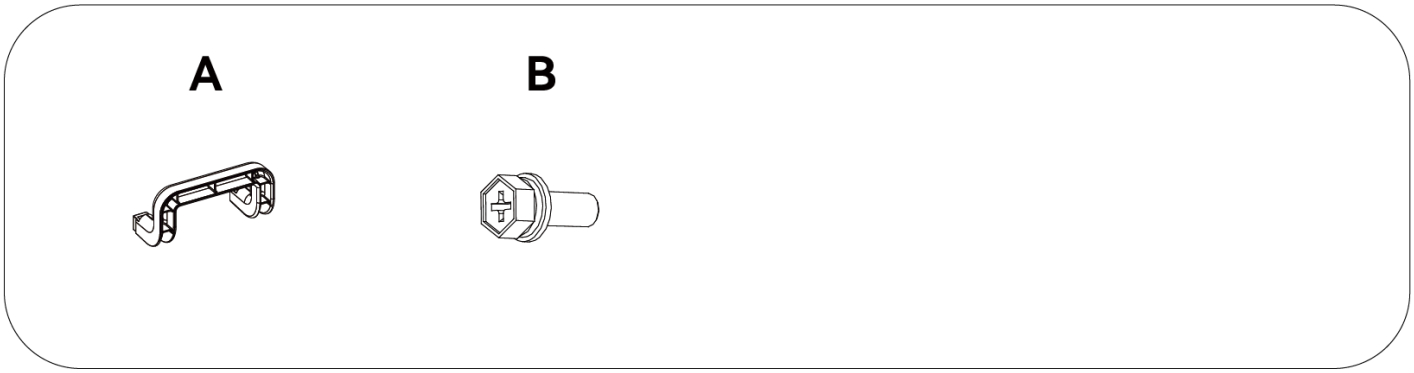
4.6. Packing list

- For floor-mounting installation



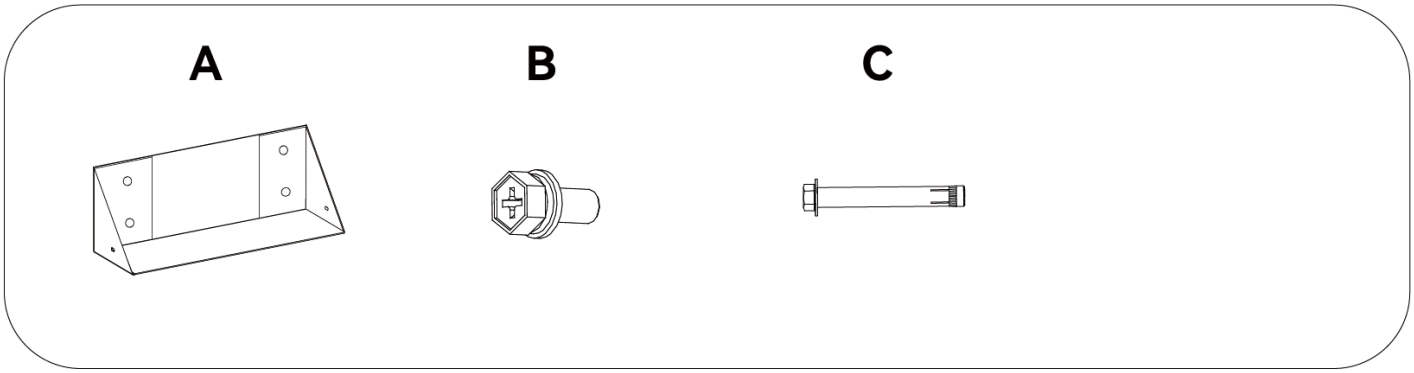
Number	Quantity	Designation
A	1	EK60 B3-16.0-LV battery pack
B	1	Grounding cable
C	1	Negative power cable
D	1	Positive power cable
E	1	Communication cable
F	2	Locking bracket
G	2	M6*12 screw
H	2	M12*80 expansion bolt
I	1	RJ45 plug
J	1	Documentation

- (Optional) Additional accessories for easy-lifting



Number	Quantity	Designation
A	2	Handle for lifting the battery pack
B	4	M6*14 screw for handles

- (Optional) Additional accessories for wall-mounting installation



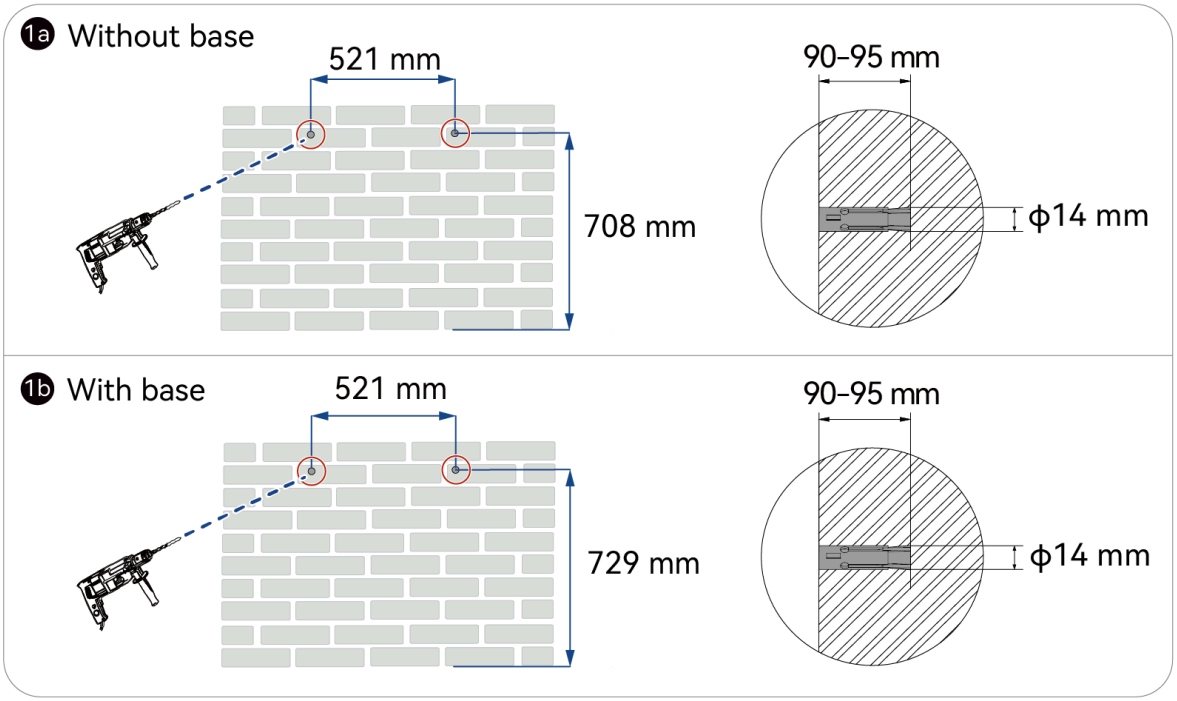
Number	Quantity	Designation
A	1	Wall-mounting bracket
B	2	M5*14 screw
C	4	M12*80 expansion bolt

4.7. Install battery on the floor

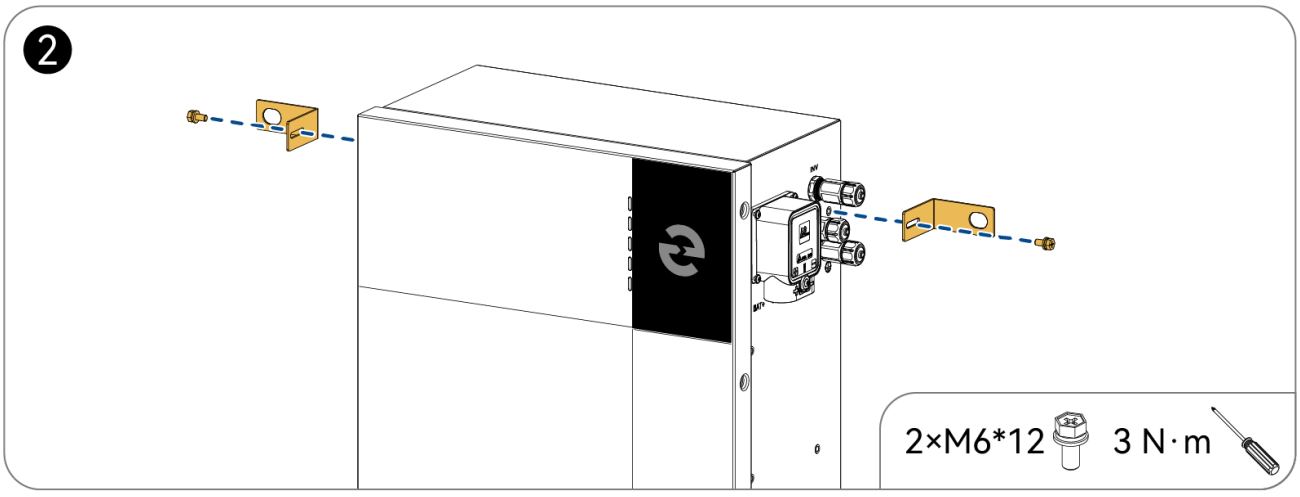
Procedure

1. Mark and drill two holes on the wall.

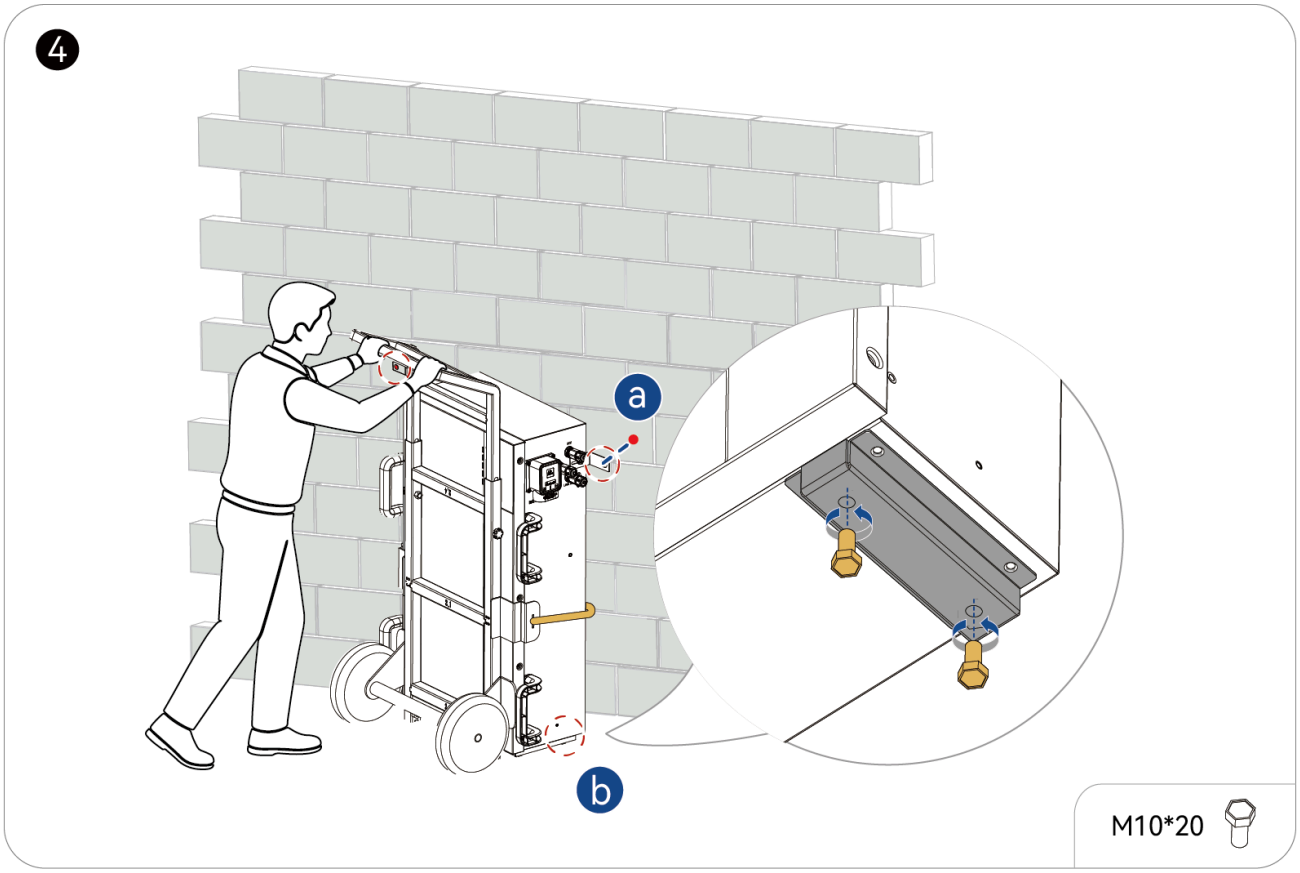
   Note: If the battery is installed with its base attached, leave clearance for the base when drilling holes.



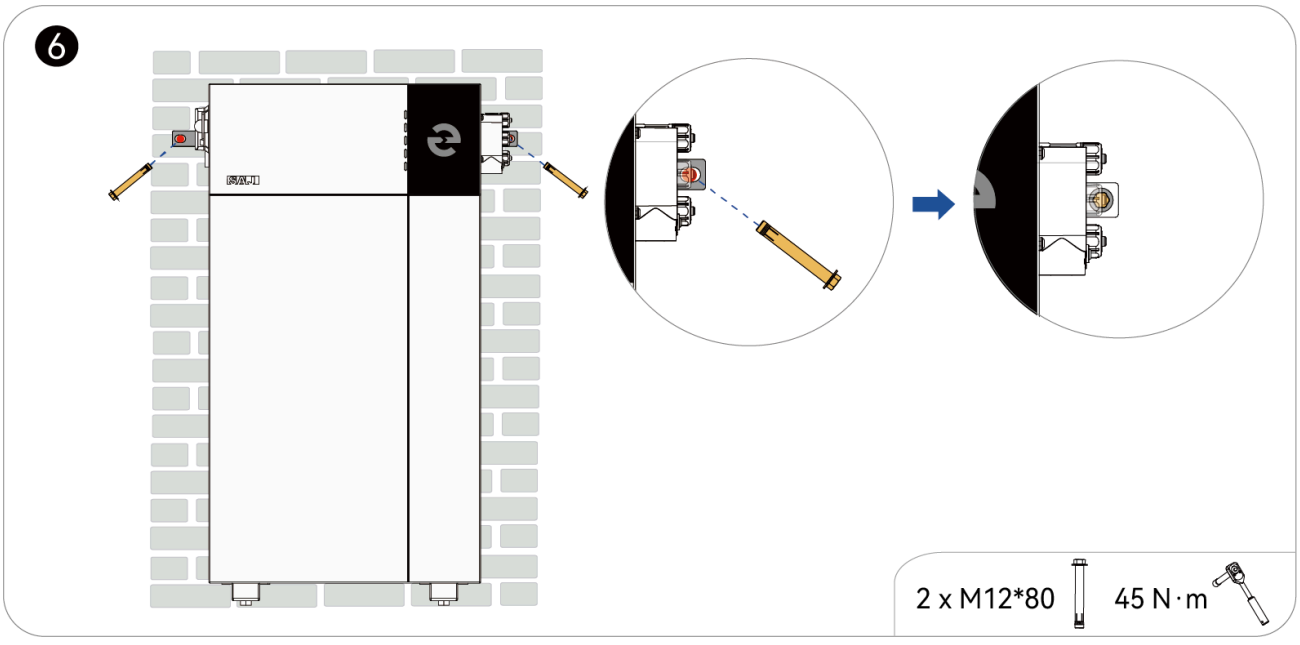
2. Secure a locking bracket to each side of the battery.



3. Use a hand truck to move the battery against the wall. For transportation guidelines, refer to 3.1.3. Transportation procedure *(on page 13)*.
4. (Optional) With the battery pack secured on the hand truck, adjust the battery to align locking bracket holes with wall holes. Then, one person holds the hand truck steady, while the other extends the leveling screws outwards to match base-to-floor clearance.



5. Once leveling is finished, slide and withdraw the hand truck from underneath the battery pack. Then, uninstall the handles.
6. Insert two expansion bolts through the aligned hole, then tighten the bolts firmly with a socket wrench.



4.8. Install battery on the wall

Procedure

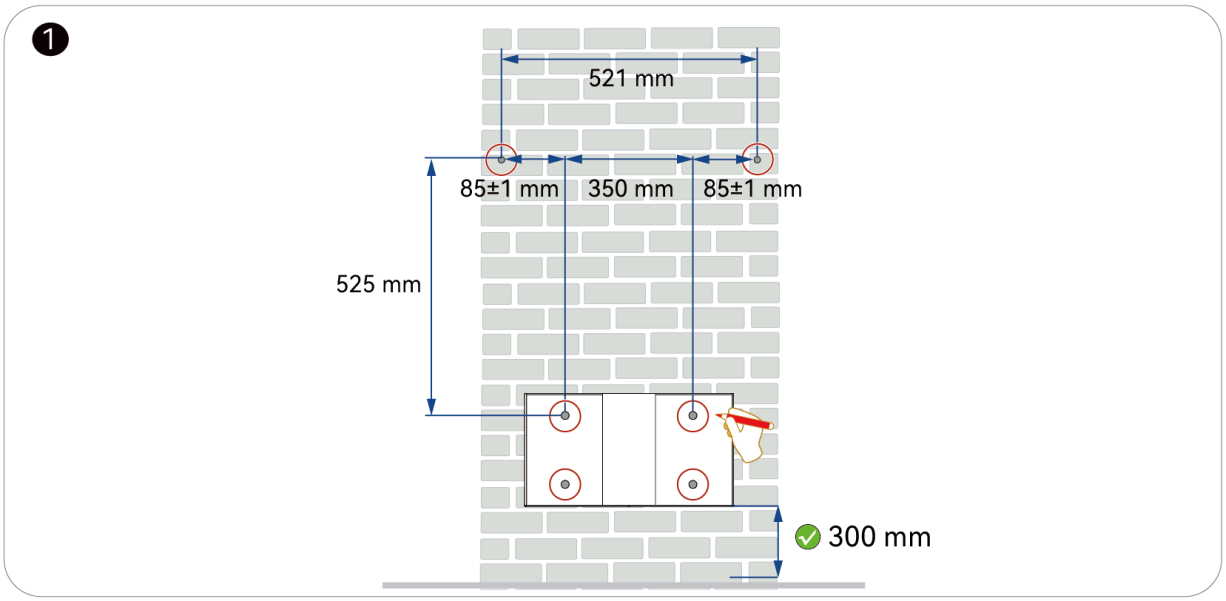
⚠ WARNING

- Before installation, verify that the wall meets adequate load-bearing requirements. Only solid concrete walls are permitted; hollow walls are not acceptable.
- The battery weighs 110 kg. Do not install it alone; at least two people are required for installation.
- To transport the battery, the use of a hand truck is recommended. For purchasing or assistance with using a hand truck provided by SAJ, please contact after-sales service.
- Before lifting the battery onto the wall-mounting bracket, ensure all bracket expansion bolts are fully installed and tightened.

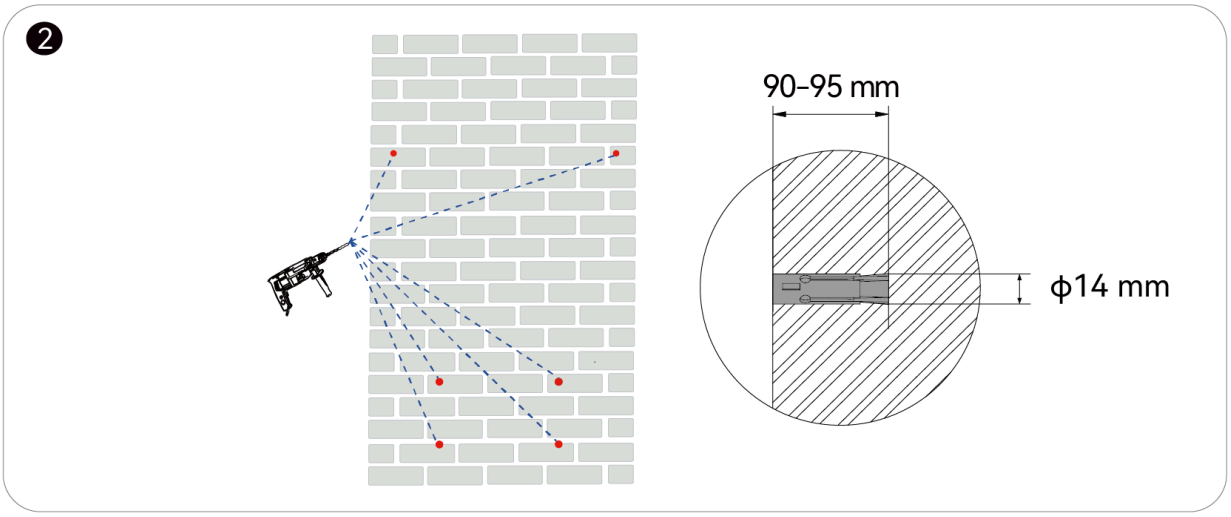
1. Use a level gauge to position the wall-mounting bracket against the wall at the desired height. Mark four holes on the wall through the bracket. Then, mark another two holes for the locking brackets on both sides of the battery.

⚠ CAUTION

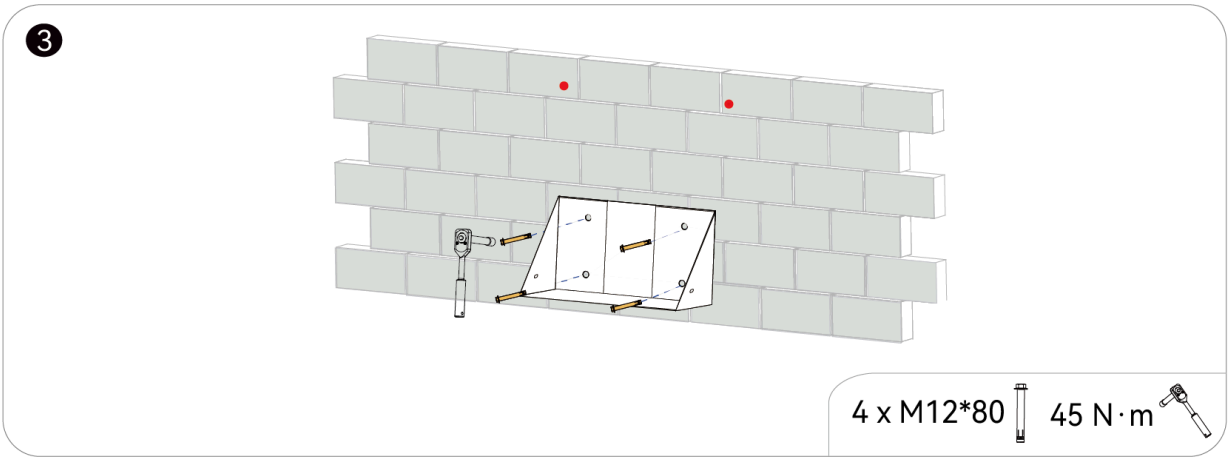
The recommended height for the mounting bracket is 300 mm.



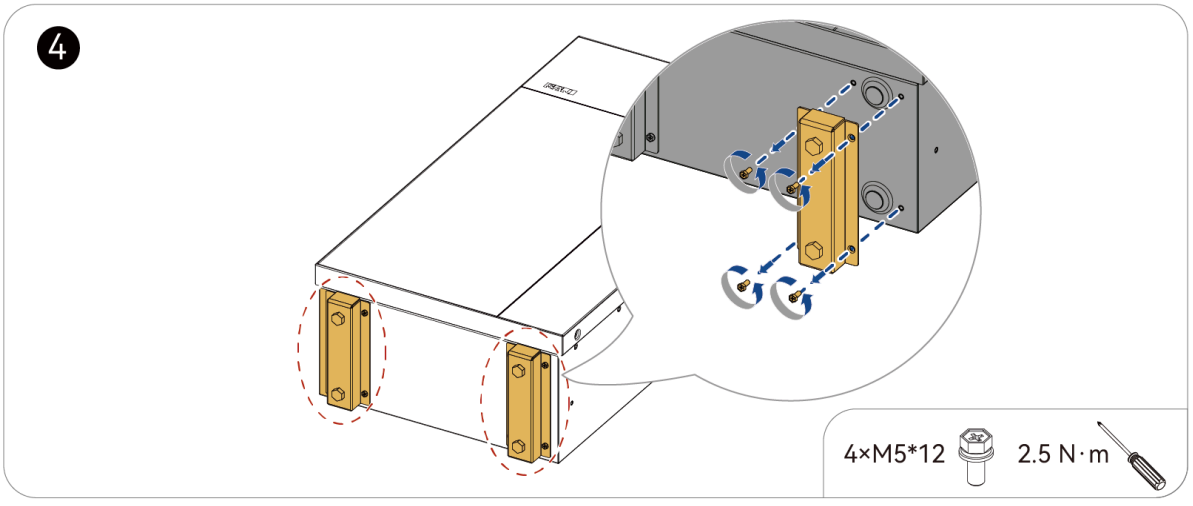
2. Drill six holes according to the marks.



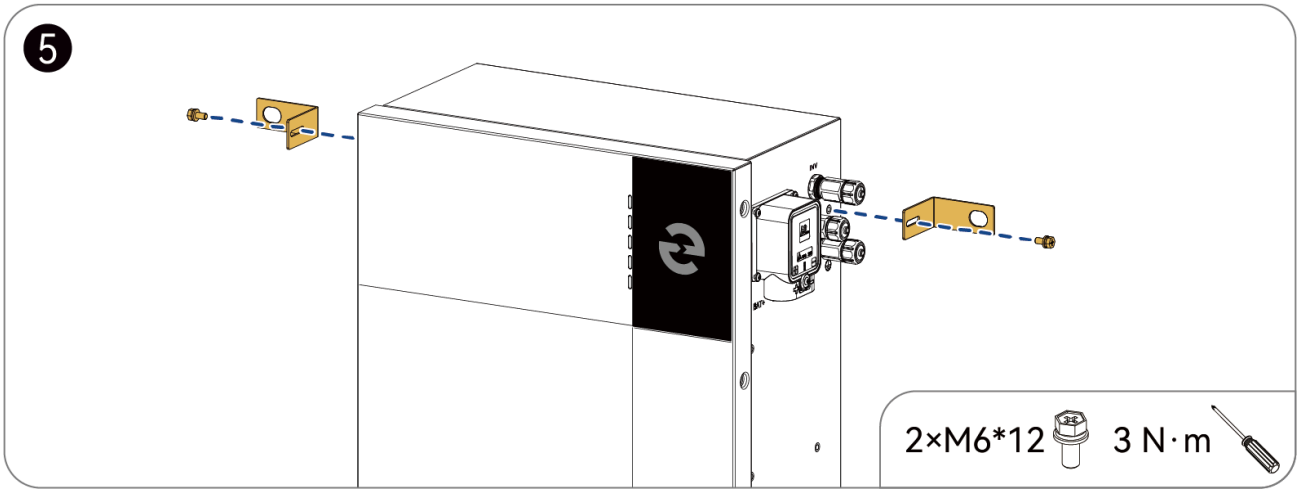
3. Align the bracket with the four lower holes. Insert an expansion bolt into each hole. Tighten all bolts to secure the bracket against the wall.



4. Loosen the screws on the base and remove the base.

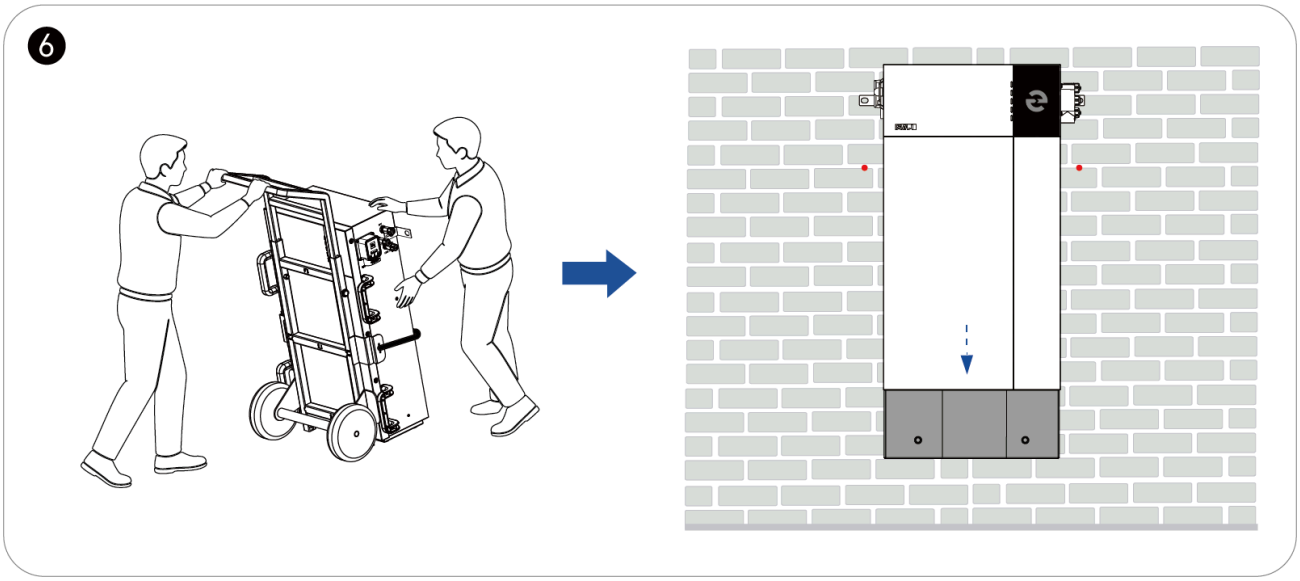


5. Secure a locking bracket to each side of the battery.

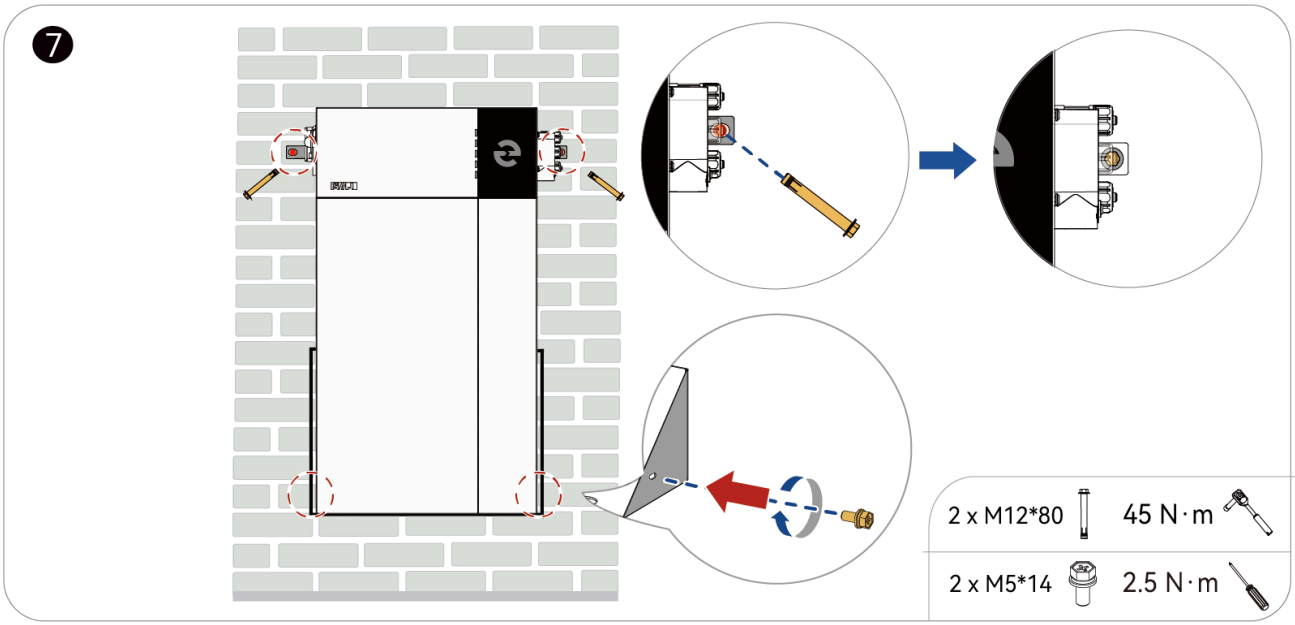


6. Use hand truck to move the battery against the wall. For transportation guidelines, refer to 3.1.3. Transportation procedure *(on page 13)*. With at least two people holding the handles of the battery pack, carefully lift the battery from the base plate of the hand truck, and place it onto the wall-mounting bracket.

Note: Uninstall the handles after placing the battery onto the bracket.



7. Align both locking bracket with the holes marked. Insert two expansion bolts into the holes and tighten the them firmly with a socket wrench. Insert a screw to each side of the mounting bracket to secure the battery.



5. Electrical connection

5.1. Safety instruction

DANGER

Dangerous to life due to potential fire or electric shock

- Electrical connection must only be performed by professional technicians.
- Before connecting, necessary protective equipment must be used by technicians including insulating gloves, insulating shoes, and safety helmet.
- Before connecting, ensure the battery system is powered off.
- When it is powered on, the equipment should be in conformity with national rules and regulations.
- Any improper operation during cable connection may cause short citcuit, device damage or personal injury.

WARNING

Risk of electric shock and burn

Improper wiring or connection can cause overheating, arcing, or fire.

- Ensure all connections are clean, tight, and torque to the manufacturer's specification.
- Use only cables of the correct gauge and type as specified.
- Observe correct polarity (+/-). Reverse polarity can permanently damage equipment.

5.2. Grounding connection

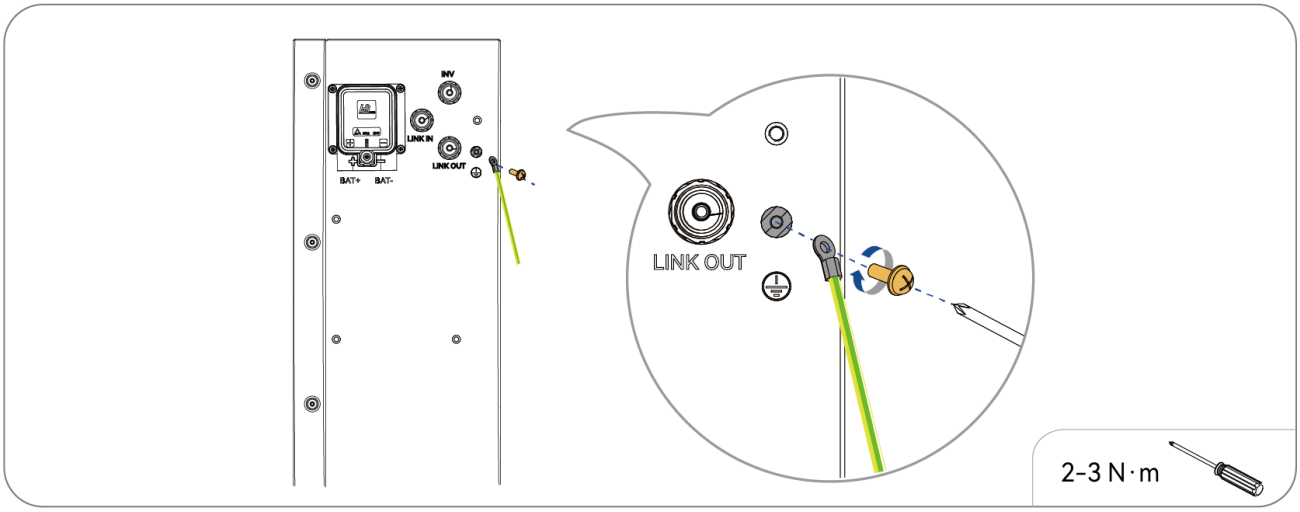
Follow the steps below to assemble the grounding cable to the grounding port.

CAUTION

The grounding cable must be connected before other electrical connections.

Procedure

Loosen the screw on the grounding port. Insert the screw through the cable lug to the grounding port and secure the screw.

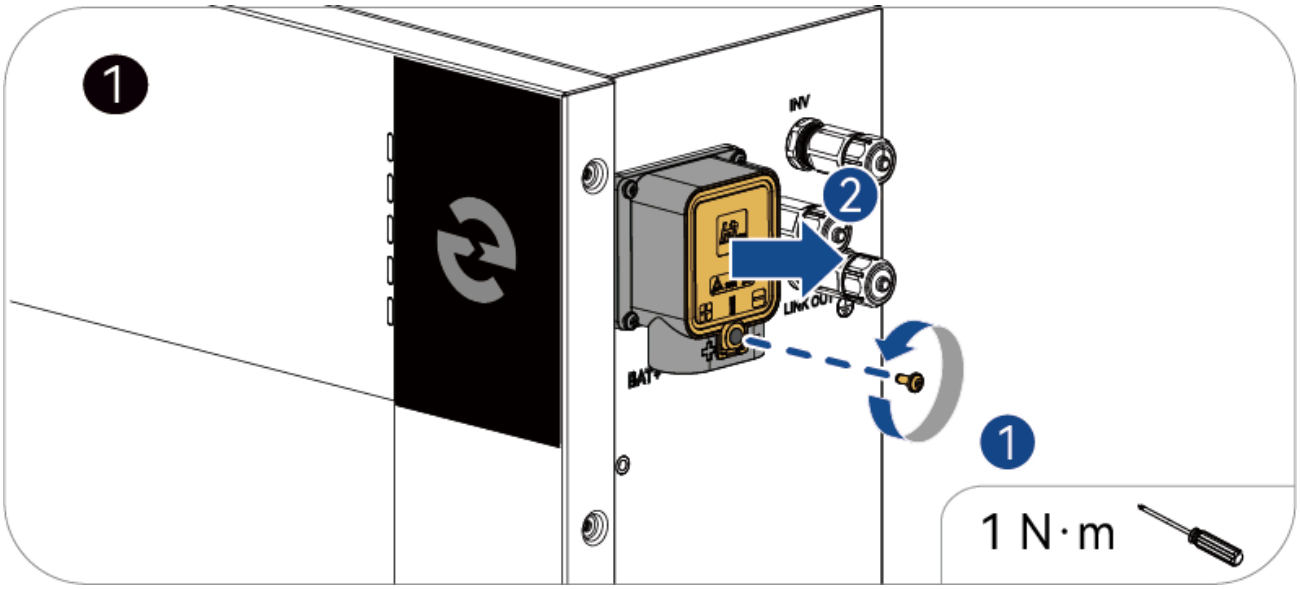


5.3. Power connection

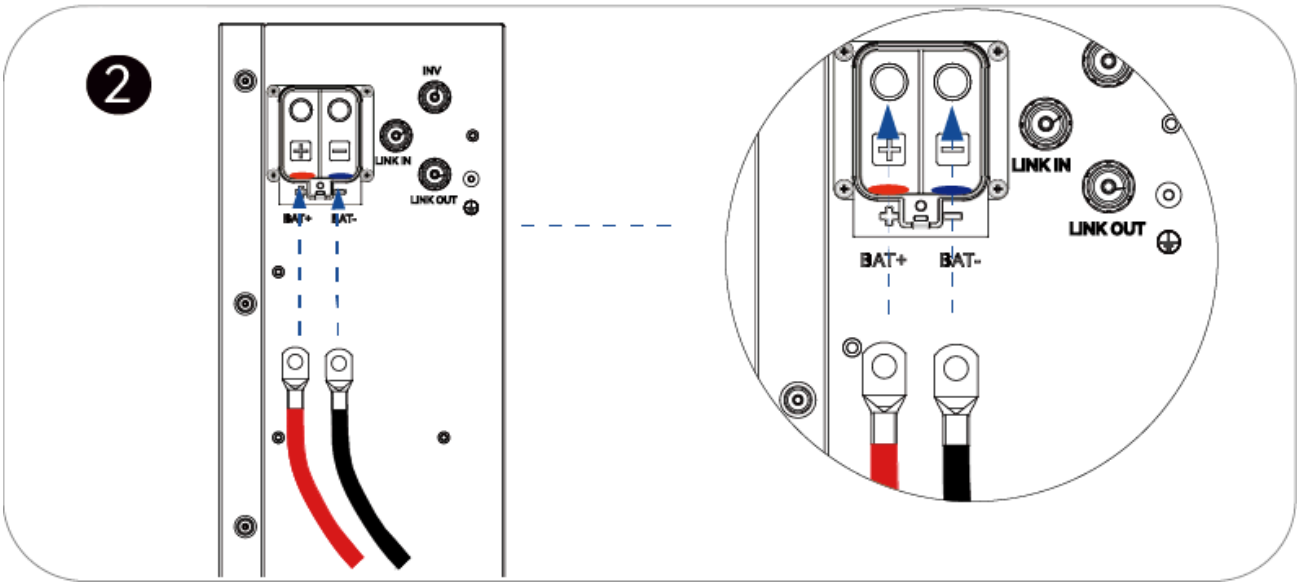
Follow the steps to assemble the positive and negative cables to terminals **BAT+** and **BAT-**.

Procedure

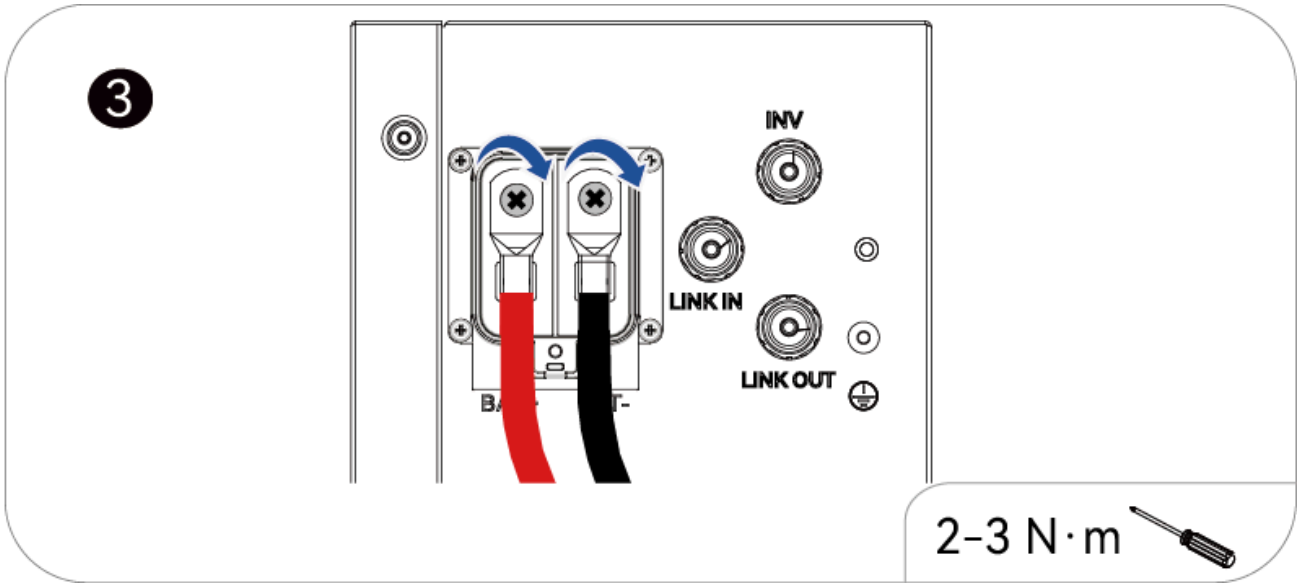
1. Unscrew and remove the junction box cover.



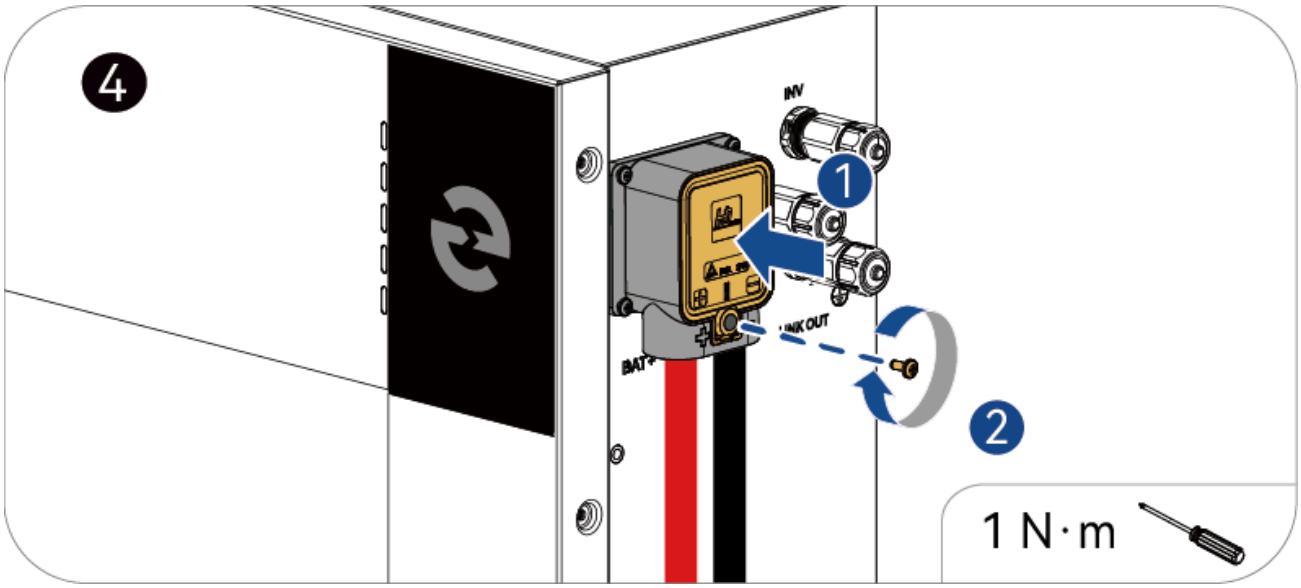
2. Pierce the bottom rubber grommet and insert the positive and negative battery cables through.



3. Tighten the terminal screws to secure the positive and negative battery cables to terminals **BAT+** and **BAT-** respectively.



4. Tighten the cover screws to reinstall the cover.

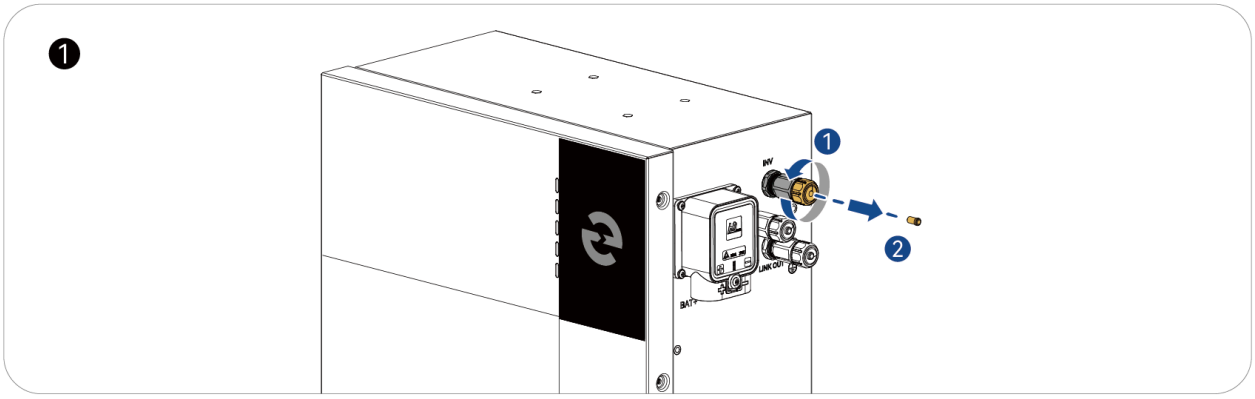


5.4. Communication connection

Follow the steps to assemble the communication cable and connect it to one of the communication ports. This section uses **INV** as an example.

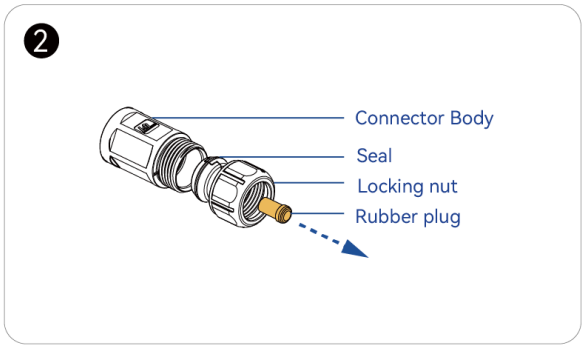
Procedure

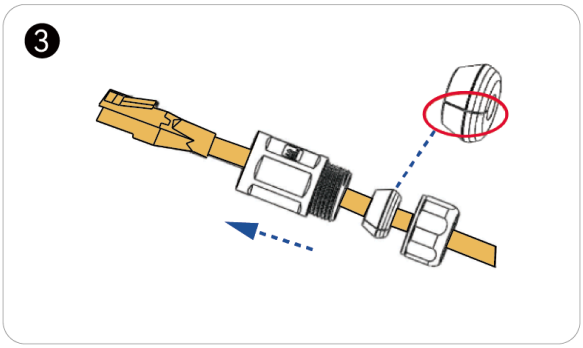
1. Loosen the locking nut of the connector on the port.



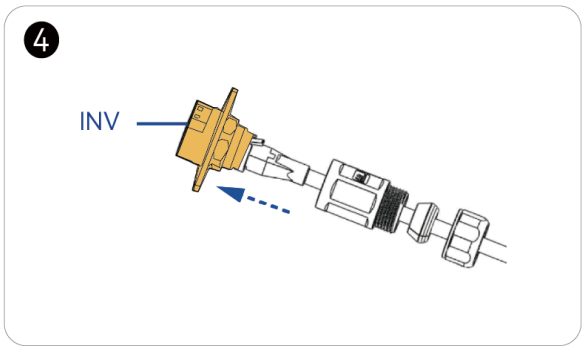
2. Remove the rubber plug from the seal.
3. Pass the communication cable through the locking nut, seal, and connector body in sequence.

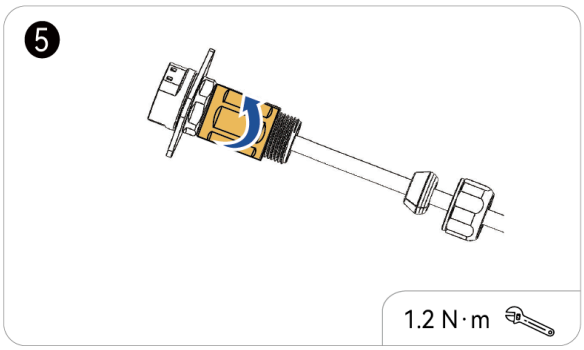
   Note: When passing the cable through the seal, clip the cable into the slit to secure it in place.





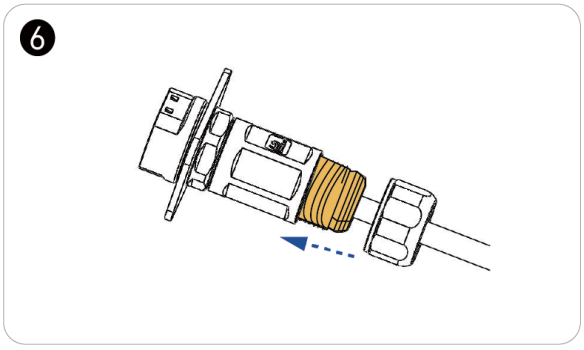
4. Insert the communication cable into the port.
5. Use an open-end wrench to tighten the connector body.

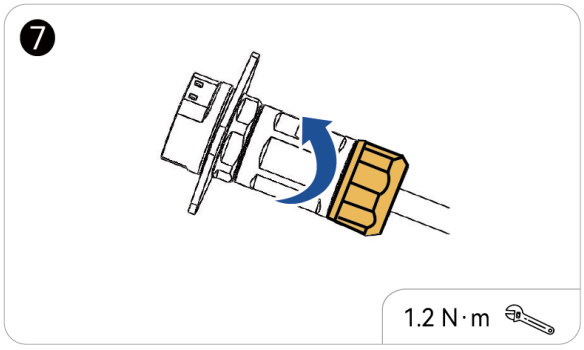




6. Insert the seal firmly into the connector body.

7. Use an open-end wrench to tighten the locking nut onto the connector body, securing the cable in place.

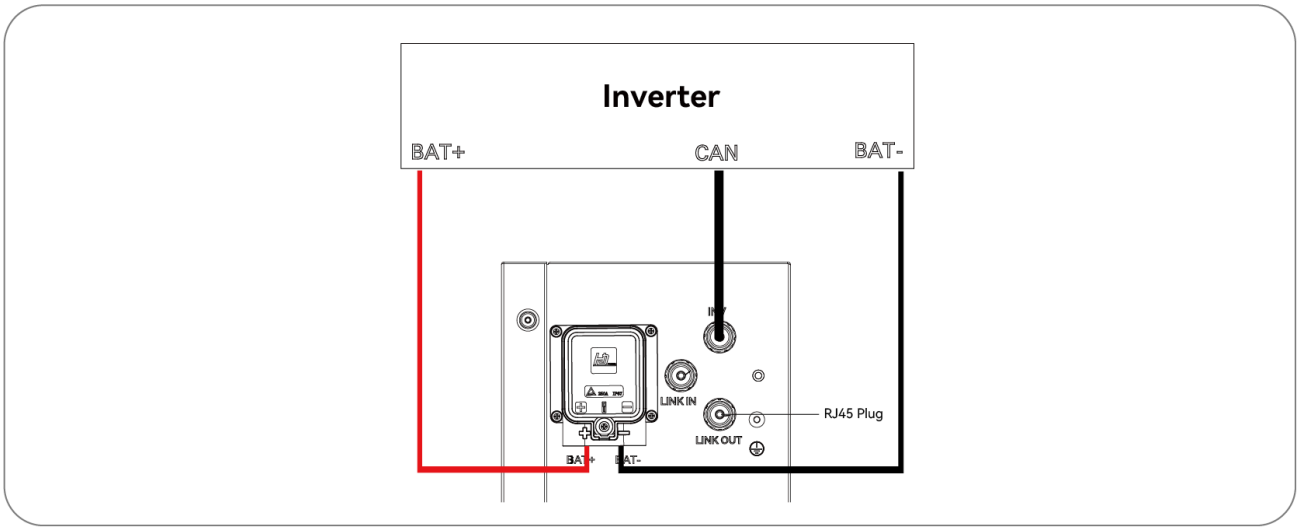




5.5. Connect battery to inverter

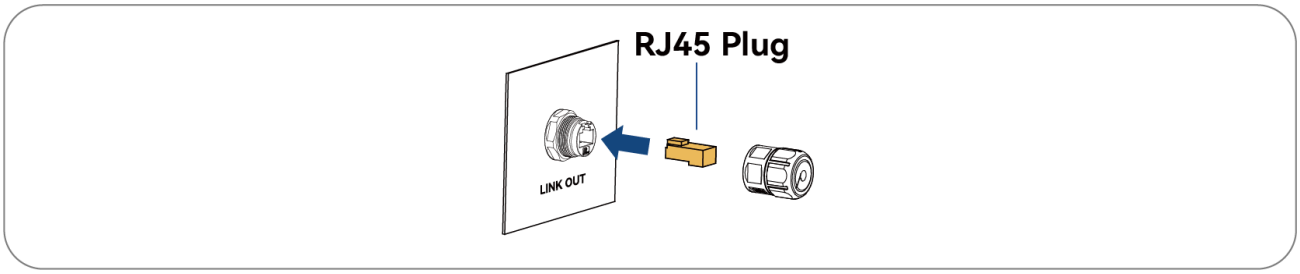
Connect a single battery pack

1. Connect the power cables and communication cable between the battery and an inverter.



Cable	Port on battery	Port on inverter
Positive power cable	**BAT+**	BAT+
Negative power cable	**BAT-**	BAT-
Communication cable	**INV**	CAN

2. Loosen the **LINK OUT** connector and insert an RJ45 plug into the **LINK OUT** port.



Note:

- Do not intertwine the communication cable and power cables.
- When assembling the communication cable, you can use an open-end wrench to fasten an RJ45 connector to the CAN port on the inverter.

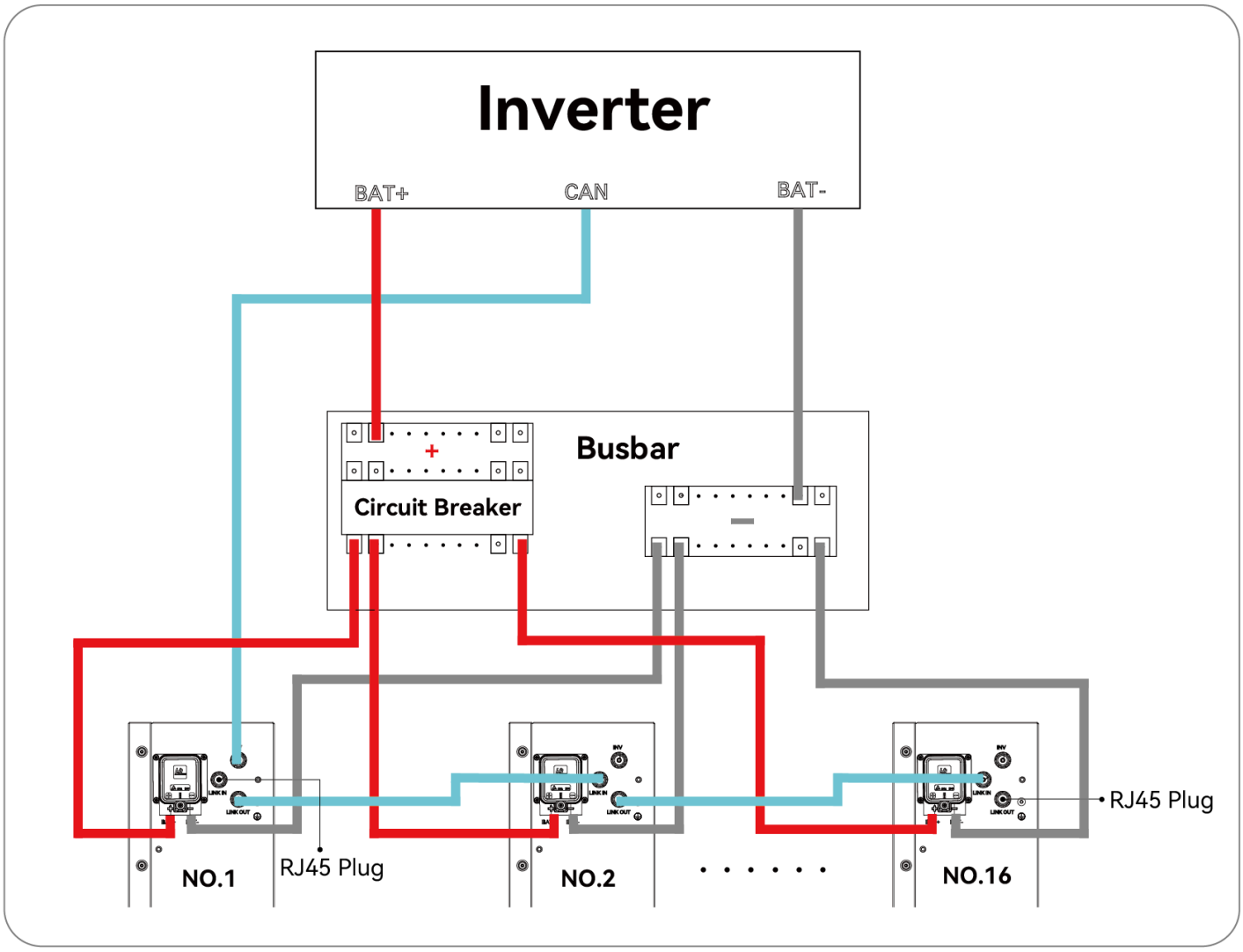
Connect multiple batteries in parallel

NOTICE

Batteries of different series or models must not be connected in parallel. The latest EK60 B3-16.0-LV batteries cannot be connected to those that do not support third-party inverters. You can identify the latest EK60 B3-16.0-LV batteries by a NOTICE label that specifies inverter compatibility.

For parallel connection, use a busbar to connect the battery power cables to an inverter according to one of the following wiring methods.

Wiring Method 1



Local terminal	Connected terminal
Battery 1 - **INV**	Inverter - CAN
Battery 1 - **LINK IN**	RJ45 plug
Battery 1 - **LINK OUT**	Battery 2 - **LINK IN**
Battery 2 - **LINK OUT**	Battery 3 - **LINK IN**
Battery 3 - **LINK OUT**	Battery 4 - **LINK IN**
Battery 4 - **LINK OUT**	Battery 5 - **LINK IN**

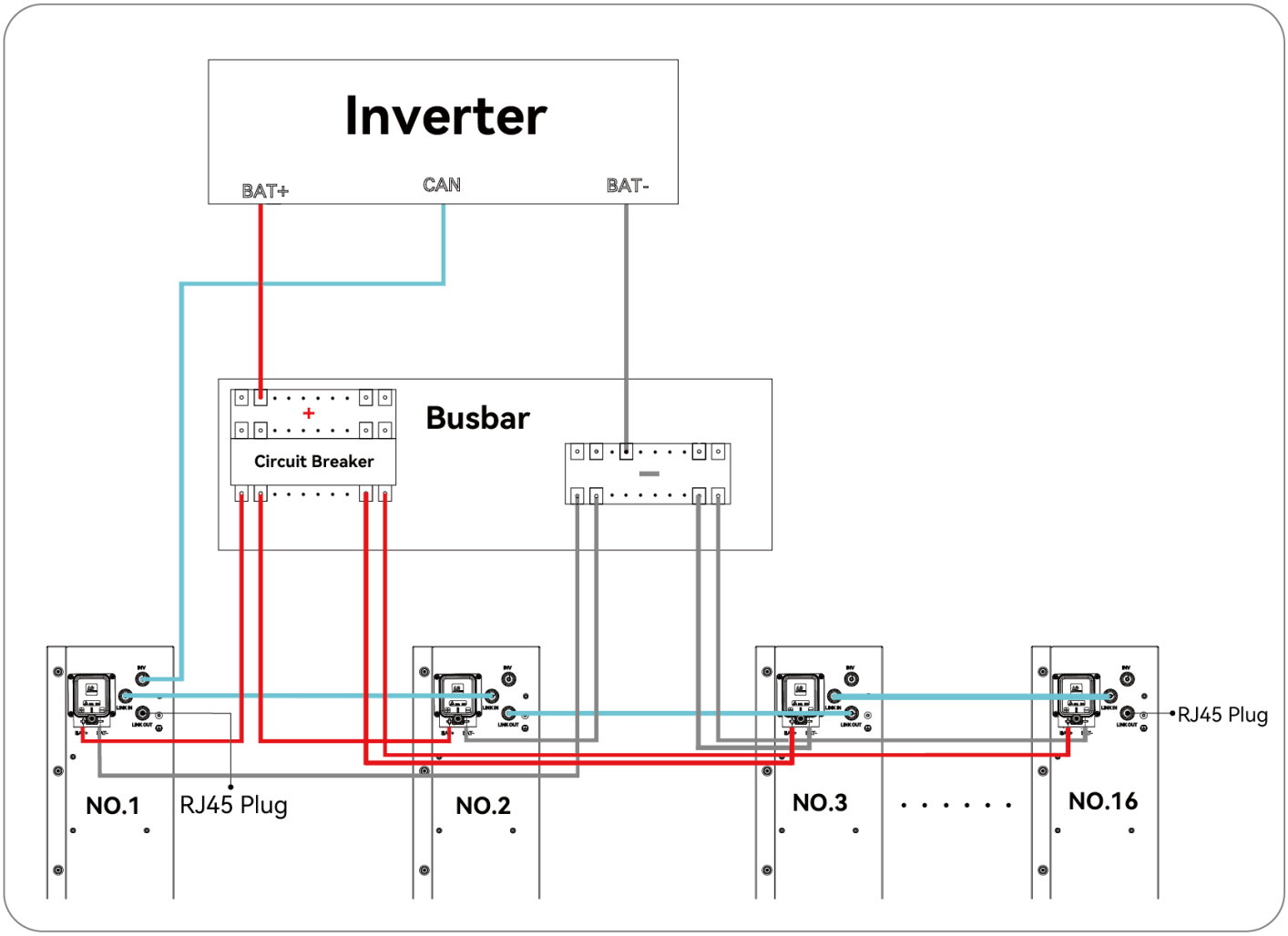
Local terminal	Connected terminal
Battery n - **LINK OUT**	Battery (n+1) - **LINK IN**
...	...
Battery 15 - **LINK OUT**	Battery 16 - **LINK IN**
Battery 16 - **LINK OUT**	RJ45 plug

Table 5.1. Communication Terminal Wiring Diagram 1

Note:

For parallel connection, insert an RJ45 plug into the **LINK IN** port on the first battery pack and another into the **LINK OUT** port on the last battery pack to prevent communication disruption.

Wiring Method 2



Local terminal	Connected terminal
Battery 1 - **INV**	Inverter - CAN
Battery 1 - **LINK OUT**	RJ45 plug
Battery 1 - **LINK IN**	Battery 2 - **LINK IN**
Battery 2 - **LINK OUT**	Battery 3 - **LINK OUT**
Battery 3 - **LINK IN**	Battery 4 - **LINK IN**
Battery 4 - **LINK OUT**	Battery 5 - **LINK OUT**
...	...
Battery 15 - **LINK IN**	Battery 16 - **LINK IN**
Battery 16 - **LINK OUT**	RJ45 plug

Table 5.2. Communication Terminal Wiring Diagram 2

Note:

For parallel connection, insert an RJ45 plug into the **LINK OUT** port on the first battery pack and that on the last battery pack to prevent communication disruption.

6. Startup and shutdown

6.1. Startup and shutdown

6.1.1. Startup

⚠ WARNING

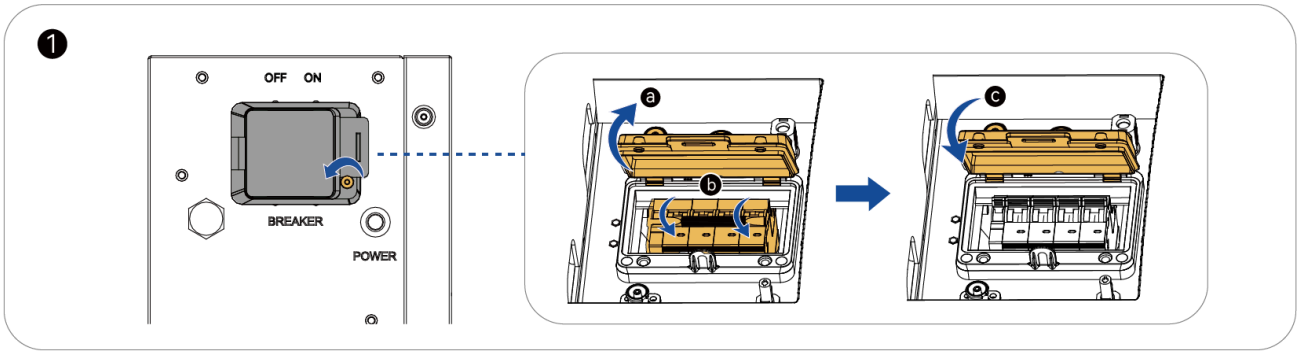
Risk of electric shock, fire, explosion and irreversible equipment damage

Improper installation or wiring can cause short circuits, overheating, fire or explosion.

- Before starting up the system, ensure all installation operations are performed in accordance with the procedures in the manual.
- Ensure all connections are clean, tight, and torque to the specification.
- Double-check positive (+) and negative (-) terminals to ensure correct connections. Reverse polarity can permanently damage equipment.
- Ensure proper grounding connection and cable specification.

Procedure

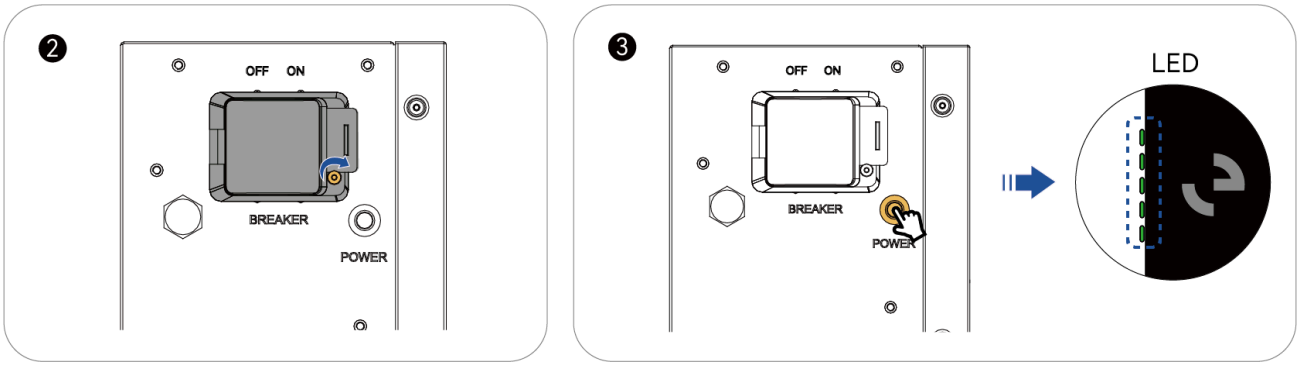
1. Unscrew the circuit breaker cover on the left side of the battery. Open the cover and flip the switch a full 90 degrees from **OFF** to **ON** to turn on the circuit breaker.



⚠ CAUTION

Always turn on the circuit breaker before pressing the power button. If the power button is pressed before turning on the circuit breaker, the battery's output protection may be triggered, preventing the connected inverter from operating normally.

2. Close the cover and tighten the screw.
3. Press the power button and hold for three seconds, until the LED indicator is on.



6.1.2. Shutdown

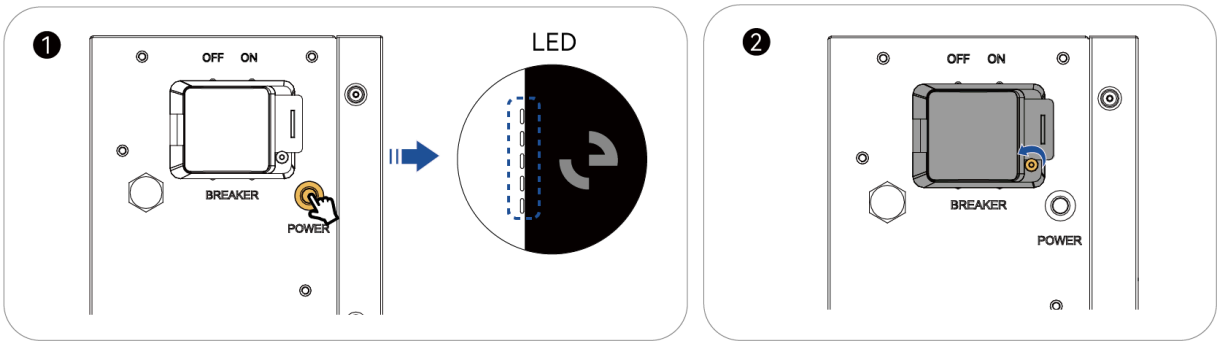
WARNING

Risk of electric shock

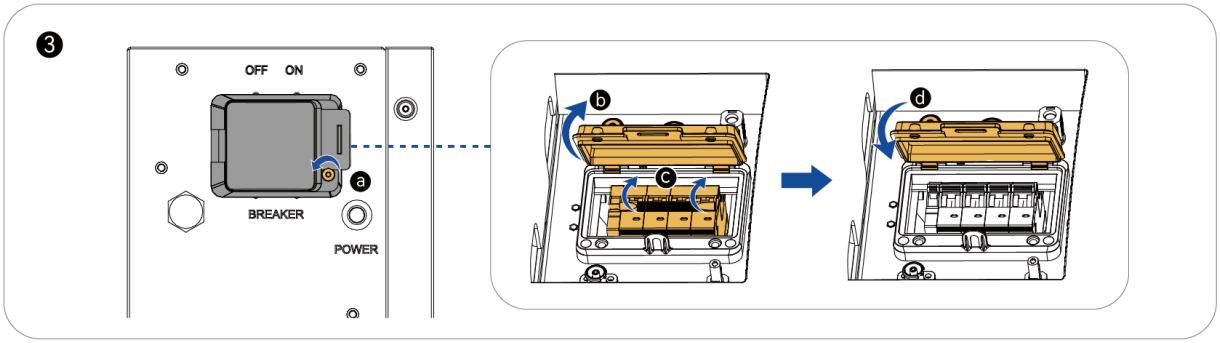
Before conducting any maintenance work, wait for at least 15 minutes after shutdown.

Procedure

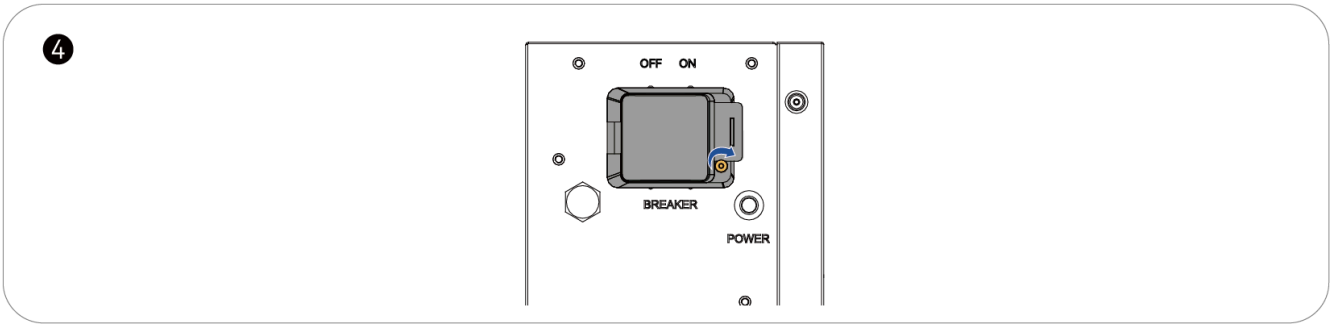
1. Press the power button and hold for five seconds, until the LED indicator is off.
2. Unscrew the circuit breaker cover.



3. Turn off the circuit breaker.



4. Tighten the screw on the circuit breaker cover.



7. Commissioning on App

7.1. About elekeeper

The SAJ elekeeper Application Version 5.0 is an easy-to-use, AI-powered energy management platform designed for homeowners and businesses with full ecosystem autonomous AI control. It gives the Owner full control over their energy - from generation and storage to consumption and selling - through a single App that works on phones, tablets, and computers. The platform provides the following AI-powered modules:

- **AI Care**: provides six-dimensional system diagnosis and 24/7 system protection.
- **AI Saving**: provides AI-powered working strategy adaptation for various scenarios to maximize user revenue.
- **AI Keeper**: provides intelligent functions including full voice autonomous control, user intent recognition, , electricity data analysis, and autonomous task planning.

7.2. Download the elekeeper App

Search for "elekeeper" in the App store and download the App.

Alternatively, scan the below QR code to download the App.

7.3. Sign up at the elekeeper App

The end user, installer, or distributor can follow this procedure to sign up at the elekeeper App. The installer can also follow this procedure to create an account for the end user.

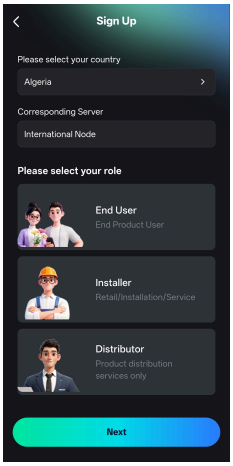
Note: Recommend activating the Location Services on the phone for optimum utilization of the functions.

Procedure

1. Open the App and tap **Sign Up** on the login page.



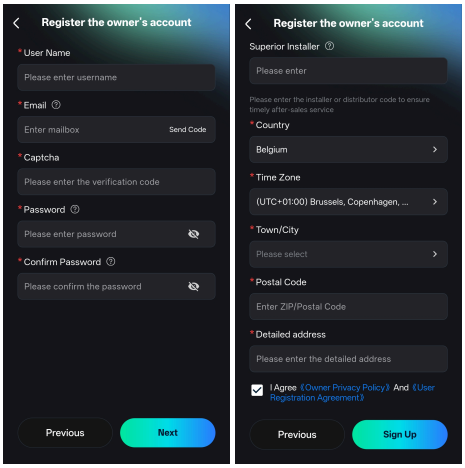
2. Select the country of the installation site and the user role.



Parameter	Description
Corresponding Server	The server is set automatically depending on the selected country.
Please select your role	• **End User**: The owner of the power plant. Select this option when the installer is signing up for the end user. • **Installer**: The installation and retail service providers. • **Distributor**: The distribution service provider.

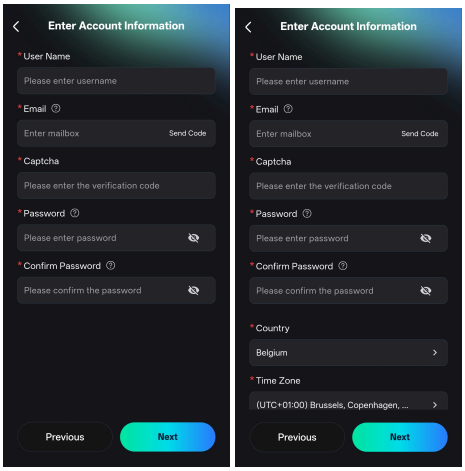
Table 7.1. Signup parameters

3. For the **End User** role, fill in the user information accordingly.

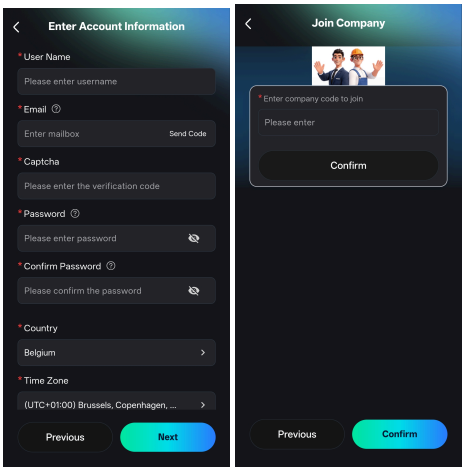


4. For the **Installer** role, either create a company or join an existing company to provide the information accordingly.

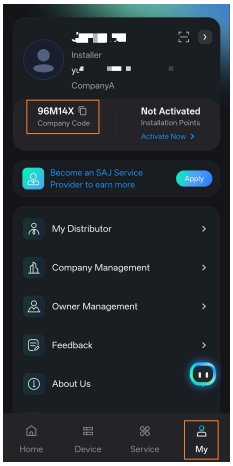
   To create a company:



To join a company:



To check an existing user's company code, open page **My**:

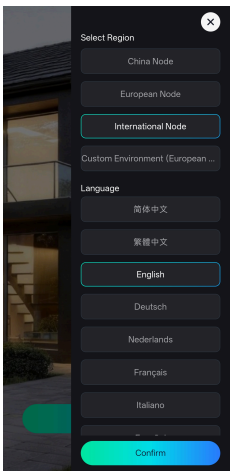


5. For the **Distributor** role, provide similar information as the **Installer** role.

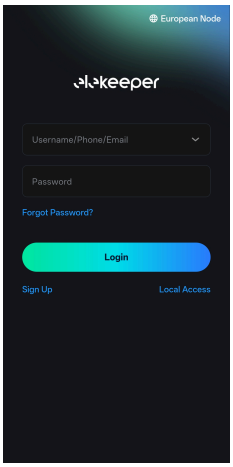
7.4. Log in to the elekeeper App

Procedure

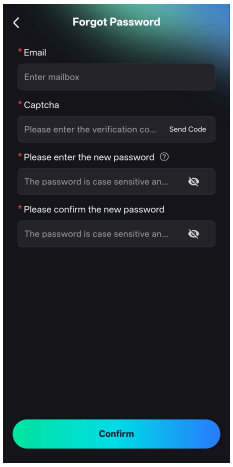
1. Open the App and tap the globe icon on the top right corner.
2. Select the **Region** and **Language** depending on the installation site of the system.



3. Log in with the username, phone number, or email.



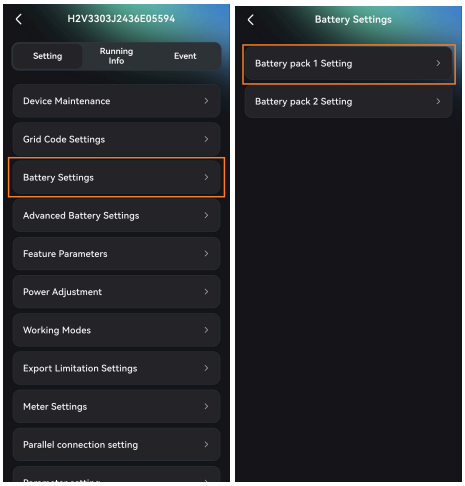
4. (Optional) If you forgot your password, reset your password with email verification.



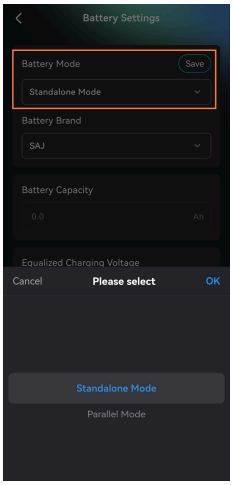
7.5. Battery settings

Note: The detailed operations on the App might vary, depending on the app version and inverter model you are using.

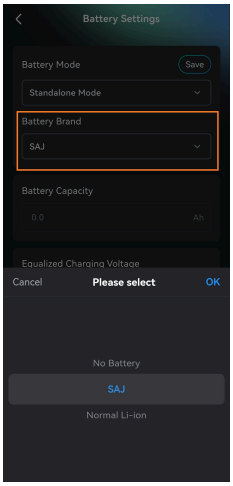
1. On the homepage, tap **Battery Settings** > **Battery Pack 1/2 Setting** to set the parameters for each battery pack.



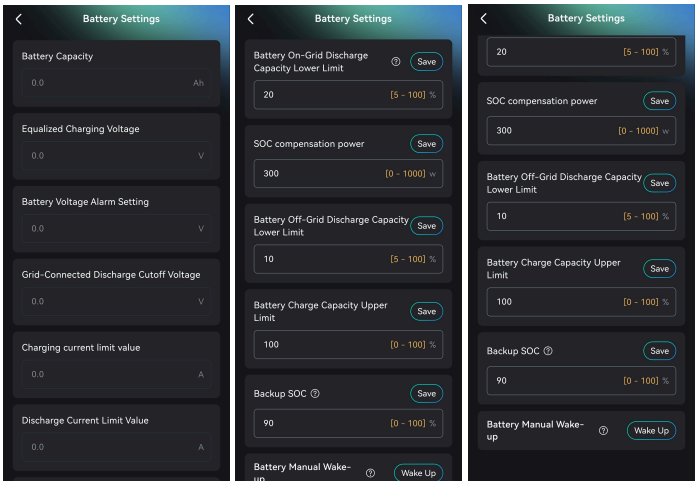
2. Select the battery connection mode.



3. Select the battery brand.



4. Set the following parameters as needed.



8. System maintenance

8.1. Routine maintenance

To ensure the system lifespan, perform the suggested routine maintenance operations. To purchase the routine maintenance service, contact the installer, distributor, or after-sales.

⚠ WARNING

Danger of electric shock

Turn off the system before cleaning, inspecting cables or maintaining components. Do not open any covers for 5 minutes after disconnecting all power sources.

Check item	Check method	Maintenance interval
System cleanliness	Check periodically whether the heat sinks are blocked or dirty.	Once every 6 to 12 months
Cleanness of air intake and exhaust vents	Check periodically whether there is dust or foreign objects at the air intake and exhaust vents. Detailed operations are as follows: Power off the system and remove dust and foreign objects.	Once every 6 to 12 months (or once every 3 to 6 months based on the actual dust conditions in the environment)
Fan	Check whether the fan generates abnormal noise during operation. Detailed operations are as follows: Remove foreign objects from the fan. If the abnormal noise persists, replace the fan.	Once every 6 to 12 months
System running status	• Check whether the equipment is damaged or deformed. • Check whether the equipment generates abnormal sound during operation. • Check whether all equipment parameters are correctly set during operation.	Once every 6 months
Electrical connection	• Check whether cables are disconnected or loose. • Check whether cables are damaged, especially whether the cable sheath that contacts a metal surface is damaged.	6 months after the first commissioning and once every 6 to 12 months after first maintenance
Grounding reliability	Check whether the PE cable is securely connected.	6 months after the first commissioning and once every 6 to 12 months after first maintenance
Sealing	Check whether all terminals and ports are properly sealed.	Once a year

8.2. Troubleshooting

For any errors reported below, try the suggested solutions or contact the after-sales for support.

⚠ WARNING

The troubleshooting operations must be performed by authorized technicians only.

Error code	Error message	Possible cause	Suggested solution
97	BMS internal communication error	1. Communication error between battery control unit and battery module. 2. Did not install RJ45 plug, therefore battery control unit counted the number of battery modules connected mistakenly.	1. Check if communication cable is connected properly. 2. Check if RJ45 plug is installed.
98	Battery module sequence error	1. Cable connection is wrong. 2. Did not install RJ45 plug. 3. Communication cable connection is wrong.	1. Connect the cable correctly. 2. Check if the RJ45 plug is installed. 3. Check if the communication cable is working.
99	Discharge overcurrent protection	Discharging current exceeds the set limit.	Wait until the error is clear or restart.
100	Charge overcurrent protection	Charging current exceeds the set limit.	Wait until the error is clear or restart.
101	Total voltage low protection	Total voltage is lower than the set limit.	Force charging the battery.
102	Total voltage high protection	Total voltage is higher than the set limit.	Wait until the error is clear or restart.
103	Single battery module voltage low protection	Single battery module voltage is lower than the set limit.	Force charging the battery.
104	Single battery module voltage high protection	Single battery module voltage is higher than the set limit.	Wait until the error is clear or restart.
105	BMS hardware error	1. Single battery module voltage sensor error. 2. Temperature sensor error. 3. Current sensor error.	1. Check if battery temperature and voltage sensor cable is in poor contact. 2. Check if current sensor cable is in poor contact. 3. Replace BMS.
106	Charging temperature low protection	The battery temperature is lower than the minimum battery protection temperature.	Wait until battery temperature increases and the error is clear.

Error code	Error message	Possible cause	Suggested solution
107	Charging temperature high protection	The battery temperature is higher than the maximum battery protection temperature.	Wait until battery temperature decreases and the error is clear.
108	Discharging temperature low protection	The battery temperature is lower than the minimum battery protection temperature, causing relay disconnection and then charging termination.	Wait until battery temperature increases and the error is clear.
109	Discharging temperature high protection	The battery temperature is higher than the maximum battery protection temperature.	Wait until battery temperature decreases and the error is clear.
110	Relay error	1. Cathode or anode relay is adhesive. 2. Cathode or anode relay is unable to close.	Replace relay.
111	Pre-charge error	1. Pre-charge relay damaged. 2. Pre-charge resistor open circuit. 3. BMS damaged.	1. Replace pre-charge relay. 2. Replace pre-charge resistor. 3. Replace BMS.
112	Insulation error	Battery module has electricity leakage.	Contact battery supplier.
113	BMS supplier incompatibility	BMS of battery module and battery control unit are incompatible.	Check if the model of battery module and battery control unit are compatible.
114	Battery cell supplier incompatibility	Supplier of battery module and battery cell are incompatible.	Check if the model of battery module is correct.
115	Battery cell incompatibility	Battery cells are incompatible.	Check if the model of battery module is correct.
116	Battery pack models or grades are inconsistent	Battery pack models or grades are inconsistent.	Check if the model or grade of battery modules are consistent.
117	Circuit breaker is open	1. Circuit breaker is open. 2. Circuit breaker auxiliary contact error.	Replace circuit breaker.
118	Temperature difference is too wide	1. Temperature sensor error. 2. Battery life span.	Check if temperature sensor cable is in poor contact.
119	Voltage difference is too wide (Class II)	1. Sensor cable is loose. 2. Battery life span.	1. Check if voltage sensor cable is in poor contact. 2. Replace BMS.
120	Voltage difference is too wide (Class I)	Sensor cable is loose.	1. Check if voltage sensor cable is in poor contact. 2. Replace BMS.

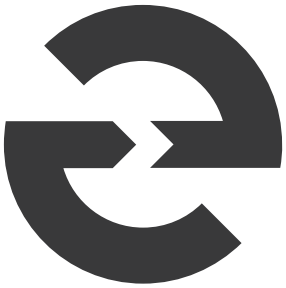
Error code	Error message	Possible cause	Suggested solution
121	BMS over temperature protect	1. Ambient temperature is high. 2. Overload.	1. Check if ambient temperature is high. 2. Check if overloaded.
122	Short circuit protect	P+ and P- short circuit.	Check if the cable connected correctly.
123	Total Voltage match failed	Connection is wrong.	Contact technical support to locate the fault.
124	The system is locked	System is faulty.	Contact technical support to locate the fault.
125	FUSE error protection	Fuse is damaged.	Contact technical support to locate the fault.
126	Voltage on charging port is high protection	Inverter output voltage is high.	Contact technical support to locate the fault.
129	Heating-film detect fault	No heating film is detected by the BMS.	Contact technical support to locate the fault.
130	DCDC-BMS comm lost	The communication between the battery module DCDC and the BMS is abnormal.	Contact technical support to locate the fault.
131	Auxiliary supply voltage abnormal fault	The circuit of the auxiliary supply is not functioning properly.	Contact technical support to locate the fault.
132	Heat sink high temperature fault	The temperature of the heat sink in the DCDC exceeds the upper threshold.	Contact technical support to locate the fault.
133	PCB high temperature fault	The temperature of the PCB in the DCDC exceeds the upper threshold.	Contact technical support to locate the fault.
134	SOH low fault	The battery has poor state of health (SOH).	Contact technical support to locate the fault.
135	Heating-film short-circuit fault	The battery module's heating film short-circuited.	Contact technical support to locate the fault.
136	Heating-film open-circuit fault	The circuit of the battery module's heating film is open.	Contact technical support to locate the fault.
137	Heating-film over-current fault	The resistance of the battery module's heating film is abnormal.	Contact technical support to locate the fault.
138	Aerosol abnormal fault	The aerosol density of the battery module's heating film is abnormal.	Contact technical support to locate the fault.
139	Button stuck fault	The button sends abnormal signals or the button is stuck.	Contact technical support to locate the fault.
140	Fan fault	The fan of the DCDC is not functioning properly.	Contact technical support to locate the fault.
141	Inverter-BMS comm lost	The communication between the BMS and the inverter is abnormal.	Contact technical support to locate the fault.

9. Product specification

Model	EK60 B3-16.0-LV
Performance Specification	
Battery Type	LiFePO4
Cell Capacity (Ah)	314
Cycle Life [1]	≥8000
Depth of Discharge	95%
Nominal Capacity (kWh)	16
Rated Capacity (kWh) [2]	15.2
Rated Voltage (V)	51.2
Voltage Range (V)	44.8—57.6
Rated Charging Current (A)	157
Max. Charging Current (A)	157
Rated Discharging Current (A)	157
Max. Discharging Current (A)	200
Peak Discharging Current (A)	300 (10 s)
Max. Charging Power (kW)	8
Max. Discharging Power (kW)	10
General Data	
Battery Pack Weight (kg)	110
Weight with Packaging (kg)	121
Dimensions (H/W/D) (mm)	796 / 501 / 224
Storage Temperature Range	-10 °C to +50°C
Charging Temperature Range	0°C to +55°C
Discharging Temperature Range	-20°C to +55°C
Relative Humidity Range	5%-95%
Max. Operating Altitude (m)	< 2000
Cooling Method	Natural convection
Ingress Protection Rating	IP65
Installation Environment	Indoor & Outdoor
Installation Method	Floor-standing / Wall-mounting
Max. Parallel Quantity	16 units (256 kWh)
Compatible Inverter	SAJ inverters, third-party low-voltage inverters that support the Pylontech 2.0 protocol
Communication	CAN
Warranty (year)	5/10
Protection	
Over-voltage and Under-voltage Protection	Integrated
Over-current Protection	Integrated
Over-temperature and Under-temperature Protection	Integrated
DC Breaker	Integrated
Standard Compliance	
Standard	IEC 62619, IEC 62040, IEC 61000, UN38.3

[1] Test conditions: 25±2℃, 0.2C charge and discharge rate, 90% depth of discharge.

[2] Test conditions: 25℃, 0.2C charge and discharge rate, 95% depth of discharge, at the beginning of life.



SAJ | elekeeper

GUANGZHOU SANJING ELECTRIC CO., LTD
Tel: (86) 20 66608588 **Fax:** (86) 20 66608589 **Web:** www.saj-electric.com
Add: No.9, Lizhishan Road, Science City, Guangzhou High-tech Zone, Guangdong, P.R.China

©2025-2026 Guangzhou Sanjing Electric Co., Ltd. All rights reserved.