# EK60 series

## Low-voltage battery

EK60 B3-5.0-LV
EK60 B3-5.0-LV-Plus
EK60 B3-5.0-LV-Pro

# Quick Installation Guide



Version 1.0

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# 1. About this document

This quick installation guide provides the installation and electrical connection instructions of the SAJ product.

Scan the following QR code to obtain the latest eManuals:

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**Note:**

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

**NOTICE**

- This document may be updated without notice and is for guidance only. No warranties are implied.
- Read the product *User Manual* before installation for product details and safety instructions.
- Only qualified electrical professionals familiar with grid-connected PV systems and local standards may perform installation or servicing.
- Check the *Packing List* before installation; report any missing or damaged items to your dealer.
- Damage from improper installation or operation not following this document or the *User Manual* is not covered by warranty.

**WARNING**

**Risk of High Voltage and Electric Shock**

- This device is directly connected to public grid.
- Before operation, ensure the inverter is completely disconnected from all the power sources.
- During operation, wear appropriate personal protective equipment and use insulated tools.
- Failure to follow these instructions will result in serious injury or death.

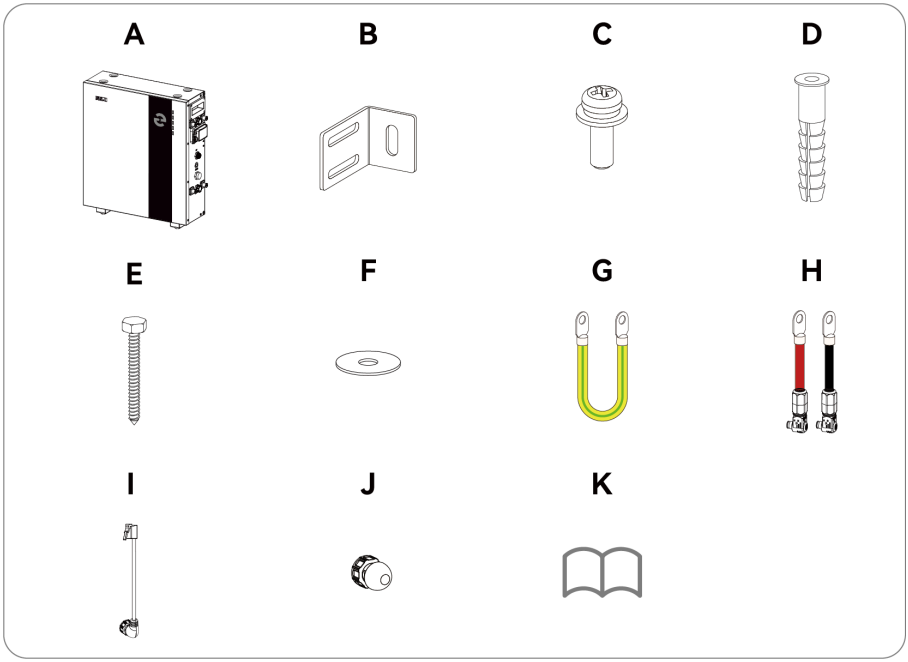
## Safety symbols

| Symbol | Description | Symbol | Description |
|---|---|---|---|
|  | **Danger:** Electrical shock hazard |  | **Caution:** No disposal in residential waste |
|  | **Danger:** Hot surface<br>Do not touch metal plate housing during operating. |  | **CE Mark** |
|  | **Danger:** Do not open the cabinet door until 5 minutes after disconnecting all power sources. |  | **RoHS compliant mark** |
|  | **Warning:** No open flames |  | **Caution:** Check the user manual before service |

# 2. Packing list

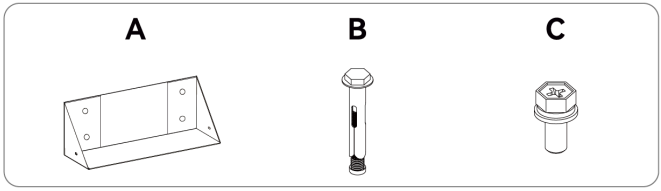
## Single battery pack

- For floor-standing installation




| Number | Quantity | Designation |
|---|---|---|
| A | 1 | Battery pack |
| B | 2 | Locking bracket |
| C | 4 | M4×12 screw for locking bracket |
| D | 2 | M6×80 expansion tube for locking bracket |
| E | 2 | M6×80 screw for locking bracket |
| F | 2 | M6×80 flat washer for locking bracket |
| G | 1 | Grounding cable with cable lugs |
| H | 1 | Positive and negative power cables |
| I | 1 | Communication cable |
| J | 1 | Communication port RJ45 plug |
| K | 1 | Documentation |

- Additional accessories for wall-mounting installation



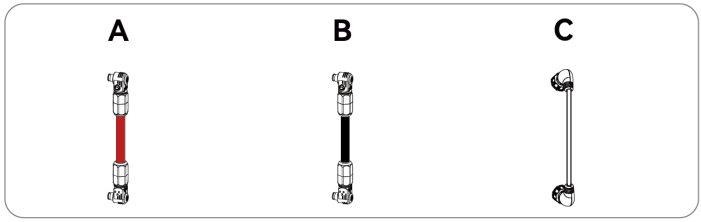

| Number | Quantity | Designation |
|---|---|---|
| A | 1 | Wall-mounting bracket |
| B | 4 | M12×80 expansion bolt for wall-mounting bracket |
| C | 2 | M4×12 screw for wall-mounting bracket |

## Multiple battery packs

Additional accessories are provided for parallel connection of multiple battery packs.

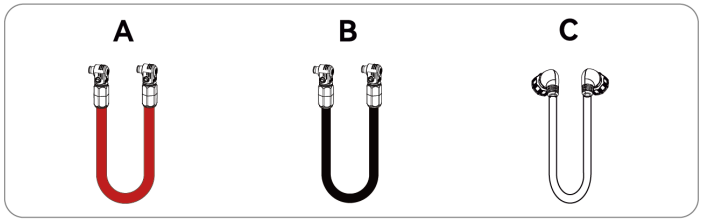
**Note:** Actual quantities shall be subject to delivered goods.

- For parallel configuration (≤3 batteries)




| Number | Designation |
|---|---|
| A | Positive power cable for parallel connection of battery packs within one stack |
| B | Negative power cable for parallel connection of battery packs within one stack |
| C | Communication cable for parallel connection of battery packs within one stack |

- Additional accessories for parallel configuration (≥3 batteries)




| Number | Designation |
|---|---|
| A | 1.5 m positive power cable for parallel connection between battery stacks |
| B | 1.5 m negative power cable for parallel connection between battery stacks |
| C | 1.5 m communication cable for parallel connection between battery stacks |

# 3. Transportation and storage

## 3.1. 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.

## 3.2. 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

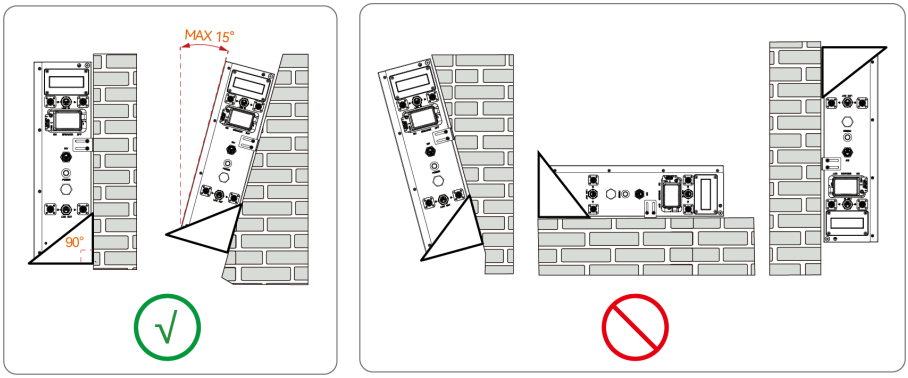
## 4.1. Installation environment requirements

- 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.

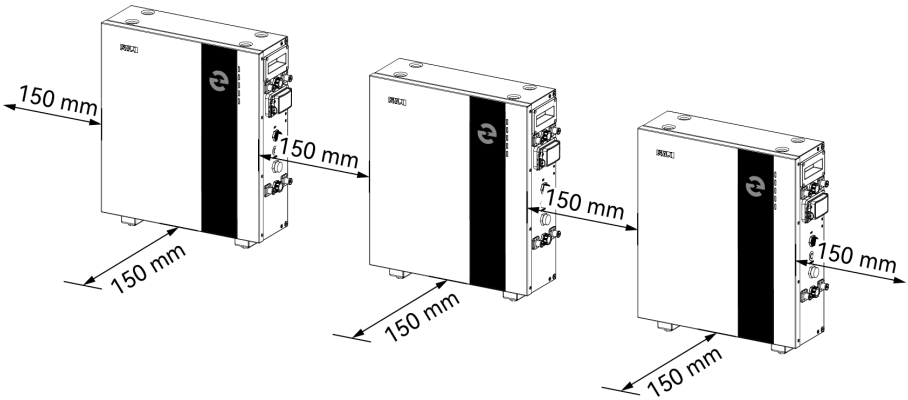


## 4.2. Installation location requirements

- 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.



## 4.3. Installation tools

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

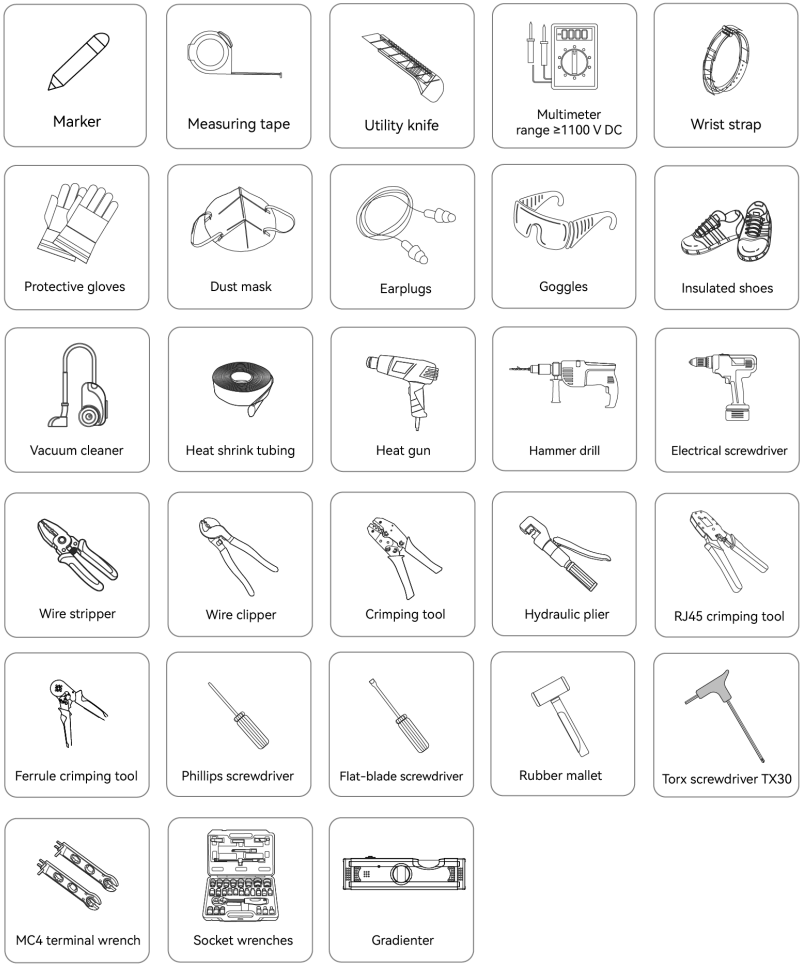
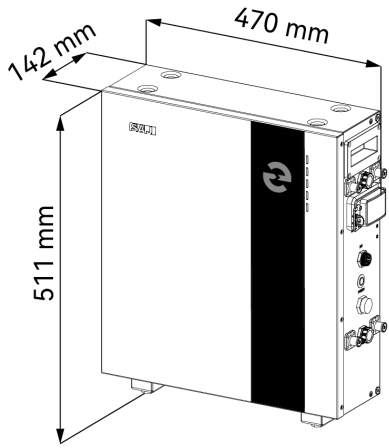



Figure 4.1. Suggested installation tools

## 4.4. Dimensions

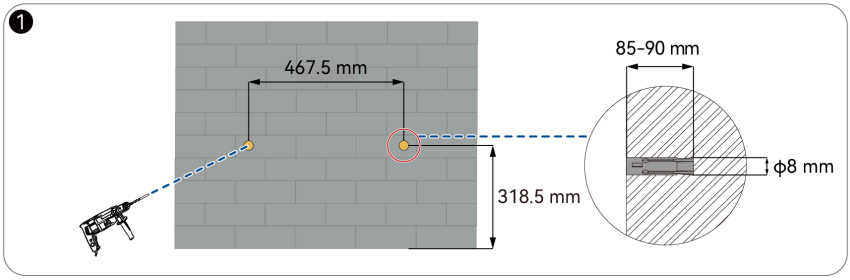
Dimensions: (H*W*D): 511*470*142 mm



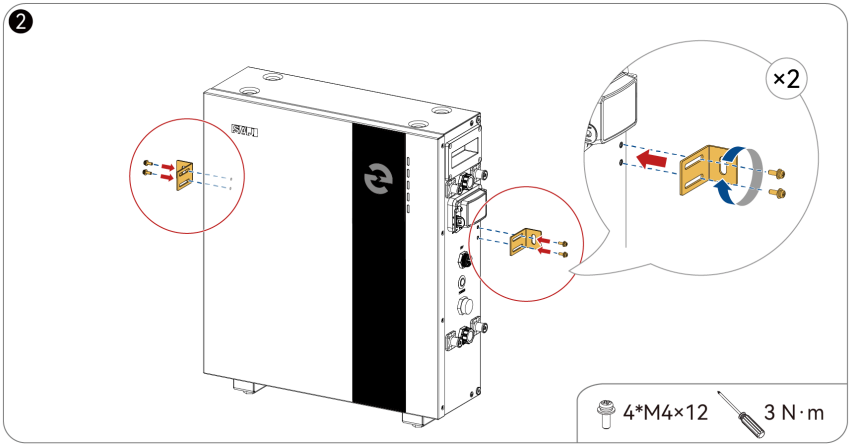
## 4.5. Install battery on the floor

**Procedure**

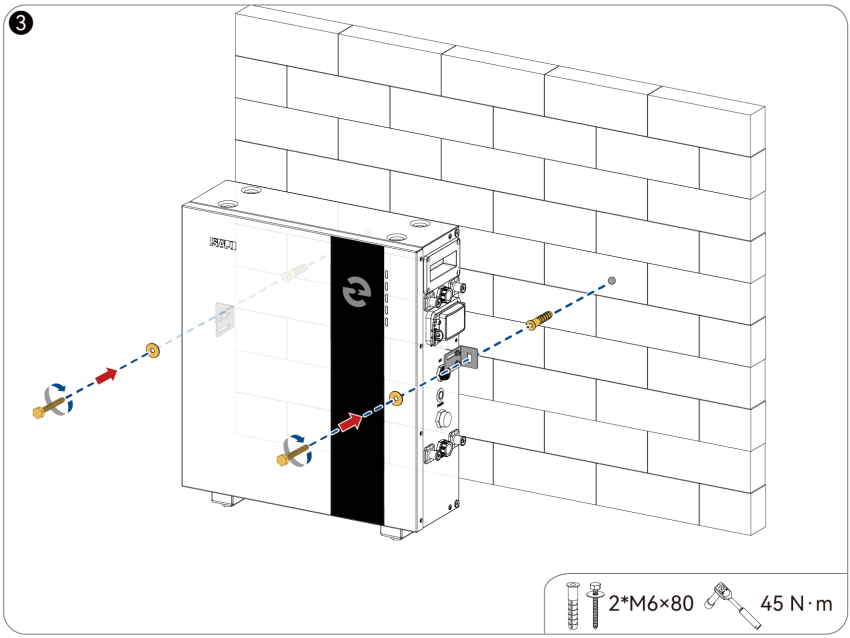
1. Mark and drill two holes on the wall.




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



3. Move the battery to align both locking bracket holes with the drilled holes. Insert two expansion screw sets into the holes and tighten the screws firmly with a socket wrench.

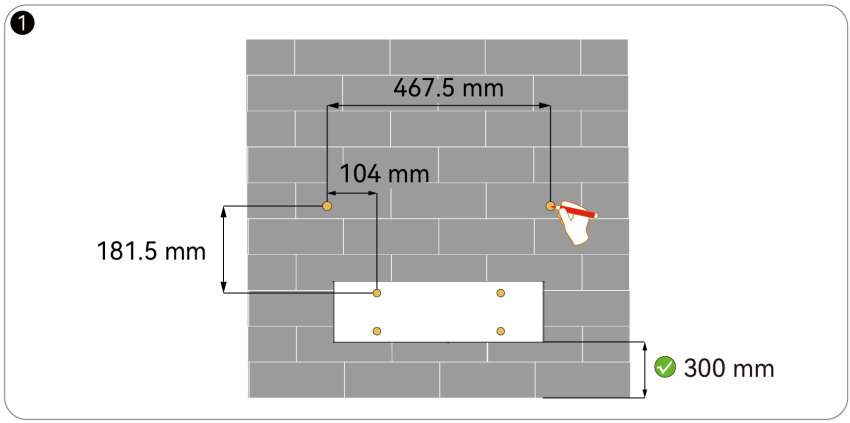


## 4.6. Install battery on the wall

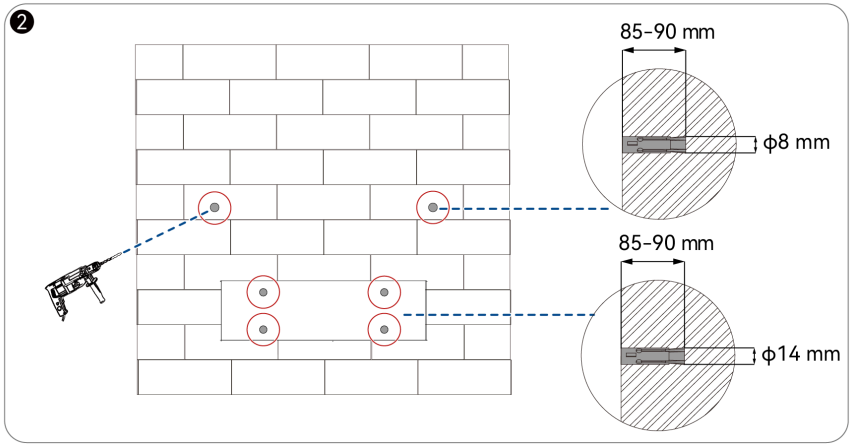
**Procedure**

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 wall-mounting bracket. Then, mark another two holes for the locking brackets.

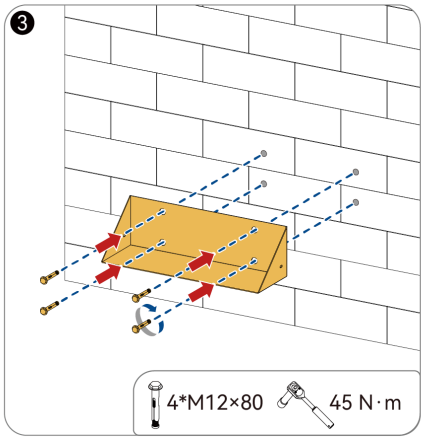
> **CAUTION**
>
> The recommended height for the mounting bracket is 300 mm.

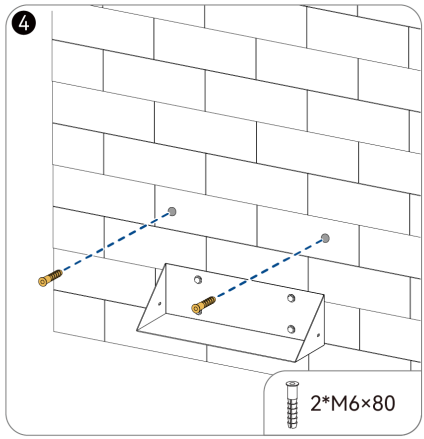



2. Drill six holes according to the marks.

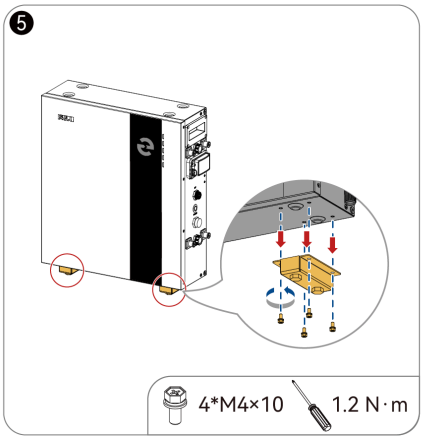


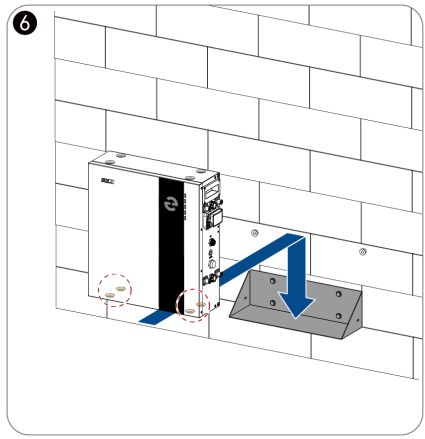
3. Align the wall-mounting bracket with the four lower holes. Insert an expansion bolt into each hole. Tighten the bolts to secure the bracket against the wall.
4. Insert two expansion tubes into the two upper holes.



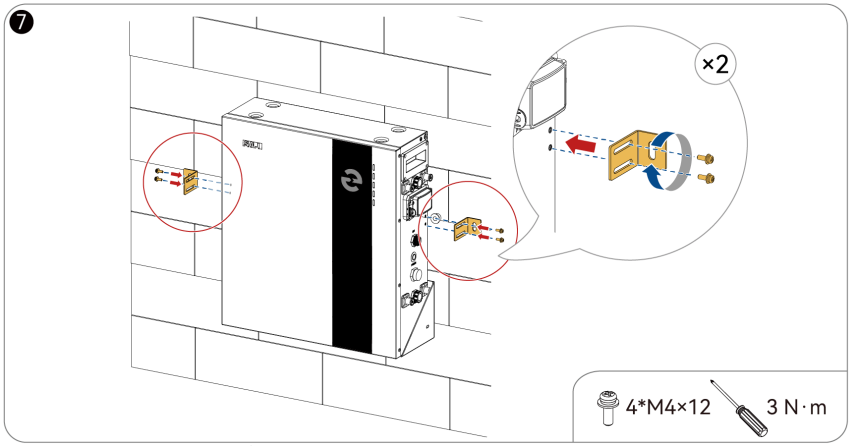




5. Loosen the four screws on the base and remove the base.
6. Place the battery onto the wall-mounting bracket.

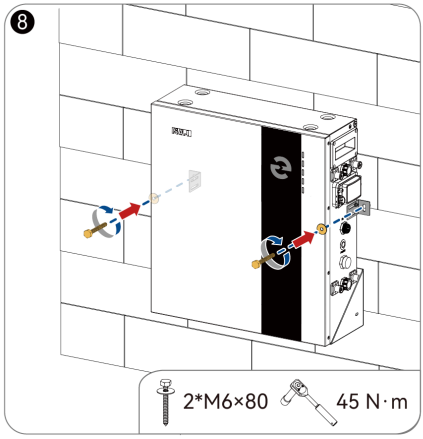


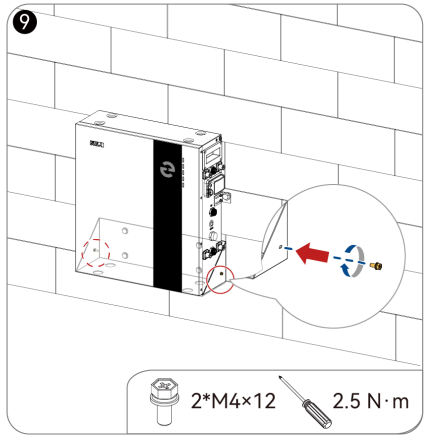



7. Secure a locking bracket to each side of the battery.



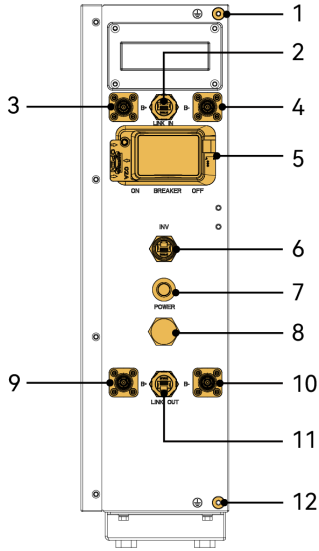

8. Align both locking bracket holes with the drilled holes. Insert two screws into the holes and tighten them firmly with a socket wrench.
9. Insert a screw to each side of the bracket to secure the bracket and battery.



# 5. Electrical connection

## 5.1. Electrical terminals




| Callout | Silkscreen | Description |
|---|---|---|
| 1 |  | Protective earth (PE) port for connecting the battery to the ground. |
| 2 | **LINK IN** | Communication port for single-stack or multi-stack parallel configuration. |
| 3 | **B+** | Positive battery terminal for connecting the battery to an inverter. |
| 4 | **B-** | Negative battery terminal for connecting the battery to an inverter. |
| 5 | **BREAKER** | Circuit breaker to protect the battery from overcurrent and short-circuit conditions. |
| 6 | **INV** | Communication port for connecting the battery to an inverter. |
| 7 | **POWER** | Switch to power on/off the battery. |
| 8 |  | Explosion-proof vent valve. |
| 9 | **B+** | Positive battery terminal for connecting the battery to the next battery in parallel configuration. |

| Callout | Silkscreen | Description |
| --- | --- | --- |
| 10 | **B-** | Negative battery terminal for connecting the battery to the next battery in parallel configuration. |
| 11 | **LINK OUT** | Communication port for single-stack or multi-stack parallel configuration. |
| 12 |  | Protective earth (PE) port for connecting the battery to the next battery in parallel configuration. |

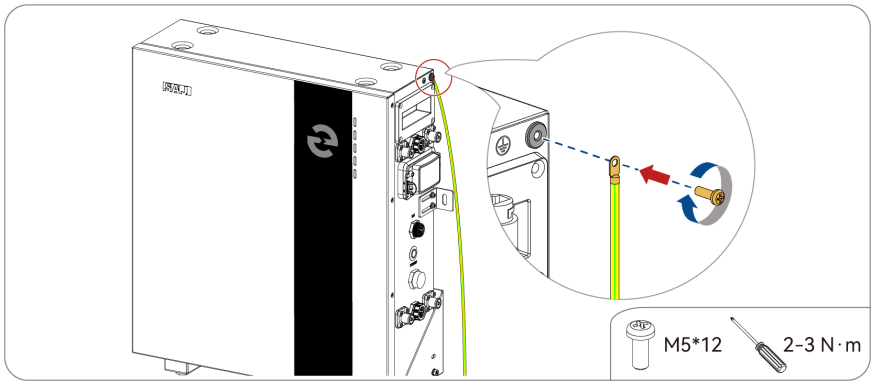
## 5.2. Grounding connection

**CAUTION**

The grounding cable must be connected before other electrical connections. The grounding cable is provided in the product package.

**Procedure**

1. Pass the screw through the cable lug and fasten it to the grounding terminal to secure the grounding cable in place.

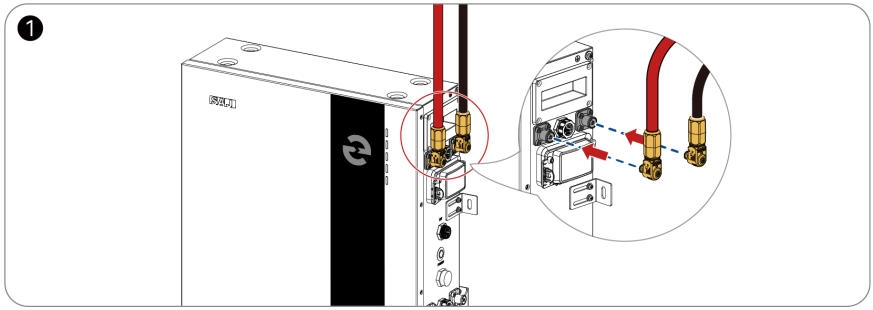



2. Connect the other end of the grounding cable to the PE busbar.

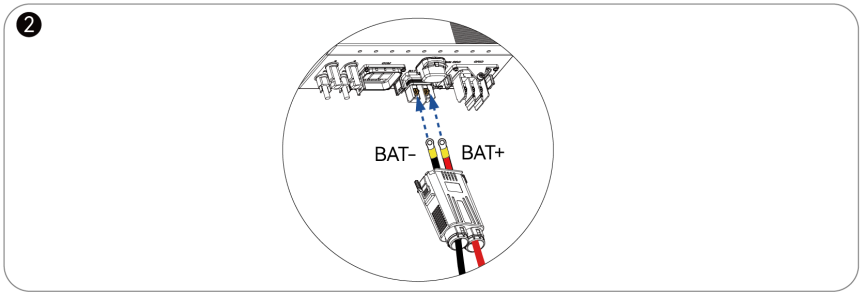
## 5.3. Power connection

**Procedure**

1. Install the positive and negative power cables to the **B+** and **B-** ports.




2. Connect the other end of the power cables to the inverter's battery terminals. The following figure takes EK60 H3-(2.9K-6K)-LS2 inverter as an example.

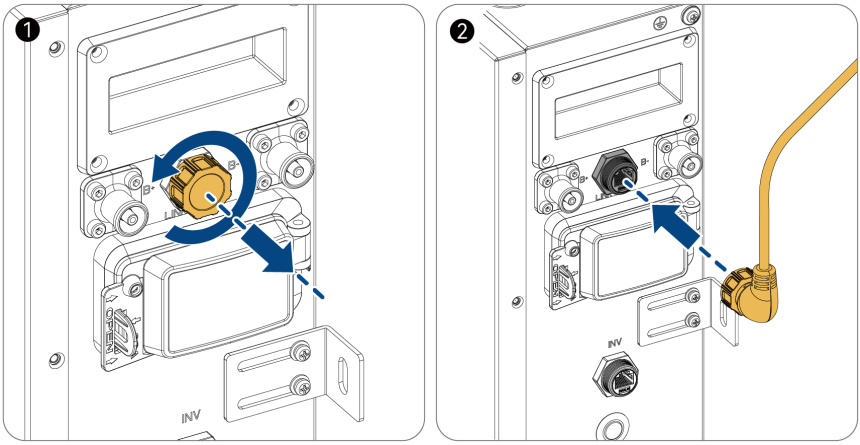


## 5.4. Communication connection

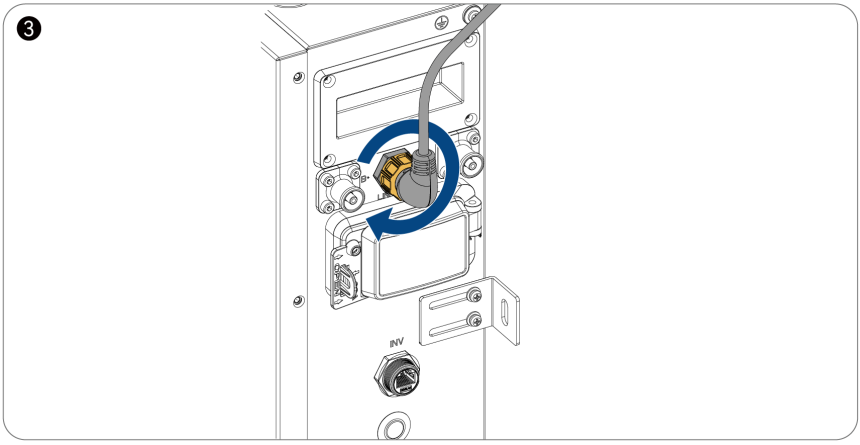
Follow the steps to assemble the communication cable and connect it to one of the communication ports. This section uses **LINK IN** as an example.

**Procedure**

1. Loosen the lock nut of the port.
2. Take the communication cable out of the package. Insert the communication cable into the port.




3. Tighten the lock nut to secure the communication cable to the port.



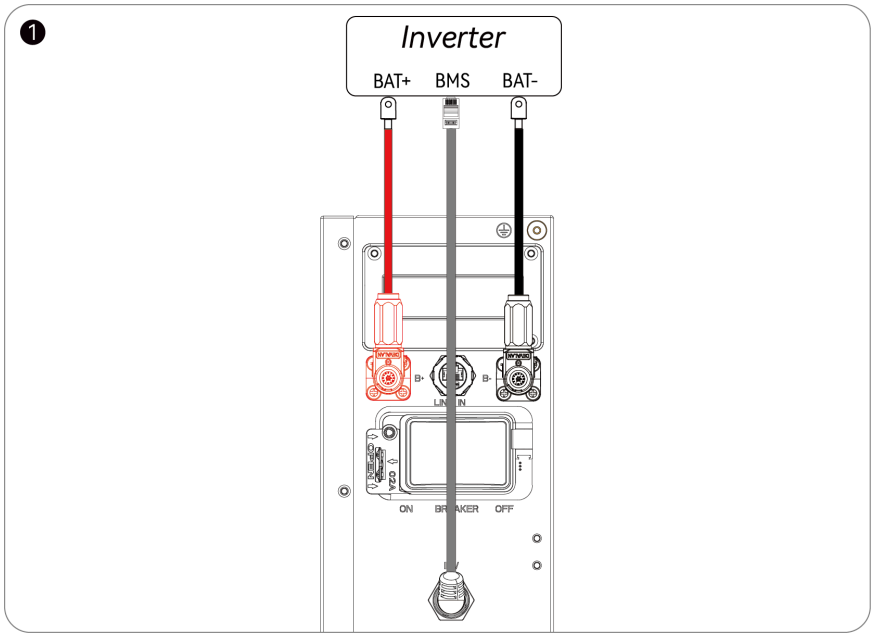
## 5.5. Connect battery to inverter

### Connect a single battery pack

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

**Note:**

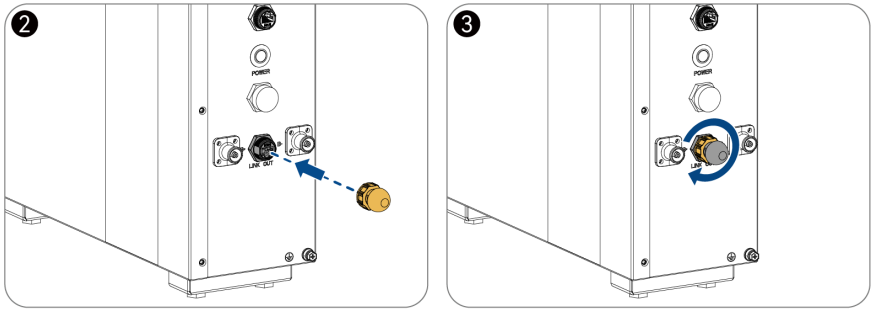
Do not intertwine the communication cable and power cables.




| Cable | Port on battery | Port on inverter |
|---|---|---|
| Positive power cable | **B+** | BAT+ |
| Negative power cable | **B-** | BAT- |
| Communication cable | **INV** | BMS |

2. Insert an RJ45 plug to the **LINK OUT** port.

3. Tighten the lock nut to secure the plug to the port.



## Connect multiple batteries in parallel

**WARNING**

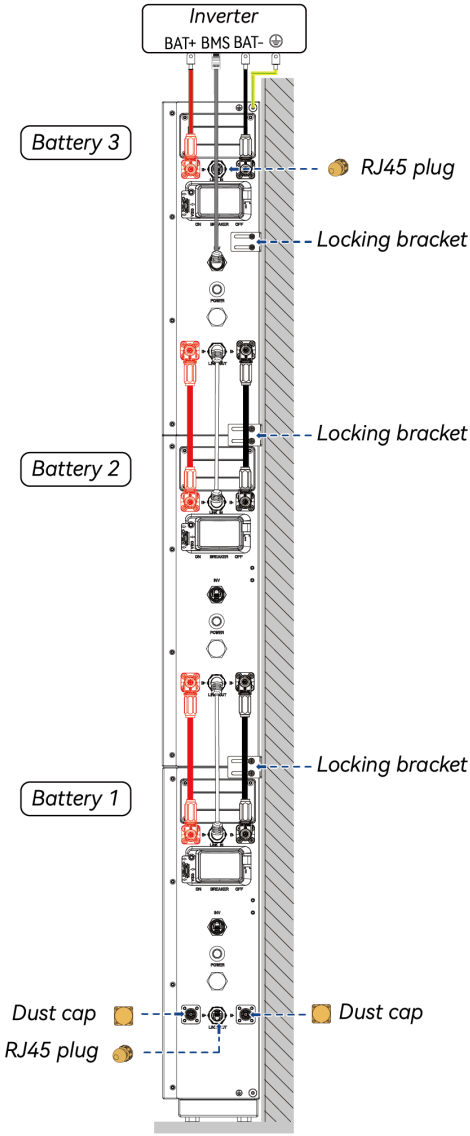
- A single cluster supports stacking a maximum of three battery packs.
- Remove the base of the upper battery pack before stacking it onto the lower battery pack. For details on removing the base, refer to ***Step. 5*** of . Install battery on the wall *(on page )*

**NOTICE**

Batteries of different series or models must not be connected in parallel. The latest EK60 B3-5.0-LV-(Plus,Pro) batteries cannot be connected to those that do not support third-party inverters. You can identify the latest EK60 B3-5.0-LV-(Plus,Pro) batteries by a NOTICE label that specifies inverter compatibility.

**Parallel connection 1: One stack of battery packs**

- Insert an RJ45 plug into the **LINK OUT** port on **Battery 1** and the **LINK IN** port on **Battery 3**.
- Insert dust caps into the lower **B+** and **B-** ports on **Battery 1**.


Inverter
BAT+ BMS BAT-
Battery 3
RJ45 plug
Locking bracket
Locking bracket
Battery 2
Locking bracket
Battery 1
Dust cap
RJ45 plug
Dust cap

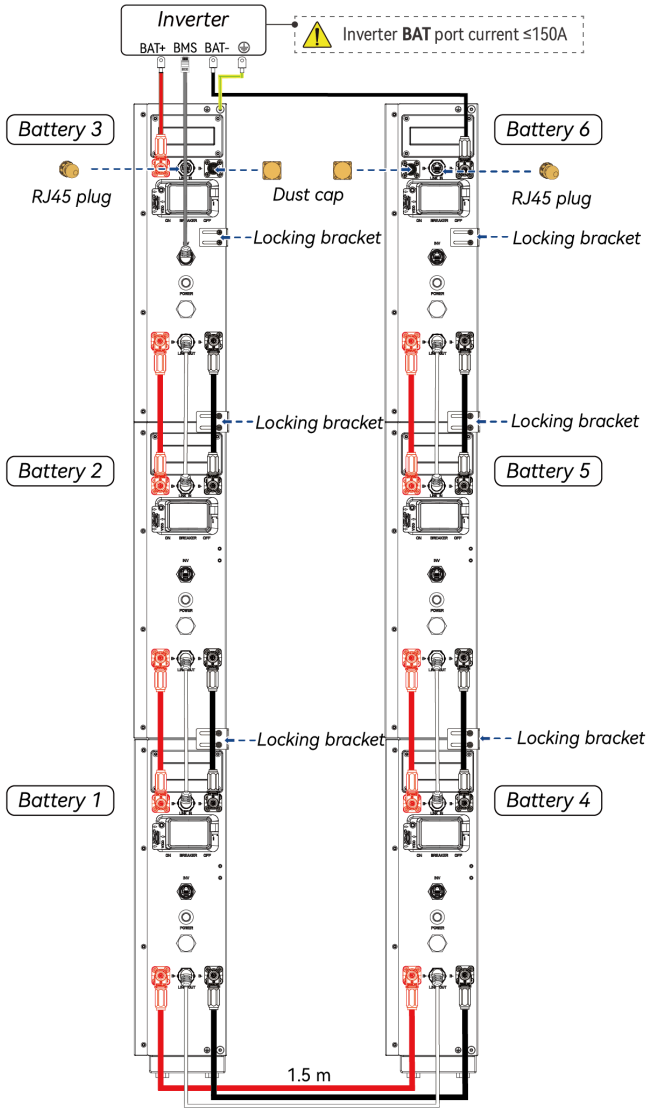
**Parallel connection 2: Two stacks of battery packs in daisy-chain connection**

**⚠ CAUTION**

**Risk of severe battery damage**

- For a daisy-chain connection, keep the inverter's DC battery input current below 150 A. Exceeding this limit can result in blown fuses, melted wiring, and battery fire hazards. If the current at the inverter's **BAT** port exceeds 150 A, use a busbar *(on page 29)* to connect the batteries to the inverter.
- The installer is responsible for ensuring compliance with this current limit. SAJ shall not be held liable for battery malfunction or damage resulting from mismatched inverter specifications.

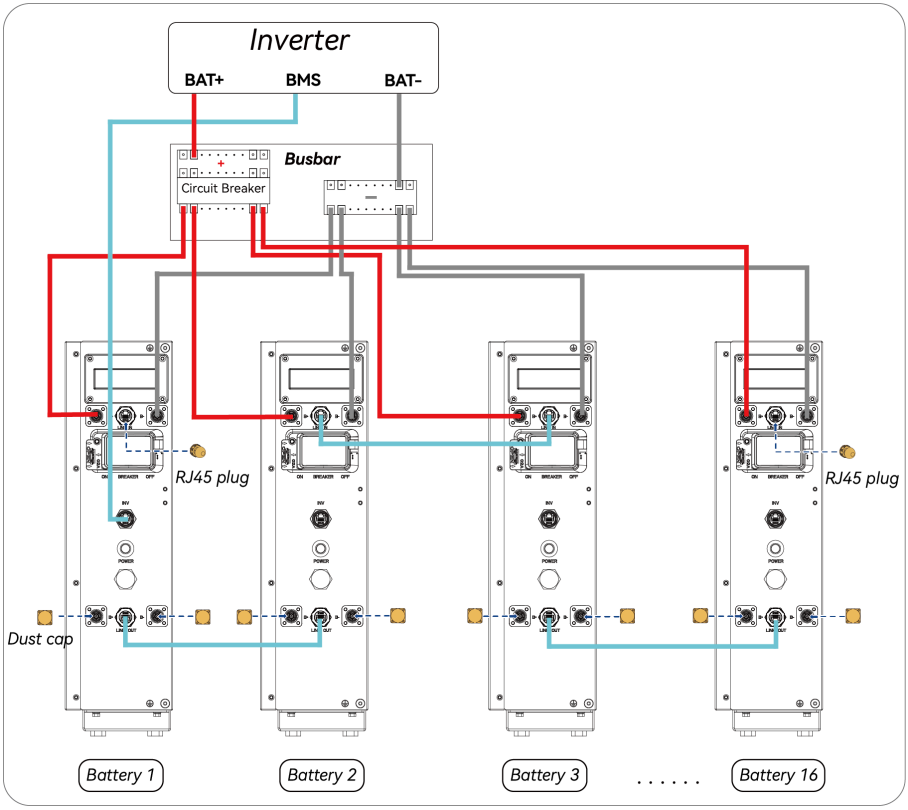
- For connection between adjacent stacks, use 1.5 m power and communication cables.
- For parallel connection with two stacks, insert dust caps into the upper **B-** port on **Battery 3** and the upper **B+** port on **Battery 6**. Insert an RJ45 plug into the **LINK IN** port on **Battery 1** and the **LINK IN** port on **Battery 6**.
- For parallel connection with more than two stacks, install dust caps and RJ45 plugs in the same configuration as specified above.


Inverter
BAT+ BMS BAT-
Inverter BAT port current ≤150A
Battery 3
Battery 6
RJ45 plug
Dust cap
RJ45 plug
Locking bracket
Locking bracket
Locking bracket
Locking bracket
Battery 2
Battery 5
Locking bracket
Locking bracket
Battery 1
Battery 4
1.5 m

**Parallel connection 3: Busbar**

For parallel connection of multiple battery packs, a busbar can be used to connect the batteries to the inverter.

- Insert a dust cap into the lower **B+** and **B-** ports on each battery pack.
- Insert an RJ45 plug into the **LINK IN** port on the first and last battery packs.



# 6. Startup

**WARNING**

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

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

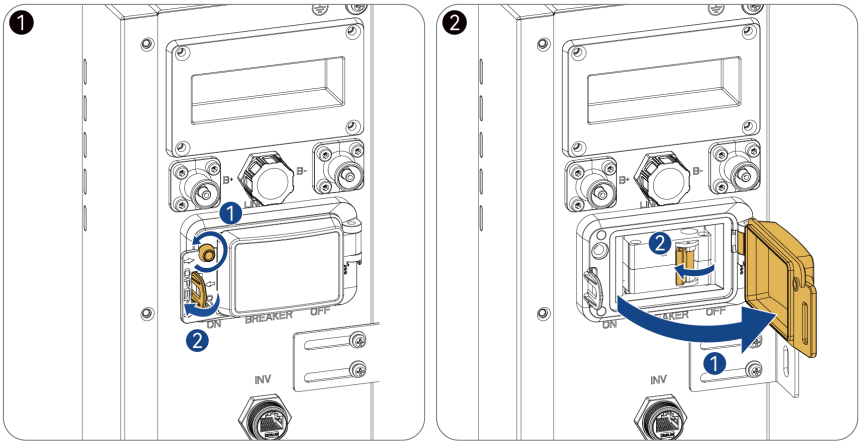
- Before starting up the system, ensure all installation operations are performed in accordance with the procedures in the manual.
- Ensure all connections are clean, tight, and torque to the specification.
- Double-check positive (+) and negative (-) terminals to ensure correct connections. Reverse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

**Procedure**

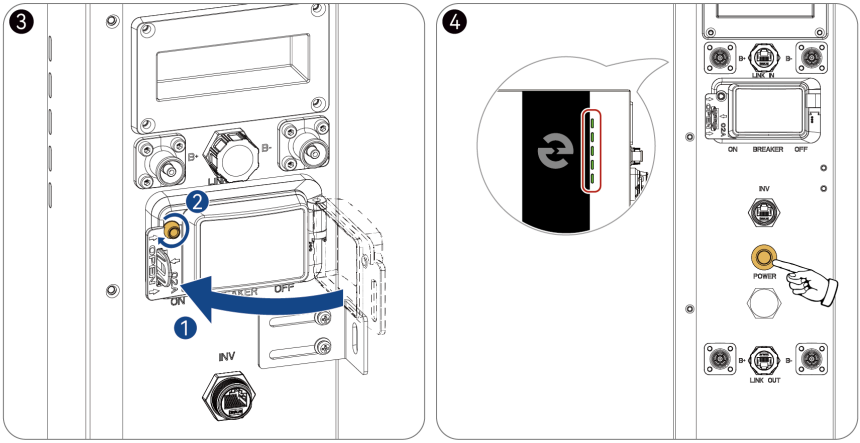
1. Loosen the screws on the **BREAKER** cover and press the latch to unlock the cover.
2. Open the cover and flip the switch a full 90 degrees from **OFF** to **ON** to turn on the circuit breaker.

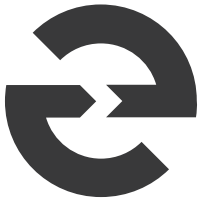
**CAUTION**

- Always turn on the circuit breaker before pressing the power button. If 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.



3. Close the cover and tighten the screw.
4. Press the **POWER** button and hold for 5 seconds, until the LED indicator is on.





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