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# **Residential Smart Inverter**

**ET G3 25-50kW**

**Solutions Manual**

**GOODWE**

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## **NOTE**

The contents of this document are updated periodically due to product version upgrades or other reasons. Unless otherwise specified, the contents of this document do not supersede the safety precautions on the product label. All descriptions in this document are provided for guidance only.

# Preface

## Overview

This document primarily describes the grid connection configurations, system wiring, and commissioning of the PV-storage solution. Safety precautions, product descriptions, site selection requirements, and maintenance information for the devices included in the solution are provided in the corresponding device user manuals.

## Symbol Definitions

|                                                                                                                                                |
|------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>DANGER</b>                                                |
| Indicates a highly hazardous situation that, if not avoided, will result in death or serious injury.                                           |
|  <b>WARNING</b>                                             |
| Indicates a moderately hazardous situation that, if not avoided, could result in death or serious injury.                                      |
|  <b>CAUTION</b>                                             |
| Indicates a low-hazard situation that, if not avoided, could result in moderate or minor injury.                                               |
| <b>NOTE</b>                                                                                                                                    |
| Emphasizes or supplements information. It may also provide tips or tricks for optimizing product use to help you solve a problem or save time. |

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# 1 System Overview

The residential smart inverter solution integrates devices such as the inverter, battery, smart meter, and smart communication stick. In a photovoltaic system, it converts solar energy into electrical energy to meet household electricity demand. The energy IoT devices in the system manage electrical loads by identifying the overall power status of the system, thereby enabling intelligent management of energy for use by loads, storage in the battery, or export to the grid.

## WARNING

- The energy storage system is not suitable for connecting equipment that relies on a stable power supply, such as life-support medical equipment. Ensure that, when the system is powered off, no personal injury is caused.
- Select the battery model according to the inverter and battery compatibility list. For requirements concerning batteries used in the same system, such as whether different models can be mixed or whether capacities must be identical, refer to the user manual for the corresponding battery model or contact the battery manufacturer. Inverter and battery compatibility list: [https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW\\_Battery%20Compatibility%20Overview-EN.pdf](https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_Battery%20Compatibility%20Overview-EN.pdf).
- Due to product version upgrades or other reasons, the document content may be updated periodically. For the compatibility between inverters and IoT products, refer to: [https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW\\_Compatibility-list-of-GoodWe-inverters-and-IoT-products-EN.pdf](https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_Compatibility-list-of-GoodWe-inverters-and-IoT-products-EN.pdf).
- In a system operating fully off-grid with an inverter, if the battery remains under low-light or rainy conditions for an extended period without timely recharging, it may become excessively discharged, resulting in battery performance degradation or damage. To ensure long-term stable system operation, avoid completely depleting the battery. The recommended measures are as follows:
  1. During off-grid operation, set the minimum SOC Protection threshold. It is recommended to set the off-grid battery SOC lower limit to 30%.
  2. When the SOC approaches the Protection threshold, the system automatically enters load-limiting or Protection mode.
  3. If there is insufficient sunlight for several consecutive days and the battery SOC

## ! WARNING

is too low, promptly use an external energy source, such as a generator or the grid for auxiliary charging, to recharge the battery.

4. Regularly check the battery status to ensure that it remains within the safe operating range.
  5. It is recommended to fully charge and discharge the battery once every six months to calibrate SOC accuracy.
- In microgrid scenarios, the recommended PV open-circuit voltage of the hybrid inverter is  $< 0.85 \times \text{PV Max. Input Voltage}$  to prevent excessive system voltage from triggering overvoltage Protection under severe operating conditions.
  - When the system is exposed to high temperatures or the BMS current limit is active, the battery charging power may be restricted, causing the system voltage to rise excessively and trigger overvoltage Protection.
  - For detailed networking and wiring solutions for each scenario, refer to: Detailed System Wiring Diagram.

When the energy storage system is off-grid, it can supply power for the following loads under normal operation:

| Description of the Off-Grid Load Capacity of the BACK-UP Port |                                                  |                  |                                                                    |                  |
|---------------------------------------------------------------|--------------------------------------------------|------------------|--------------------------------------------------------------------|------------------|
| Inverter Model                                                | GW25K-ET-G30<br>GW29.999K-ET-G30<br>GW30K-ET-G30 |                  | GW37.5K-ET-G30<br>GW40K-ET-G30<br>GW49.999K-ET-G30<br>GW50K-ET-G30 |                  |
| Load Type                                                     | Single-phase                                     | Three-phase      | Single-phase                                                       | Three-phase      |
| Rated Power of a Single Inductive Load (kVA)                  | 3                                                | 9                | 4                                                                  | 12               |
| Total Rated Power of Multiple Inductive Loads (kVA)           | $0.5 \times P_n / 3$                             | $0.5 \times P_n$ | $0.5 \times P_n / 3$                                               | $0.5 \times P_n$ |
| Capacitive Load (kVA)                                         | $0.33 P_n / 3$                                   | $0.33 P_n$       | $0.33 P_n / 3$                                                     | $0.33 P_n$       |
| Half-Wave Load (kW)                                           | 4                                                | -                | 3                                                                  | -                |

### Description of the Off-Grid Load Capacity of the BACK-UP Port

Note:

- Pn: Inverter rated output power.
- Half-wave loads: Some older household appliances or appliances that do not comply with EMC standards (such as hair dryers using half-wave rectification and small heaters).
- If the total power of multiple inductive loads calculated based on Rated Power is less than the Rated Power of a single inductive load, the total Rated Power of multiple inductive loads is equal to the Rated Power of a single inductive load.
- An inverter is recommended for inductive loads.

### Description of the Off-Grid Load Capacity of the BACK-UP Port

| Inverter Model                                      | GW18K-ET-L-G30      |                 | GW25K-ET-L-G30<br>GW30K-ET-L-G30 |                 |
|-----------------------------------------------------|---------------------|-----------------|----------------------------------|-----------------|
| Load Type                                           | Single-phase        | Three-phase     | Single-phase                     | Three-phase     |
| Rated Power of a Single Inductive Load (kVA)        | 1.7                 | 5               | 2.3                              | 7               |
| Total Rated Power of Multiple Inductive Loads (kVA) | $0.5 \cdot P_n / 3$ | $0.5 \cdot P_n$ | $0.5 \cdot P_n / 3$              | $0.5 \cdot P_n$ |
| Capacitive Load (kVA)                               | $0.33 P_n / 3$      | $0.33 P_n$      | $0.33 P_n / 3$                   | $0.33 P_n$      |
| Half-Wave Load (kW)                                 | 2                   | -               | 2                                | -               |

### **Description of the Off-Grid Load Capacity of the BACK-UP Port**

Note:

- $P_n$ : Inverter rated output power.
- Half-wave loads: Some older household appliances or appliances that do not comply with EMC standards (such as hair dryers using half-wave rectification and small heaters).
- If the total power of multiple inductive loads calculated based on Rated Power is less than the Rated Power of a single inductive load, the total Rated Power of multiple inductive loads is equal to the Rated Power of a single inductive load.
- An inverter is recommended for inductive loads.



## NOTE

- Different types of equipment can be connected in different port combinations. After a dry contact load is connected to the SMART port, no other equipment can be connected.
- If output power limiting is required for a grid-tied inverter, connect a meter, CT, or other equipment separately.
- The diagram above only indicates the types of equipment that can be connected to each port and should not be used as the basis for the final configuration. For specific port combinations, see the "Inverter Port and Equipment Combination Table" below.

| Scenario    | GRID port                         | SMART port <sup>[2]</sup>         | BACK-UP port | Meter combination <sup>[1]</sup>                  | Detailed Wiring Diagram                                                                                          |
|-------------|-----------------------------------|-----------------------------------|--------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Single unit | -                                 | Generator                         | -            | Built-in meter/External meter (Meter ❶)           | <a href="#">5.1.Single-Device Connection to the SMART Port: Smart Load/Generator/Grid-Tied Inverter(Page 37)</a> |
|             | -                                 | Smart load                        | -            |                                                   |                                                                                                                  |
|             | -                                 | Grid-tied inverter <sup>[3]</sup> | -            |                                                   |                                                                                                                  |
|             | Generator                         | -                                 | -            | External meter (Meter ❶)                          | <a href="#">5.2.Generator Connected to the GRID Port + Smart Load Connected to the SMART Port(Page 38)</a>       |
|             | Generator                         | Smart load                        | -            |                                                   |                                                                                                                  |
|             | Grid-tied inverter <sup>[3]</sup> | -                                 | -            | Built-in meter/external meter (Meter ❶) + Meter ❷ |                                                                                                                  |

| Scenario                                                                                                            | GRID port                         | SMART port <sup>[2]</sup> | BACK-UP port | Meter combination <sup>[1]</sup> | Detailed Wiring Diagram                                                                                             |
|---------------------------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------|--------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------|
|                                                                                                                     | Grid-tied inverter <sup>[3]</sup> | Smart load                | -            |                                  | <a href="#">5.3.Grid-Tied Inverter Connected to the GRID Port + Smart Load Connected to the SMART Port(Page 40)</a> |
| <p>[1]: Built-in meter: Connect the inverter using the CT supplied with the unit. Meter ❶ is an external meter.</p> |                                   |                           |              |                                  |                                                                                                                     |

Table6 **Inverter Port Device Compatibility Table**

| Device Type | Model                                                                                                                                                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inverter    | GW25K-ET-G30<br>GW29.999K-ET-G30<br>GW30K-ET-G30<br>GW37.5K-ET-G30<br>GW40K-ET-G30<br>GW49.999K-ET-G30<br>GW50K-ET-G30<br>GW18K-ET-L-G30<br>GW25K-ET-L-G30<br>GW30K-ET-L-G30 | <ul style="list-style-type: none"> <li>The inverter is equipped with two battery input terminals, which support two connection methods:               <ul style="list-style-type: none"> <li>Parallel connection: Connect both battery inputs in parallel to the same battery system.</li> <li>Independent connection: The two BAT ports can be connected to separate batteries, which may be of different brands or have different ages. However, each BAT port can only be connected to one type of battery; battery types must not be mixed.</li> </ul> </li> </ul> |

| Device Type    | Model                                                                                                                                    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Battery system | GW25.6-BAT-I-G10<br>GW30.7-BAT-I-G10<br>GW35.8-BAT-I-G10<br>GW40.9-BAT-I-G10<br>GW46.0-BAT-I-G10<br>GW51.2-BAT-I-G10<br>GW56.3-BAT-I-G10 | <ul style="list-style-type: none"> <li>• The battery system supports parallel connection of up to 6 clusters.</li> <li>• Battery systems of different models must not be mixed in a parallel cluster.</li> <li>• To ensure full-power charging and discharging of the inverter and improve the reliability of balanced battery operation and load capacity, equalize the connections across the two battery ports wherever possible.</li> </ul> |
|                | GW61.4-BAT-AC-G10<br>GW92.1-BAT-AC-G10<br>GW102.4-BAT-AC-G10<br>GW112.6-BAT-AC-G10                                                       | <ul style="list-style-type: none"> <li>• The battery system supports parallel connection of up to 4 clusters.</li> <li>• Battery systems of different models must not be mixed in a parallel cluster.</li> <li>• To ensure full-power charging and discharging of the inverter and improve the reliability of balanced battery operation and load capacity, equalize the connections across the two battery ports wherever possible.</li> </ul> |
|                | GW208.9-BAT-LC-G10                                                                                                                       | <ul style="list-style-type: none"> <li>• The battery system supports parallel connection of up to 4 clusters.</li> <li>• Battery systems of different models must not be mixed in a parallel cluster.</li> <li>• To ensure full-power charging and discharging of the inverter and improve the reliability of balanced battery operation and load capacity, equalize the connections across the two battery ports wherever possible.</li> </ul> |

| Device Type               | Model                                                                                                                                                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Smart meter               | <ul style="list-style-type: none"> <li>Built-in meter (supplied with the inverter)</li> <li>GM330 (purchased from GoodWe)</li> <li>GMK330 (purchased from GoodWe)</li> </ul> | <ul style="list-style-type: none"> <li>Built-in meter: Use the CT supplied with the inverter to connect it to the inverter. <ul style="list-style-type: none"> <li>CT ratio:300A: 5A。</li> <li>If the CT cable length or measurement range is unsuitable for your application, contact your distributor to purchase a GMK330 or GM330 smart meter.</li> </ul> </li> <li>GMK330: The CT cannot be replaced. <ul style="list-style-type: none"> <li>CT ratio: 120 A:40 mA.</li> <li>Recommended for models rated 30 kW or less; select according to the actual application scenario.</li> </ul> </li> <li>GM330: The CT can be sourced from GoodWe or purchased independently. <ul style="list-style-type: none"> <li>CT ratio requirement: nA/5A. <ul style="list-style-type: none"> <li>n A: CT primary-side input current, where n ranges from 200 to 5000</li> <li>5 A: CT secondary-side output current</li> </ul> </li> </ul> </li> <li>If the conductor size or measurement range of the supplied CT does not meet the site's total current requirements, use a GM330 smart meter.</li> </ul> |
| Smart communication stick | WiFi/LAN Kit-20                                                                                                                                                              | Use Bluetooth for local device parameter configuration and viewing device operating information. Upload system operating information to the monitoring platform via Wi-Fi or LAN.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Device Type     | Model                                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | 4G Kit-CN-G20<br>4G Kit-CN-G21<br>(China only) | <ul style="list-style-type: none"> <li>• Applicable to single-inverter grid-connected scenarios.</li> <li>• Use Bluetooth to configure device parameters and view device operating information locally, and upload system operating information to the monitoring platform via 4G.</li> <li>• To use the 4G Kit-CN-G20 with an inverter, ensure that the Smart Communication Stick firmware version is 08 or later.</li> </ul> |
|                 | 4G Kit-G20                                     | <ul style="list-style-type: none"> <li>• Applicable to single-inverter grid-connected scenarios.</li> <li>• Use Bluetooth to configure device parameters and view device operating information locally, and upload system operating information to the monitoring platform via 4G.</li> </ul>                                                                                                                                  |
| High-power load | -                                              | <p>SG Ready heat pumps can be connected only in single-inverter scenarios and are controlled via dry contact signals.</p> <ol style="list-style-type: none"> <li>1. Total power of high-power loads &lt; maximum output power of the SMART port</li> <li>2. Power of high-power loads + BACK-UP power &lt; AC Max. Input Power (grid)</li> </ol>                                                                               |
| Generator       | -                                              | The generator power must be greater than the total power of all loads on the BACKUP port.                                                                                                                                                                                                                                                                                                                                      |

| Device Type        | Model | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Grid-tied inverter | -     | <ul style="list-style-type: none"> <li>• GoodWe grid-tied inverters are recommended; third-party grid-tied inverters are also supported.</li> <li>• For third-party grid-tied inverters, use ICE general-purpose safety standards.</li> <li>• Ensure that the rated output power of the grid-tied inverter is less than or equal to the rated output power of the hybrid inverter.</li> <li>• When the microgrid/coupled system is grid-connected, if power limitation is required, ensure that: <ul style="list-style-type: none"> <li>◦ Configure the PV-storage hybrid inverter on the Grid Power Limit screen in the app.</li> <li>◦ Configure third-party grid-tied inverters using the applicable tools.</li> </ul> </li> <li>• To ensure that the grid-tied inverter can continue generating power, adjust the hybrid inverter's output power on the Microgrid Mode screen in the app.</li> <li>• Note: Output power control accuracy varies among grid-tied inverters. Set the grid power limit parameter according to actual conditions.</li> </ul> |

## 2 Materials and Tools

### WARNING

- Do not connect loads between the inverter and the AC Switch directly connected to the inverter.
- Each inverter must have its own AC output circuit breaker. Multiple inverters must not be connected to the same AC circuit breaker.
- To ensure that the inverter can safely disconnect from the grid in the event of an abnormal condition, install an AC circuit breaker on the inverter's AC side. Select a suitable AC circuit breaker in accordance with local regulations.
- When the inverter is powered on, the BACK-UP AC port is energized. If you need to perform maintenance on BACK-UP loads, power off the inverter first; otherwise, electric shock may occur.
- For cables used in the same system, it is recommended that the conductor material, cross-sectional area, and length be consistent.
  - Inverter BACK-UP AC cable
  - Inverter GRID AC cable
- The inverter supports generator connection via an ATS switch, enabling power supply to be switched between the grid and the generator. By default, the ATS switch is connected to the grid.

### 2.1 Switch Preparation

| No. | Circuit Breaker                               | Recommended Specifications                                                                                                                                                                                                                                                                | Procurement Method | Remarks |
|-----|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|
| 1   | GRIDCircuit Breaker<br>BACK-UPCircuit Breaker | Recommended specifications for partial backup scenarios: <ul style="list-style-type: none"><li>• Nominal Voltage <math>\geq 230</math> Vac;<br/>Rated Current requirements are as follows:<ul style="list-style-type: none"><li>◦ GW25K-ET-G30: <math>\geq 63</math>A</li></ul></li></ul> | Self-provided      |         |

| No. | Circuit Breaker | Recommended Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Procurement Method | Remarks                                                                                                                                                      |
|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                 | <ul style="list-style-type: none"> <li>◦ GW29.999K-ET-G30: <math>\geq 63A</math></li> <li>◦ GW30K-ET-G30: <math>\geq 80A</math></li> <li>◦ GW37.5K-ET-G30: <math>\geq 80A</math></li> <li>◦ GW40K-ET-G30: <math>\geq 80A</math></li> <li>◦ GW49.999K-ET-G30: <math>\geq 100A</math></li> <li>◦ GW50K-ET-G30: <math>\geq 100A</math></li> </ul> <ul style="list-style-type: none"> <li>• Nominal Voltage <math>\geq 127</math> Vac;<br/>Rated Current requirements are as follows:               <ul style="list-style-type: none"> <li>◦ GW18K-ET-L-G30: <math>\geq 63A</math></li> <li>◦ GW25K-ET-L-G30: <math>\geq 80A</math></li> <li>◦ GW30K-ET-L-G30: <math>\geq 100A</math></li> </ul> </li> </ul> <p>Recommended specifications for whole-home backup scenarios:</p> <ul style="list-style-type: none"> <li>• Nominal Voltage <math>\geq 230</math> Vac;<br/>Rated Current requirements are as follows:               <ul style="list-style-type: none"> <li>◦ GW25K-ET-G30: <math>\geq 100A</math></li> <li>◦ GW29.999K-ET-G30: <math>\geq 100A</math></li> <li>◦ GW30K-ET-G30: <math>\geq 100A</math></li> <li>◦ GW37.5K-ET-G30: <math>\geq 200A</math></li> <li>◦ GW40K-ET-G30: <math>\geq 200A</math></li> <li>◦ GW49.999K-ET-G30: <math>\geq 200A</math></li> <li>◦ GW50K-ET-G30: <math>\geq 200A</math></li> </ul> </li> </ul> |                    | For actual selection, you may also choose a circuit breaker based on the actual operating current, provided it complies with local installation regulations. |

| No. | Circuit Breaker | Recommended Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Procurement Method | Remarks |
|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|
|     |                 | <ul style="list-style-type: none"> <li>Nominal Voltage <math>\geq 127</math> Vac;<br/>Rated Current requirements are as follows:               <ul style="list-style-type: none"> <li>GW18K-ET-L-G30: <math>\geq 100</math>A</li> <li>GW25K-ET-L-G30: <math>\geq 100</math>A</li> <li>GW30K-ET-L-G30: <math>\geq 200</math>A</li> </ul> </li> </ul> <p>Note: If the inverter's BACK-UP port is not used, select a suitable GRID circuit breaker based on the maximum grid-tied current.</p> |                    |         |

| No. | Circuit Breaker       | Recommended Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Procurement Method | Remarks |
|-----|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|
| 2   | SMART Circuit Breaker | <p>Recommended circuit breaker specifications are as follows:</p> <ul style="list-style-type: none"> <li>Nominal Voltage <math>\geq 230</math> Vac;<br/>Rated Current requirements are as follows: <ul style="list-style-type: none"> <li>GW25K-ET-G30: <math>\geq 63</math>A</li> <li>GW29.999K-ET-G30: <math>\geq 63</math>A</li> <li>GW30K-ET-G30: <math>\geq 80</math>A</li> <li>GW37.5K-ET-G30: <math>\geq 80</math>A</li> <li>GW40K-ET-G30: <math>\geq 80</math>A</li> <li>GW49.999K-ET-G30: <math>\geq 100</math>A</li> <li>GW50K-ET-G30: <math>\geq 100</math>A</li> </ul> </li> <li>Nominal Voltage <math>\geq 127</math> Vac;<br/>Rated Current requirements are as follows: <ul style="list-style-type: none"> <li>GW18K-ET-L-G30: <math>\geq 63</math>A</li> <li>GW25K-ET-L-G30: <math>\geq 80</math>A</li> <li>GW30K-ET-L-G30: <math>\geq 100</math>A</li> </ul> </li> </ul> | Self-provided      |         |

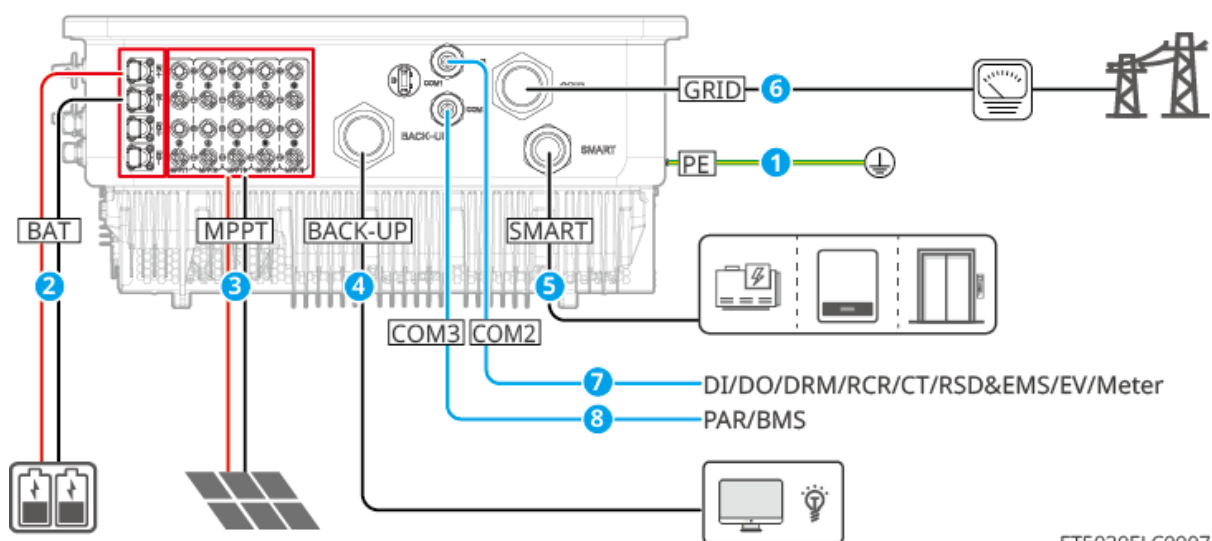
| No. | Circuit Breaker               | Recommended Specifications                                                                                                                                                                                                                                                                                                                                                                                           | Procurement Method | Remarks                                                                                                                                                                                                                                                                     |
|-----|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2   | ATS Switch                    | For the same model, the ATS switch and the GRID circuit breaker have the same specifications.                                                                                                                                                                                                                                                                                                                        | Self-provided      | <ul style="list-style-type: none"> <li>• This switch must have an interlocking function.</li> <li>• For actual selection, you may also choose a circuit breaker based on the actual operating current, provided it complies with local installation regulations.</li> </ul> |
| 3   | Residual Current Device (RCD) | <p>RCD installation and selection of RCD specifications:</p> <p>It is recommended to install an external Type A RCD on the inverter's AC output side, with a residual operating current rating of <math>\geq 300</math> mA (for inverter capacity <math>&lt; 30</math> kVA, select a residual operating current rating of 300 mA; for inverter capacity <math>\geq 30</math> kVA, select a rating of 10 mA/kVA).</p> | Self-provided      | For actual selection, you may also choose an RCD specification that complies with local regulations. For example, in Chile, local regulations require an RCD with a rated                                                                                                   |

| No. | Circuit Breaker | Recommended Specifications | Procurement Method | Remarks                                                                                                                                                                                                                                                                                                         |
|-----|-----------------|----------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     |                 |                            |                    | residual operating current of no more than 30 mA to be installed between the grid and inverters rated at 5 kVA or below. Note, however, that due to PV modules, RCDs with lower residual operating current ratings are more prone to nuisance tripping in adverse conditions such as rainy or overcast weather. |

| No. | Circuit Breaker                   | Recommended Specifications                                                                                             | Procurement Method | Remarks                                                                                                                                                                                                                                  |
|-----|-----------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4   | (Optional) Manual Transfer Switch | Nominal Voltage: $\geq 230$ Vac<br>Rated Current: Select a suitable circuit breaker based on the total connected load. | Self-provided      | <ul style="list-style-type: none"> <li>• For single-unit applications only</li> <li>• When selecting the equipment, choose a suitable manual transfer switch in accordance with local regulations and the actual application.</li> </ul> |

| No. | Circuit Breaker | Recommended Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Procurement Method | Remarks                                                                                                                         |
|-----|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------|
| 5   | Battery Switch  | <ul style="list-style-type: none"> <li>• Select according to local laws and regulations</li> <li>• 2P DC Switch × 2 (one required for each battery port)</li> <li>• Nominal Voltage ≥ 1000 V; Rated Current requirements are as follows: <ul style="list-style-type: none"> <li>◦ GW25K-ET-G30, GW29.999K-ET-G30, GW30K-ET-G30, GW18K-ET-L-G30: ≥100A</li> <li>◦ GW37.5K-ET-G30, GW40K-ET-G30, GW49.999K-ET-G30, GW50K-ET-G30, GW25K-ET-L-G30, GW30K-ET-L-G30: ≥125A</li> </ul> </li> </ul> | Self-provided      | When selecting the equipment, choose a suitable battery switch in accordance with local regulations and the actual application. |

## 2.2 Cable Preparation



ET5030ELC0007

| No. | Cable                           | Recommended Specifications                                                                                                                                                                               | Procurement Method                            |
|-----|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| 1   | Inverter Protective Earth Cable | <ul style="list-style-type: none"> <li>Single-core outdoor copper cable</li> <li>Conductor cross-sectional area: 16mm<sup>2</sup></li> <li>Cable outer diameter: 8 mm</li> </ul>                         | Self-provided                                 |
| 2   | Battery DC Cable                | <ul style="list-style-type: none"> <li>Single-core outdoor copper cable</li> <li>Conductor cross-sectional area: 25 mm<sup>2</sup></li> </ul>                                                            | Obtain from the battery system accessory pack |
| 3   | PVDC Cable                      | <ul style="list-style-type: none"> <li>Industry-standard outdoor PV cable</li> <li>Conductor cross-sectional area: 4mm<sup>2</sup>-6mm<sup>2</sup></li> <li>Cable outer diameter: 5.9mm-8.8mm</li> </ul> | Self-provided                                 |

| No.  | Cable                                                         | Recommended Specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Procurement Method |
|------|---------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| 4, 6 | Inverter AC Cable                                             | <p>Multi-core outdoor copper cable<br/>Inverter AC input/output cable<br/>(BACK-UP/GRID):</p> <ul style="list-style-type: none"> <li>Conductor cross-sectional area: <ul style="list-style-type: none"> <li>GW18K-ET-L-G30, GW25K-ET-G30, GW29.999K-ET-G30, GW30K-ET-G30 <ul style="list-style-type: none"> <li>L1/L2/L3/N: 25mm<sup>2</sup>;</li> <li>PE: 16mm<sup>2</sup></li> </ul> </li> <li>GW25K-ET-L-G30, GW30K-ET-L-G30, GW37.5K-ET-G30, GW40K-ET-G30, GW49.999K-ET-G30, GW50K-ET-G30 <ul style="list-style-type: none"> <li>L1/L2/L3/N: 50mm<sup>2</sup></li> <li>PE: 25mm<sup>2</sup></li> </ul> </li> </ul> </li> <li>Cable outer diameter:28-42mm</li> </ul> | Self-provided      |
| 5    | SMART Port Power Cable                                        | <ul style="list-style-type: none"> <li>Multi-core outdoor copper cable</li> <li>Conductor cross-sectional area: <ul style="list-style-type: none"> <li>GW18K-ET-L-G30, GW25K-ET-G30, GW29.999K-ET-G30, GW30K-ET-G30: 16mm<sup>2</sup></li> <li>GW25K-ET-L-G30, GW30K-ET-L-G30, GW37.5K-ET-G30, GW40K-ET-G30, GW49.999K-ET-G30, GW50K-ET-G30: 25mm<sup>2</sup></li> </ul> </li> <li>Cable outer diameter:24-32mm</li> </ul>                                                                                                                                                                                                                                               | Self-provided      |
| 7, 8 | Load Control or Diesel Generator ControlDOCommunication Cable |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Self-provided      |

| No. | Cable                                                   | Recommended Specifications                                                                                                                                                                                                                                                                  | Procurement Method                            |
|-----|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
|     | Remote Shutdown/Emergency Power Off Communication Cable | <ul style="list-style-type: none"> <li>• Shielded cable compliant with local standards</li> <li>• Conductor cross-sectional area: 0.2–0.5 mm<sup>2</sup></li> <li>• Cable outer diameter: 5–8 mm</li> </ul>                                                                                 |                                               |
|     | Rapid Shutdown Communication Cable                      |                                                                                                                                                                                                                                                                                             |                                               |
|     | EMS RS485 Communication Cable                           |                                                                                                                                                                                                                                                                                             |                                               |
|     | EV Charger or Energy Meter RS485 Communication Cable    |                                                                                                                                                                                                                                                                                             |                                               |
|     | CT Communication Cable                                  | -                                                                                                                                                                                                                                                                                           | Included with CT                              |
|     | Energy Meter Communication Cable                        | Standard straight-through Ethernet cable: <ul style="list-style-type: none"> <li>• RJ45 shielded modular plug</li> <li>• CAT 5E or higher-grade straight-through shielded Ethernet cable</li> <li>• The modular plug specifications must match the Ethernet cable specifications</li> </ul> | Self-provided                                 |
|     | BMS Communication Cable                                 | -                                                                                                                                                                                                                                                                                           | Obtain from the battery system accessory pack |

# 3 Installation Requirements

## 3.1 Installation Environment Requirements

1. Do not install the equipment in environments that are flammable, explosive, corrosive, or similar.
2. Select a well-ventilated installation environment with evenly distributed temperature and humidity, and ensure that the ambient temperature and humidity always remain within the operating range specified in the manufacturer's documentation.
3. We recommend installing the equipment in a sheltered location, protected from direct sunlight, rain, snow, and similar conditions. If site constraints prevent complete sheltering, ensure that the ambient temperature, humidity, and other conditions always remain within the permissible ranges specified in the equipment documentation, and take the necessary protective measures.
4. Adverse environmental conditions, such as direct sunlight and high temperatures, may cause the inverter to derate its output power. When selecting the installation site, give adequate consideration to heat dissipation and avoid exposing the equipment to direct sunlight.
5. Select an installation and storage location away from areas subject to direct cold-air drafts, such as air conditioner outlets. Excessive localized temperature differences may cause condensation inside the equipment, which could damage it.
6. Install the equipment out of children's reach and avoid locations where it can be easily touched.
7. The inverter enclosure may exceed 60°C during operation. Do not touch the enclosure until it has cooled down to avoid burns.
8. The installation space must meet the equipment's ventilation, heat dissipation, and operating clearance requirements.
9. The installation environment must meet the equipment's Ingress Protection Rating.
  - The inverter and Smart Communication Stick can be installed indoors or outdoors.
  - The meter is for indoor installation only.
  - The BAT Series 61.4–112.6 kWh C&I Battery System can be installed indoors or outdoors.
  - The BAT Series 25.6–56.3 kWh High-Voltage Battery must be installed indoors in a well-ventilated area.

- The BAT-C Series 208.9 kWh C&I Battery System can be installed indoors or outdoors.
10. Install the equipment at a height that allows for convenient operation and maintenance. Ensure that the indicator lights and all labels are easy to see and that the terminals are easily accessible.
  11. The equipment must be installed at an altitude below the Max. Operating Altitude.
  12. The equipment emits a certain level of Noise Emission during operation. When selecting the installation site, carefully consider the impact of noise on the surrounding environment. Install the equipment away from noise-sensitive areas, including but not limited to residential areas, schools, hospitals, nursing homes, and office buildings.
  13. The battery system must be installed on a level, dry surface. The surface must not be sunken or sloped, and installation in areas where water may accumulate is strictly prohibited.
  14. Do not install the battery system on ground prone to water accumulation or subsidence. Ensure the ground can support the Weight of the battery system.
  15. Before installing equipment outdoors in salt-affected areas, consult the equipment manufacturer. Salt-affected areas primarily refer to locations within 500 m of the coast. The extent of the affected area depends on conditions such as sea winds, precipitation, and terrain.
  16. Keep the equipment away from strong magnetic fields to avoid electromagnetic interference. If a radio station or wireless communication equipment operating below 30 MHz is located near the installation site, install the equipment as follows:
    - Inverter: Add a ferrite core with multiple turns of the cable on the inverter DC input or AC output cable, or install a low-pass EMI filter; alternatively, maintain a distance of more than 30 m between the inverter and the wireless equipment causing electromagnetic interference.
    - Other equipment: Maintain a distance of more than 30 m between the equipment and the wireless equipment causing electromagnetic interference.

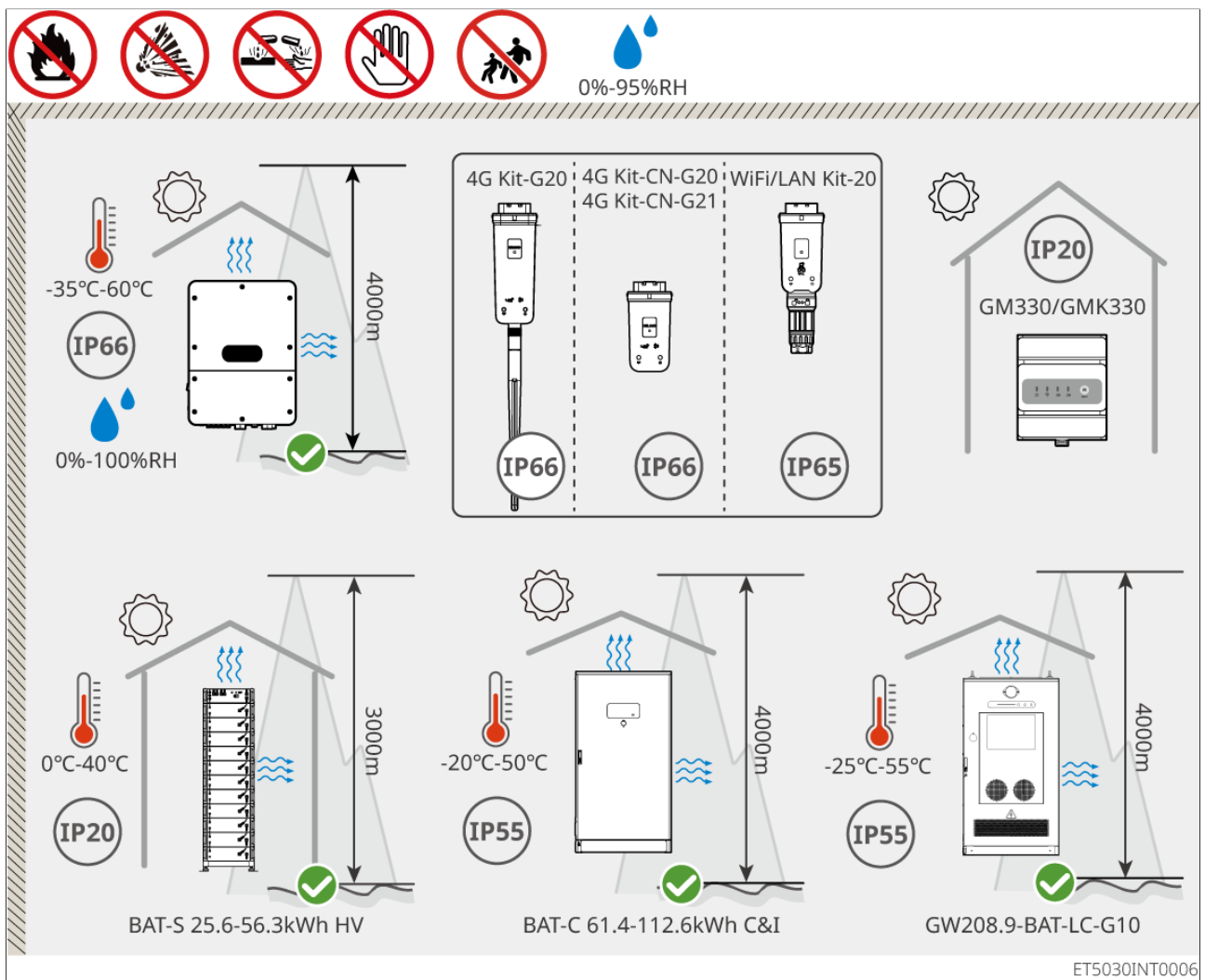


Figure2 Installation Environment Requirements

## 3.2 Installation Clearance Requirements

### NOTE

The battery installation clearance values may be adjusted according to the actual installation conditions and local regulations.

### 1. Installation Clearance

- Ventilation, Heat Dissipation, and Operating Space
  - The installation space must meet the equipment's ventilation and heat dissipation requirements, with sufficient clearance around the equipment.

- The installation space must meet the working clearance requirements to facilitate routine inspections, wiring, and maintenance.
- The equipment must be installed at a height that allows for convenient operation and maintenance.

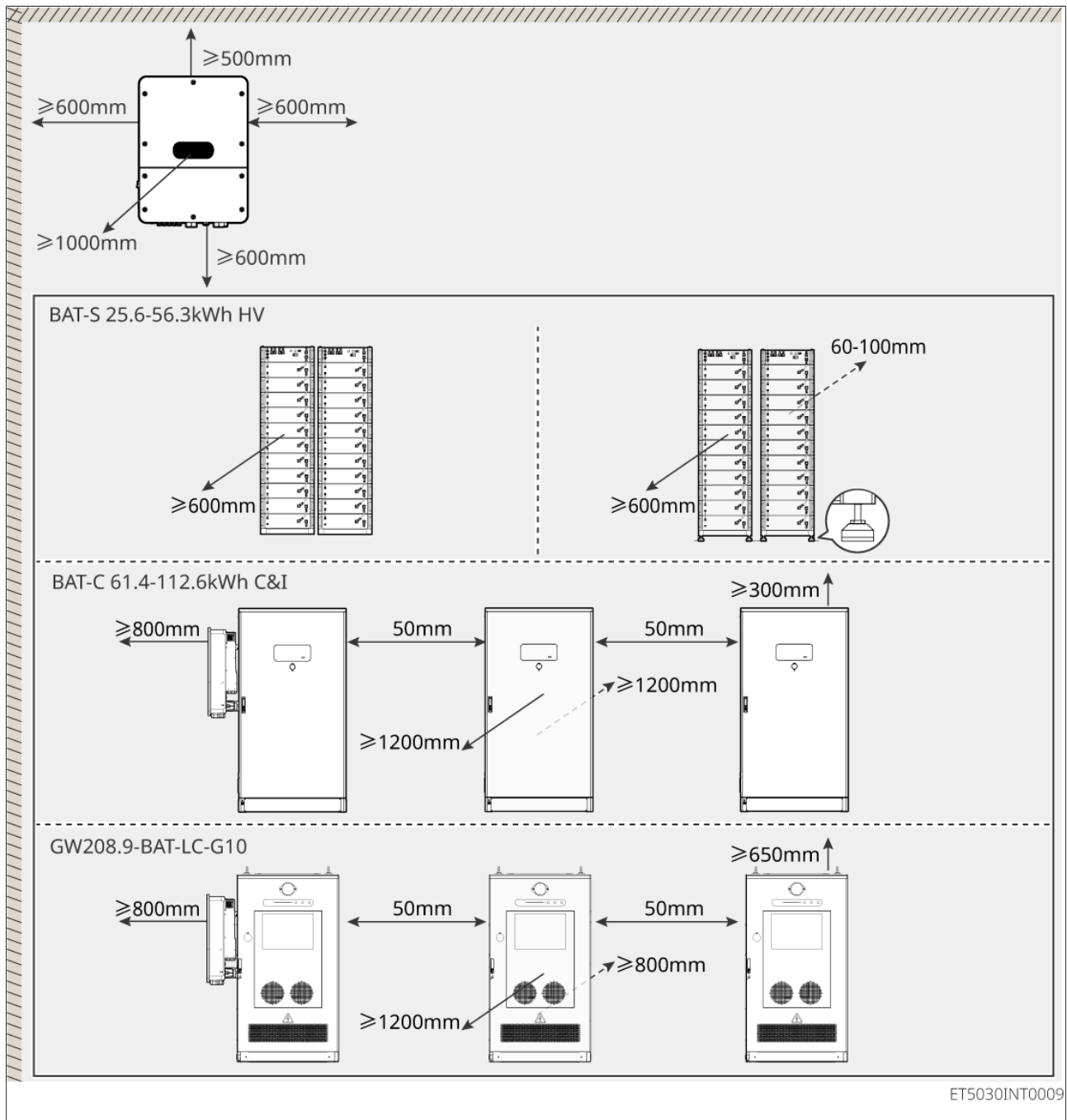


Figure3 Installation Clearance Requirements

## 2. Communication Cable Length Requirements for the Equipment

- Use CAT 5E or higher shielded twisted-pair cable for CT installation. The cable length must not exceed 30 m.
- The RS485 twisted-pair shielded cable for communication between the inverter and the meter must not exceed 100 m.

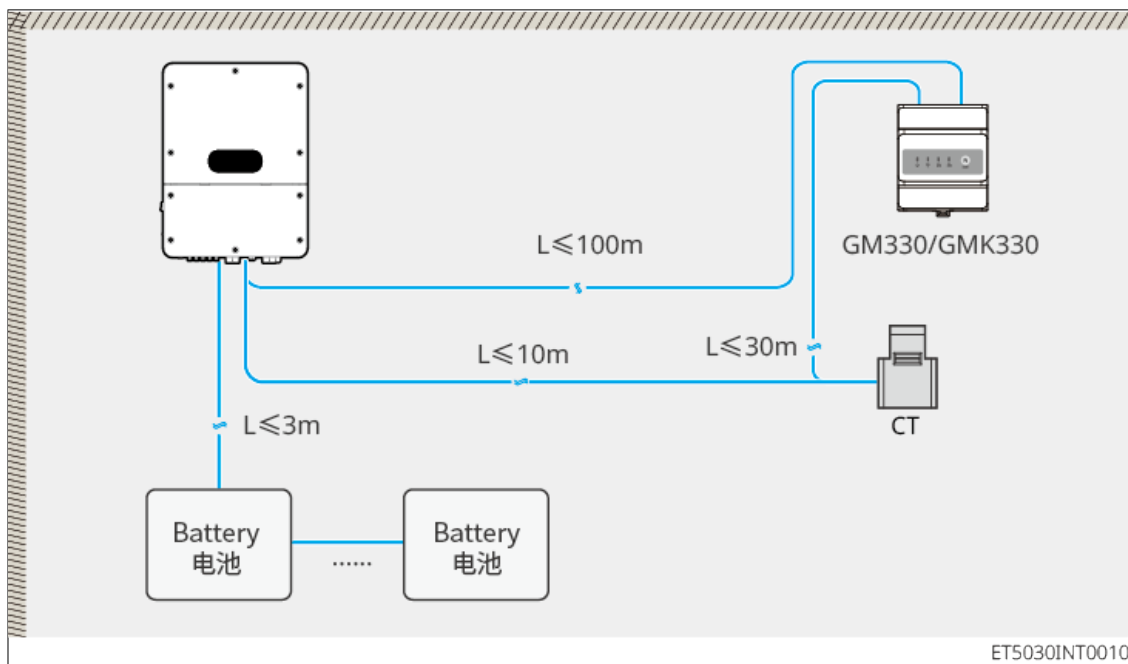


Figure4 Communication Cable Length Requirements

## 3.3 Battery Foundation Requirements

### NOTE

- The BAT Series 61.4–112.6 kWh C&I Battery System and BAT-C Series 208.9 kWh C&I Battery System require a foundation.
- The conduit can be replaced with a suitably sized PVC pipe according to site conditions.

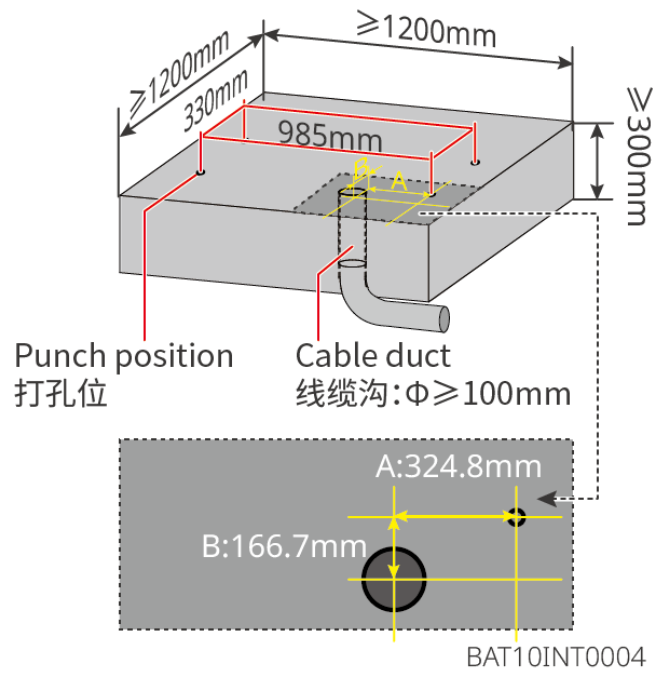
### 1. Foundation Material Requirements:

- The foundation for the BAT Series 92.1–112.6 kWh C&I Battery System must be a

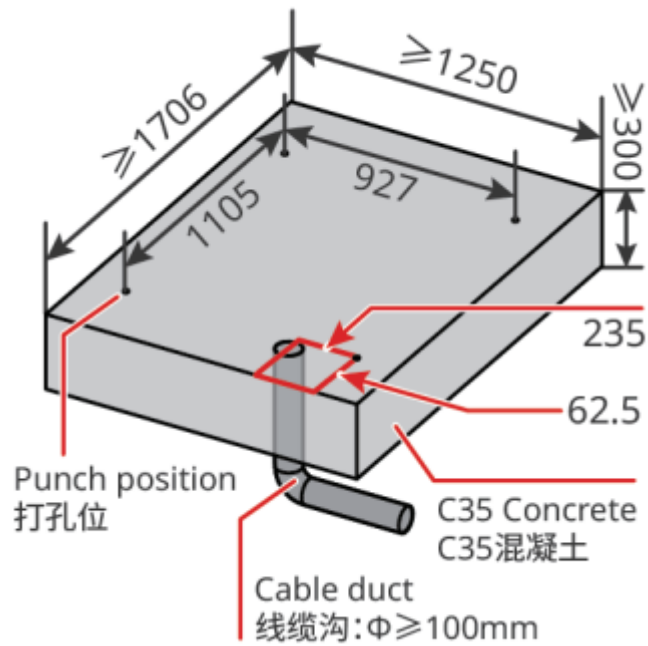
C25 plain concrete hardstanding or another non-combustible surface.

- The foundation for the BAT-C Series 208.9 kWh commercial and industrial battery system must be a C35 plain-concrete hardened floor or another non-combustible surface.
2. A cable trench or cable outlet hole must be reserved in the foundation to facilitate equipment wiring.
  3. The equipment, including its height, embedded sections for expansion screws, conduit, and other components, shall be adjusted based on the process requirements and site conditions.
  4. The finished elevation of the equipment foundation top may be adjusted according to the actual equipment and site requirements.
  5. Ensure that the equipment is installed level; tilting or inverting it is prohibited.
  6. Trench Requirements:
    - If the equipment uses bottom cable entry, the cable trench must be designed with dustproof and rodent-proof measures to prevent foreign objects from entering.
    - The cable trench must incorporate waterproof and moisture-proof measures to prevent cable aging and short circuits that could affect the normal operation of the equipment.
    - Because the equipment cables are relatively thick, sufficient space for the cables must be reserved when designing the cable trench to ensure smooth cable connections and prevent abrasion.
  7. The drawings are for reference only. Installation personnel shall review and adjust them according to the actual installation site conditions, geological conditions, and seismic requirements.

#### **BAT Series 61.4–112.6 Kwh Commercial and Industrial Battery System:**



### BAT Series 208.9 kWh Commercial and Industrial Battery System:



# 4 Installation Procedure

| Steps/流程        | 1 Installation/安装 | 2 PE | 3 PV | 4 Battery/电池线 | 5 AC | 6 COM | 7 Smart Dongle智能通讯棒 |
|-----------------|-------------------|------|------|---------------|------|-------|---------------------|
| Inverter<br>逆变器 |                   |      |      |               |      |       |                     |
| Tools<br>工具     |                   |      |      |               |      |       |                     |

ET5030INT0011

| Steps/流程      | 1 Installation/安装 | 2 PE | 3 Battery/功率线 | 4 COM | 5 Air Condition<br>空调线 | 6 AC PWR |
|---------------|-------------------|------|---------------|-------|------------------------|----------|
| Battery<br>电池 |                   |      |               |       |                        |          |
| Tools<br>工具   |                   |      |               |       |                        |          |

ET5030INT0007

| Steps/流程          | 1 Installation/安装 | 2 Cable Connections/接线 | 3 Power/上电 | 4 Commissioning/调试 |
|-------------------|-------------------|------------------------|------------|--------------------|
| Smart Meter<br>电表 |                   |                        |            |                    |

ET5030INT0008

## 5 Detailed System Wiring Diagram

When the loads in a PV system cannot consume all the electricity generated by the system, the surplus electricity is fed into the grid. A smart meter or CT can be used to monitor Energy Generation and control the amount of electricity fed into the grid.

- Connect a smart meter to enable output power limiting and load monitoring.
- After connecting a smart meter, enable the "Grid-Connected Power Limit" function in the app.

The detailed system wiring diagrams illustrate connections for only selected equipment models. Refer to the applicable wiring instructions for the equipment actually used.

## NOTE

- When installing a CT, ensure that the current flows from the consumer side toward the grid side. Reversing the polarity will cause equipment malfunction.
- Wiring methods vary by meter. Refer to the wiring instructions for the meter actually used.
- The CT supplied with the inverter has a ratio of 300 A:5 A. If the total primary-side current at the site exceeds the current-carrying capacity (conductor size) or measurement range of the supplied CT, use a GM330 smart meter.
- Do not connect a CT to the inverter's CT port if the inverter's built-in meter is not being used.
- If you provide your own ATS switch, it must have an interlocking function.
- When the GRID port is connected to a grid-tied inverter, a dual-meter configuration is required to enable power generation monitoring and load monitoring:
  - Meter 1 or the built-in meter is used to monitor the system's grid-connected power.
  - Meter 2 is used to monitor the power generation of the grid-tied inverter.
  - By integrating data from Meter 1 and Meter 2, the monitoring platform can provide real-time monitoring of load consumption.
  - See the "Dual-Meter Configuration Options" table below for dual-meter combinations. The wiring methods for the meter on the grid side and on the AC side of the grid-tied inverter are the same regardless of the meter model.
  - If output power limiting is required for a grid-tied inverter, connect a meter, CT, or other equipment separately.

### Dual-Meter Configuration Options

| Meter 1 (Grid Side) | Meter 2 (Grid-Tied Inverter AC Side) |
|---------------------|--------------------------------------|
| Built-in Meter      | GMK330                               |
| Built-in Meter      | GM330                                |
| GMK330              | GMK330                               |
| GM330               | GM330                                |
| GMK330              | GM330                                |

## Dual-Meter Configuration Options

GM330

GМК330

## 5.1 Single-Device Connection to the SMART Port: Smart Load/Generator/Grid-Tied Inverter

Detailed Wiring Diagram for a Three-Phase, Four-Wire Grid System:

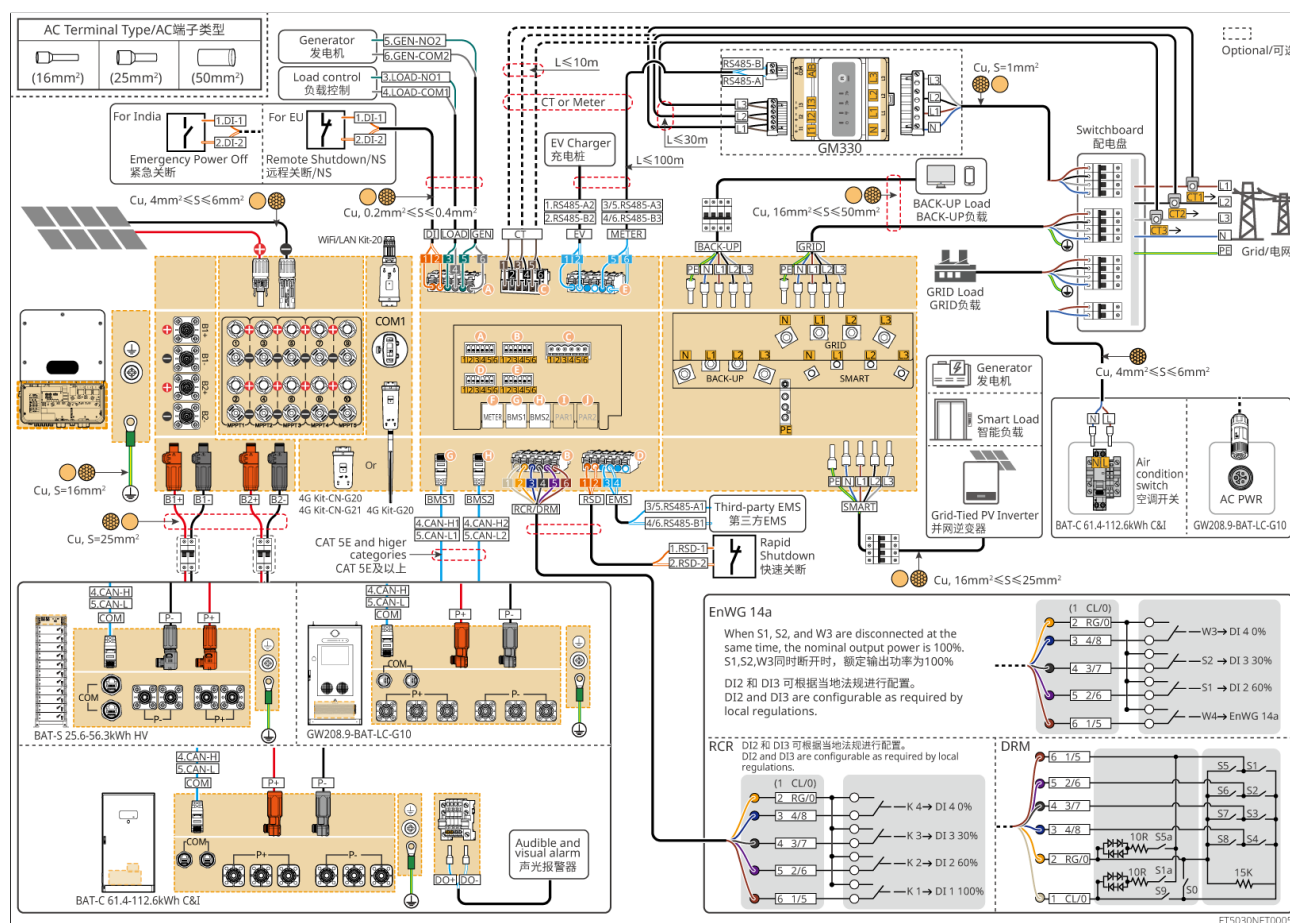


Figure5 System Diagram: Three-Phase, Four-Wire Grid; A Single Device (Smart Load/Generator/Grid-Tied Inverter) Connected to the SMART Port

Detailed Wiring Diagram for a Three-Phase, Three-Wire Grid System:

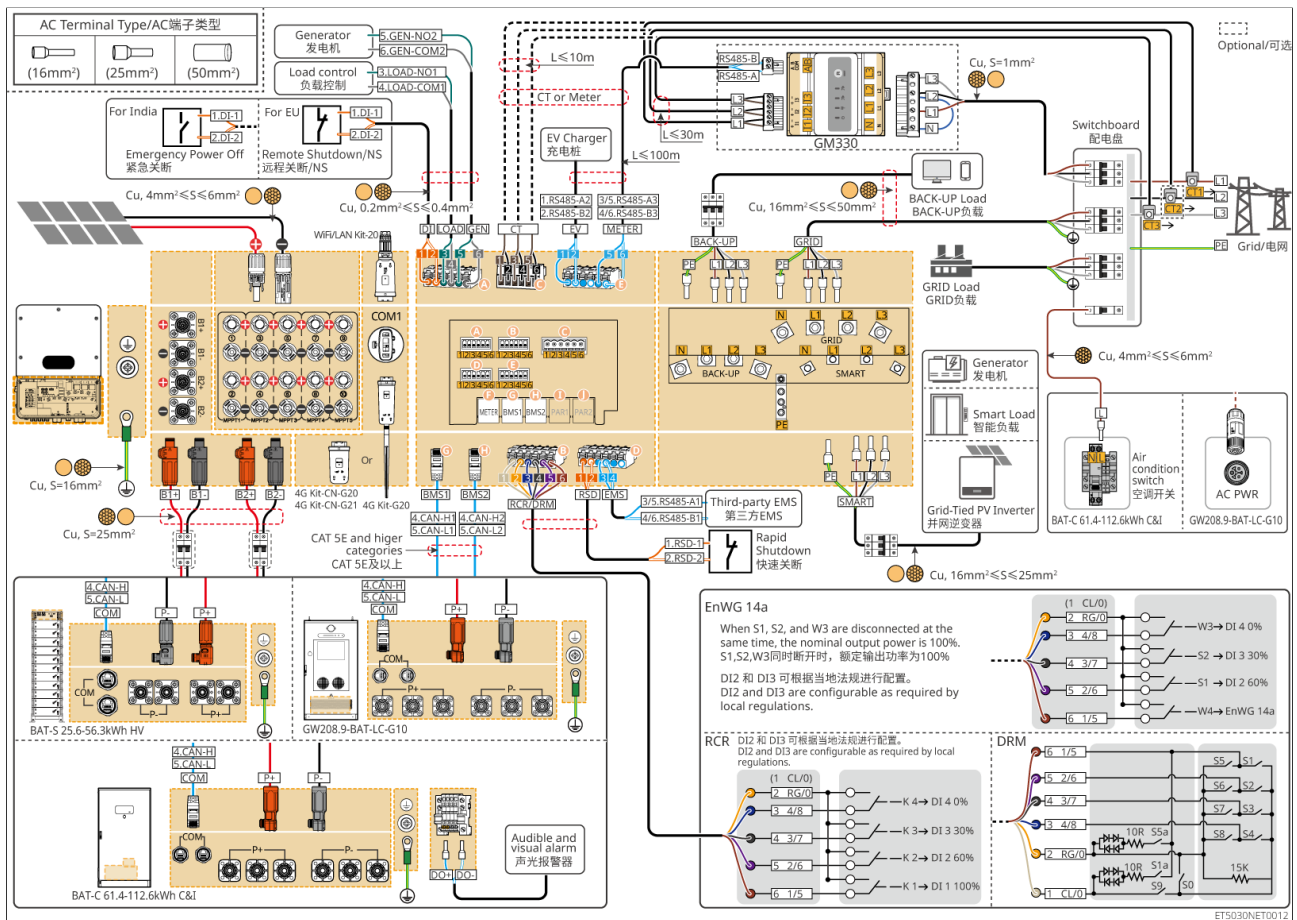


Figure6 System Diagram: Three-Phase, Three-Wire Grid; A Single Device (Smart Load/Generator/Grid-Tied Inverter) Connected to the SMART Port

## 5.2 Generator Connected to the GRID Port + Smart Load Connected to the SMART Port

An external meter must be used when a generator is connected to the GRID port.  
Detailed Wiring Diagram for a Three-Phase, Four-Wire Grid System:

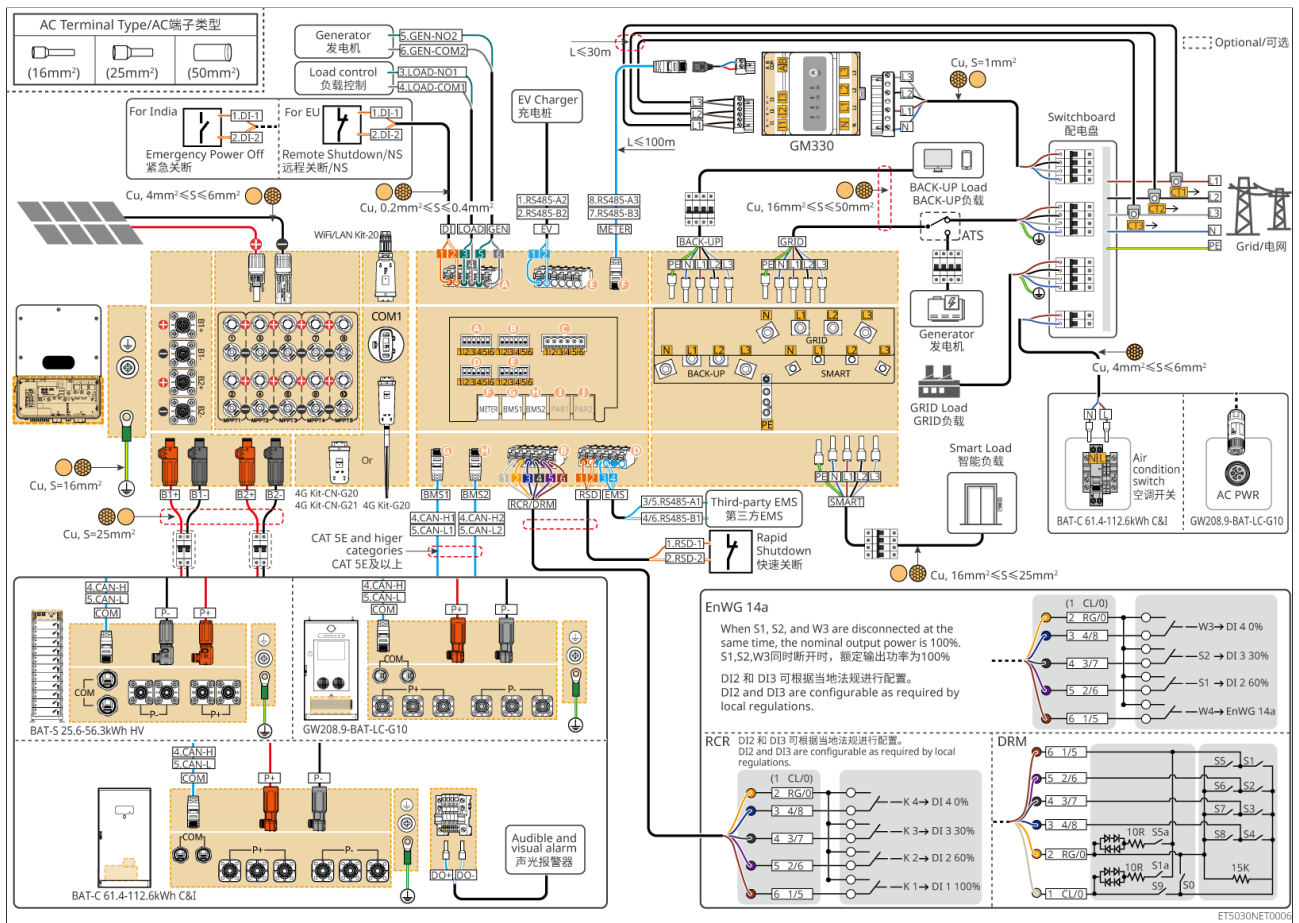


Figure7 System Diagram: Three-Phase, Four-Wire Grid; Generator Connected to the GRID Port + Smart Loads Connected to the SMART Port

Detailed Wiring Diagram for a Three-Phase, Three-Wire Grid System:

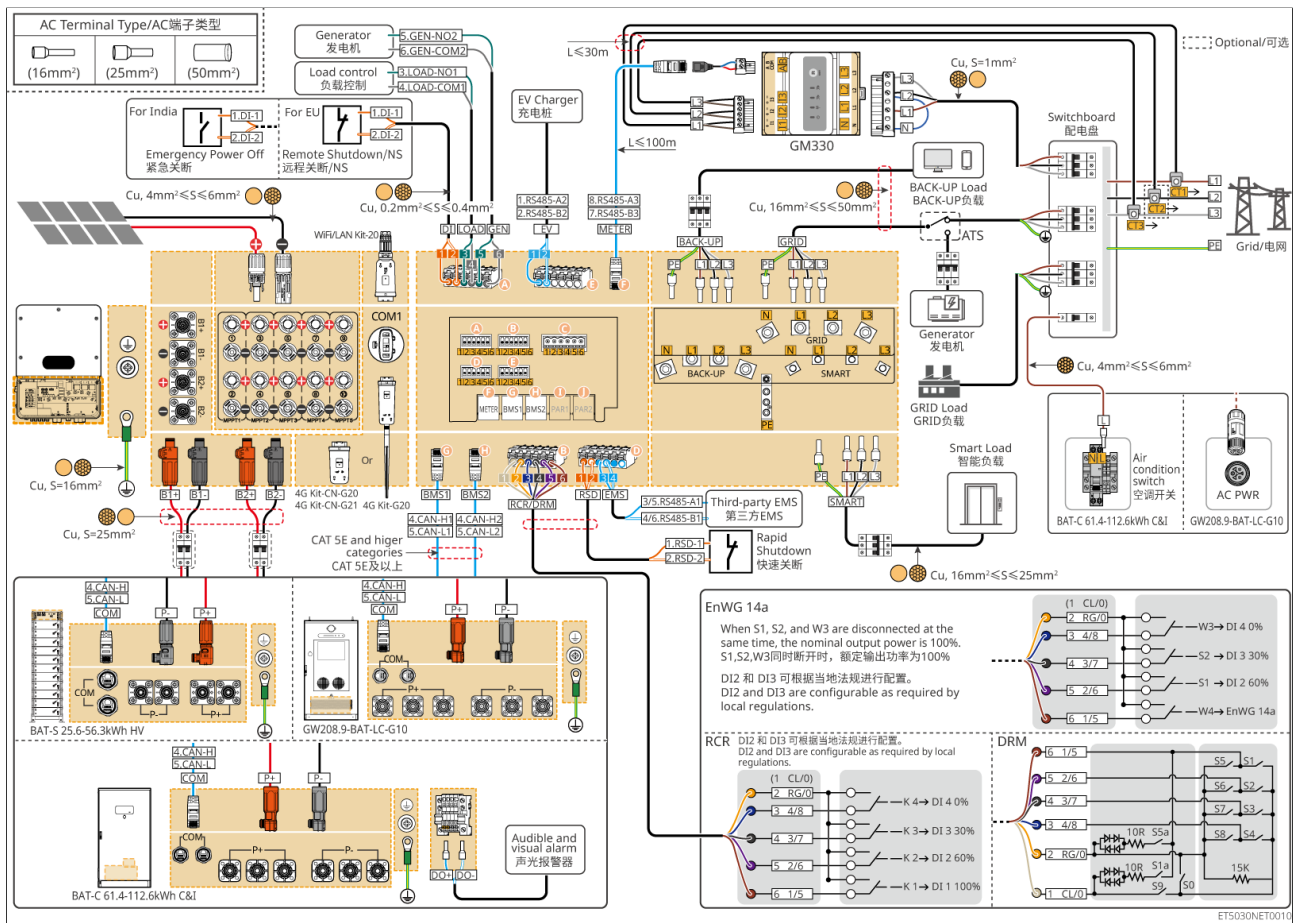


Figure8 System Diagram: Three-Phase, Three-Wire Grid; Generator Connected to the GRID Port + Smart Loads Connected to the SMART Port

## 5.3 Grid-Tied Inverter Connected to the GRID Port + Smart Load Connected to the SMART Port

Detailed Wiring Diagram for a Three-Phase, Four-Wire Grid System:



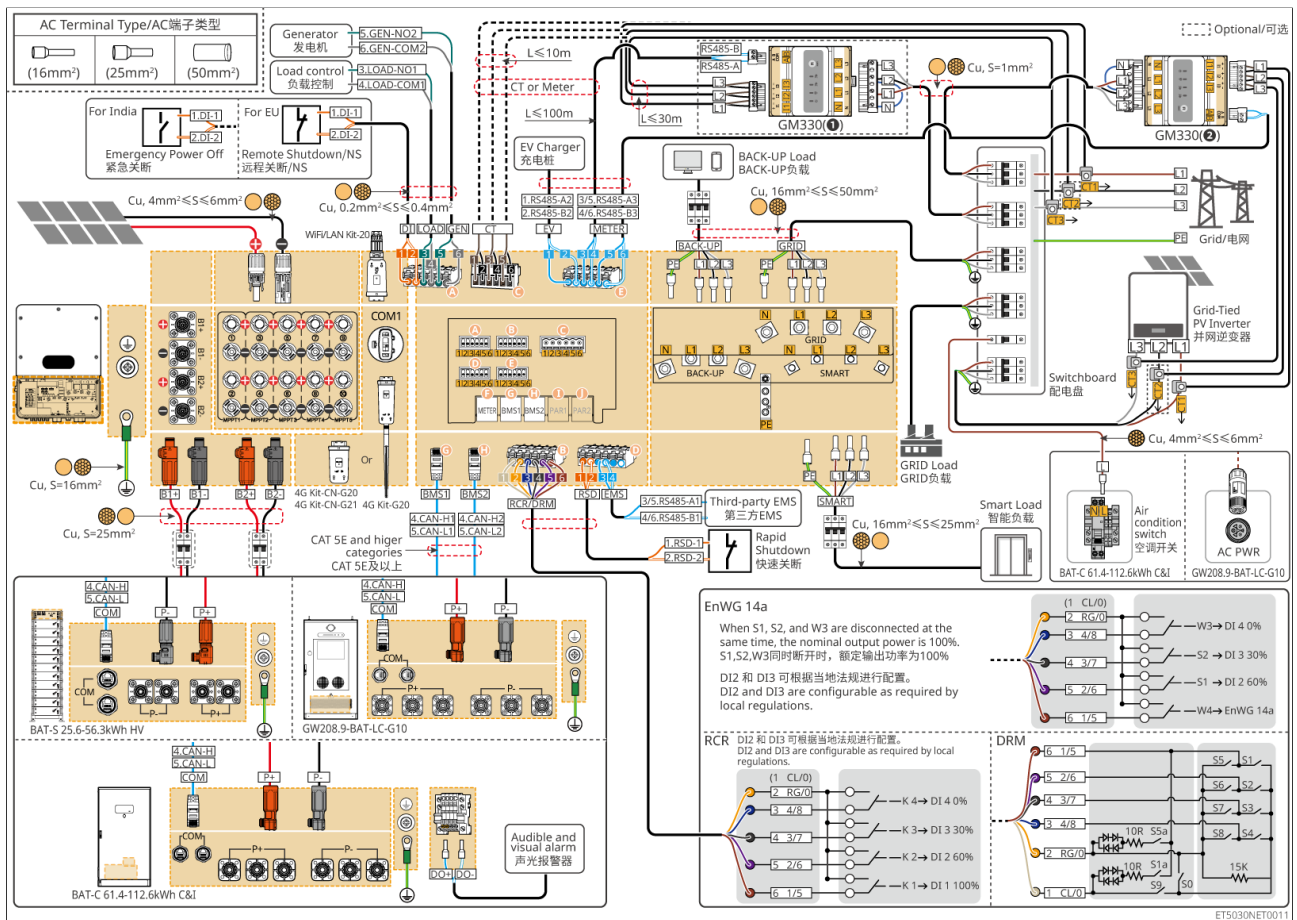


Figure10 System Diagram: Three-Phase, Three-Wire Grid; Grid-Tied Inverter Connected to the GRID Port + Smart Loads Connected to the SMART Port

## 5.4 Battery System Wiring

### NOTE

The inverter has two independent battery ports. Battery systems with 100 Ah cells should be connected separately to the two ports. Battery systems with 314 Ah cells must use a Y-terminal to connect to both battery ports simultaneously.

### BAT-S 25.6–56.3 kWh C&I Battery System

| Model                                                                                                                                                                   | GW25K-ET-G30   | GW29.9 99K-ET-G30<br>GW30K-ET-G30 | GW37.5 K-ET-G30<br>GW40K-ET-G30 | GW49.9 99K-ET-G30<br>GW50K-ET-G30 | GW18K-ET-L-G30 | GW25K-ET-L-G30 | GW30K-ET-L-G30 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------|---------------------------------|-----------------------------------|----------------|----------------|----------------|
| GW25.6-BAT-I-G10                                                                                                                                                        | √ (Max 20.5kW) | √ (Max 24.5kW)                    | √ (Max 25kW)                    | √ (Max 25kW)                      | √              | √              | √ (Max 25kW)   |
| GW30.7-BAT-I-G10                                                                                                                                                        | √*1            | √*1                               | √ (Max 30kW)                    | √ (Max 30kW)                      | √              | √              | √              |
| GW35.8-BAT-I-G10                                                                                                                                                        | √              | √                                 | √                               | √                                 | √              | √              | √              |
| GW40.9-BAT-I-G10                                                                                                                                                        | √              | √                                 | √                               | √                                 | √              | √              | √              |
| GW46.0-BAT-I-G10                                                                                                                                                        | √              | √                                 | √                               | √                                 | √              | √              | √              |
| GW51.2-BAT-I-G10                                                                                                                                                        | √              | √                                 | √                               | √                                 | √              | √              | √              |
| GW56.3-BAT-I-G10                                                                                                                                                        | √              | √                                 | √                               | √                                 | √              | √              | √              |
| Note:<br>*1. Due to factors such as temperature, SOC, and PV string configuration, the inverter cannot guarantee 1.1× discharge capability across the entire SOC range. |                |                                   |                                 |                                   |                |                |                |

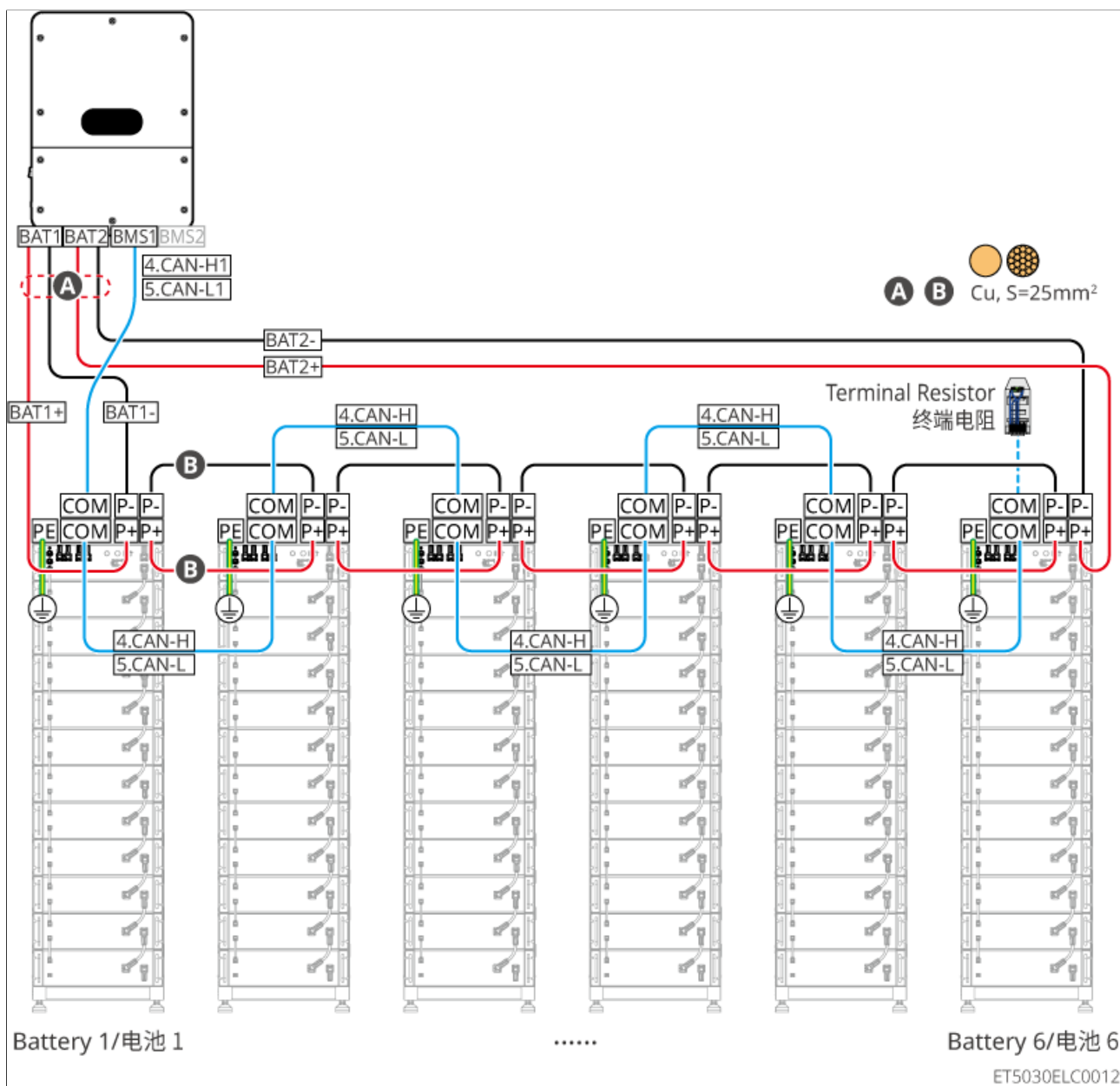


Figure11 Wiring Diagram: Inverter Connected to BAT-S 25.6–56.3 kWh C&I Battery System

## BAT 61.4–112.6 kWh C&I Battery System

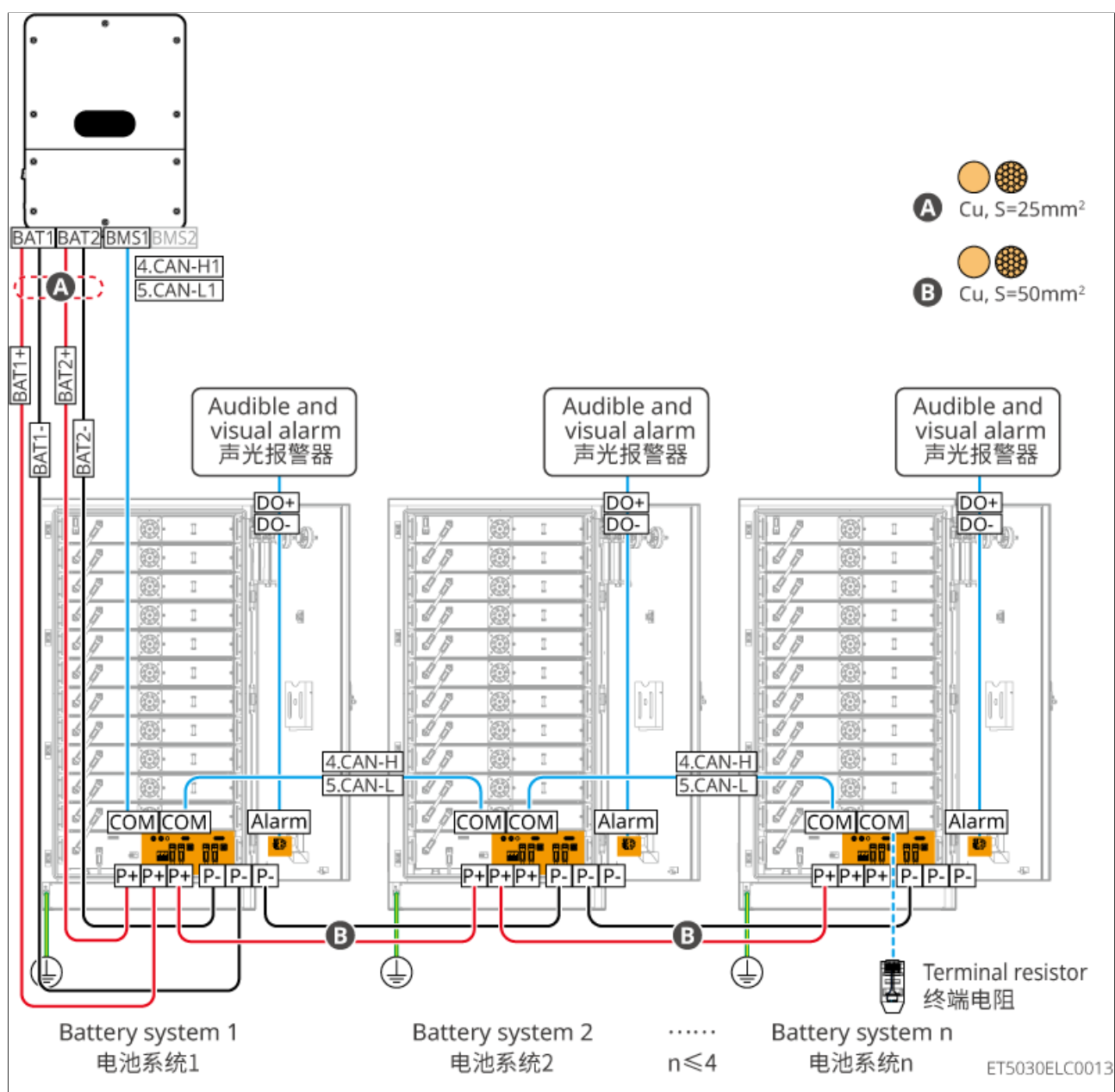


Figure12 Wiring Diagram: Inverter Connected to BAT 61.4–112.6 kWh C&I Battery System

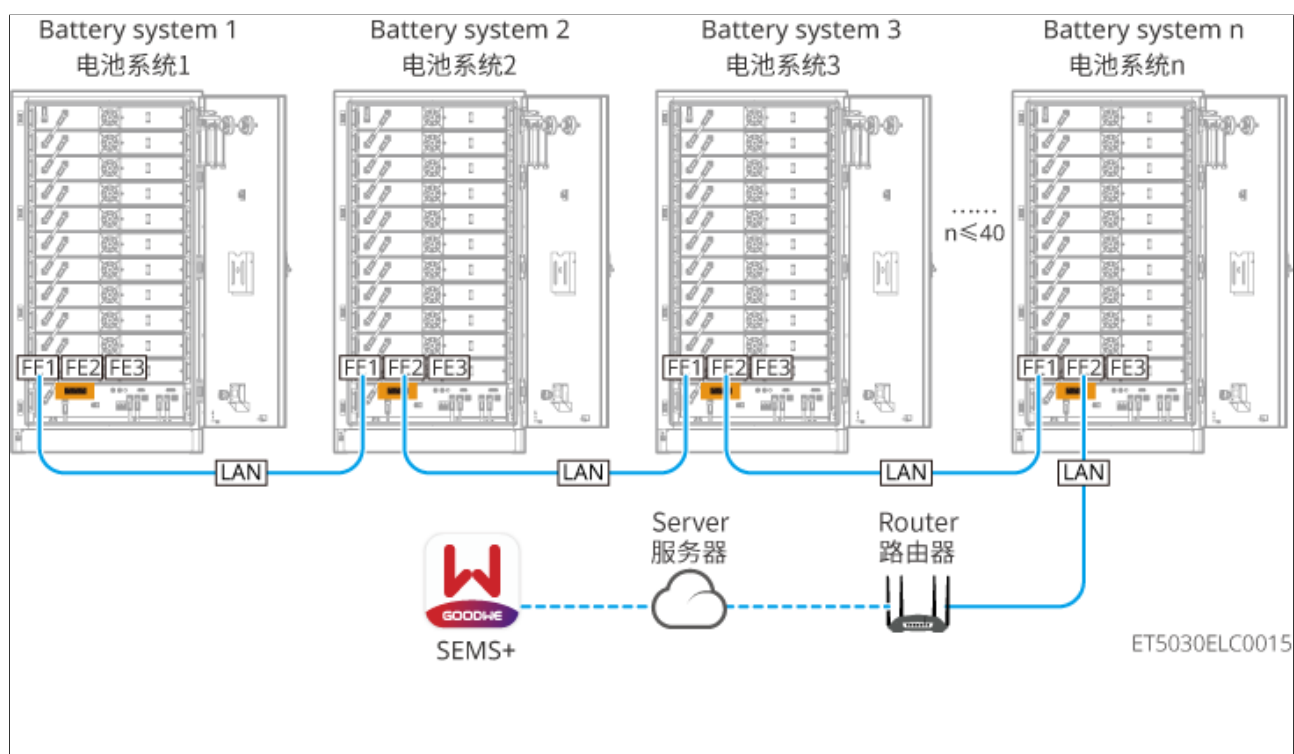


Figure13 Communication Diagram: BAT 61.4–112.6 kWh C&I Battery System

## BAT-C GW 208.9 kWh C&I Battery System

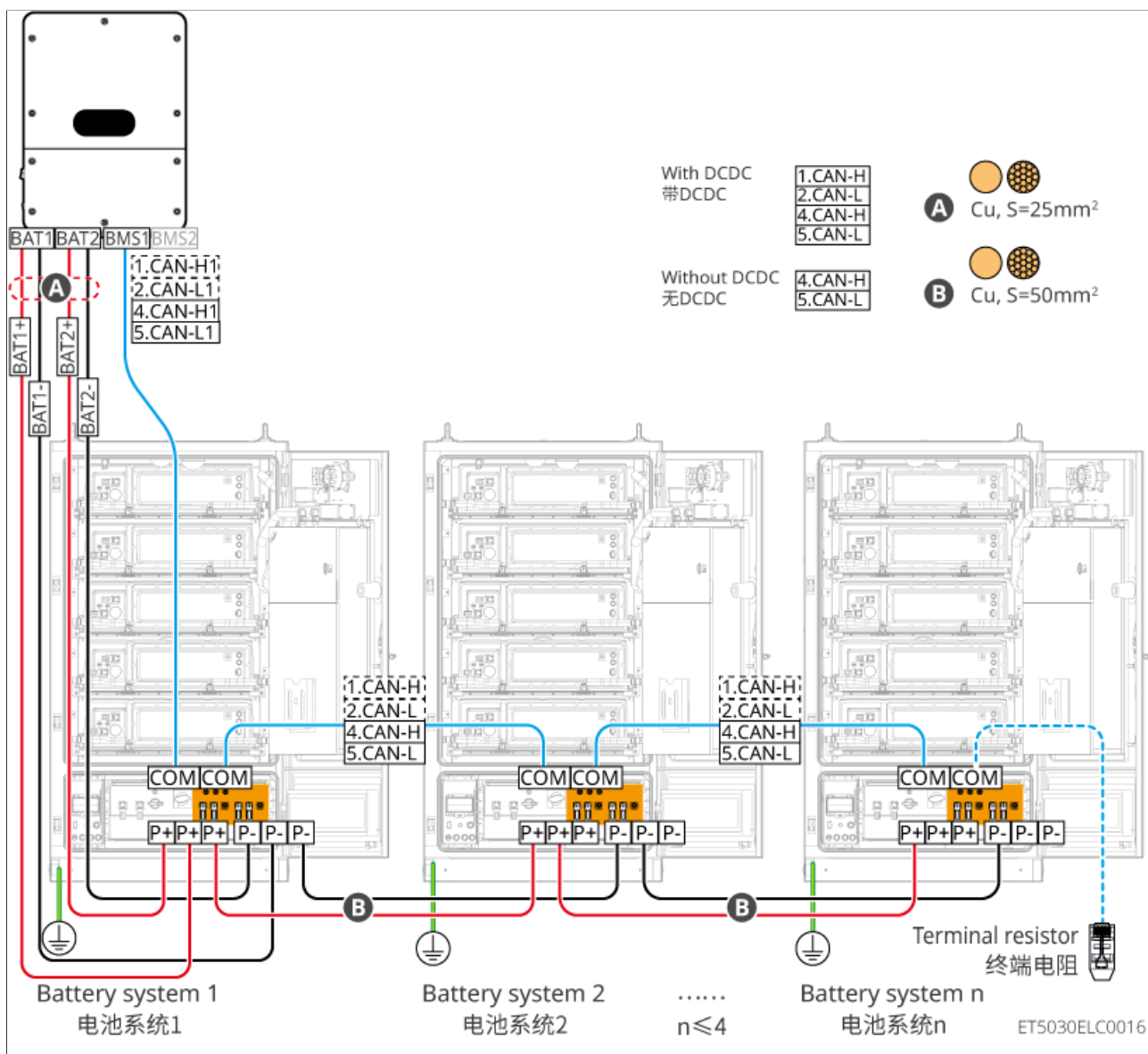


Figure14 Wiring Diagram: Inverter Connected to BAT-C GW 208.9 kWh C&I Battery System

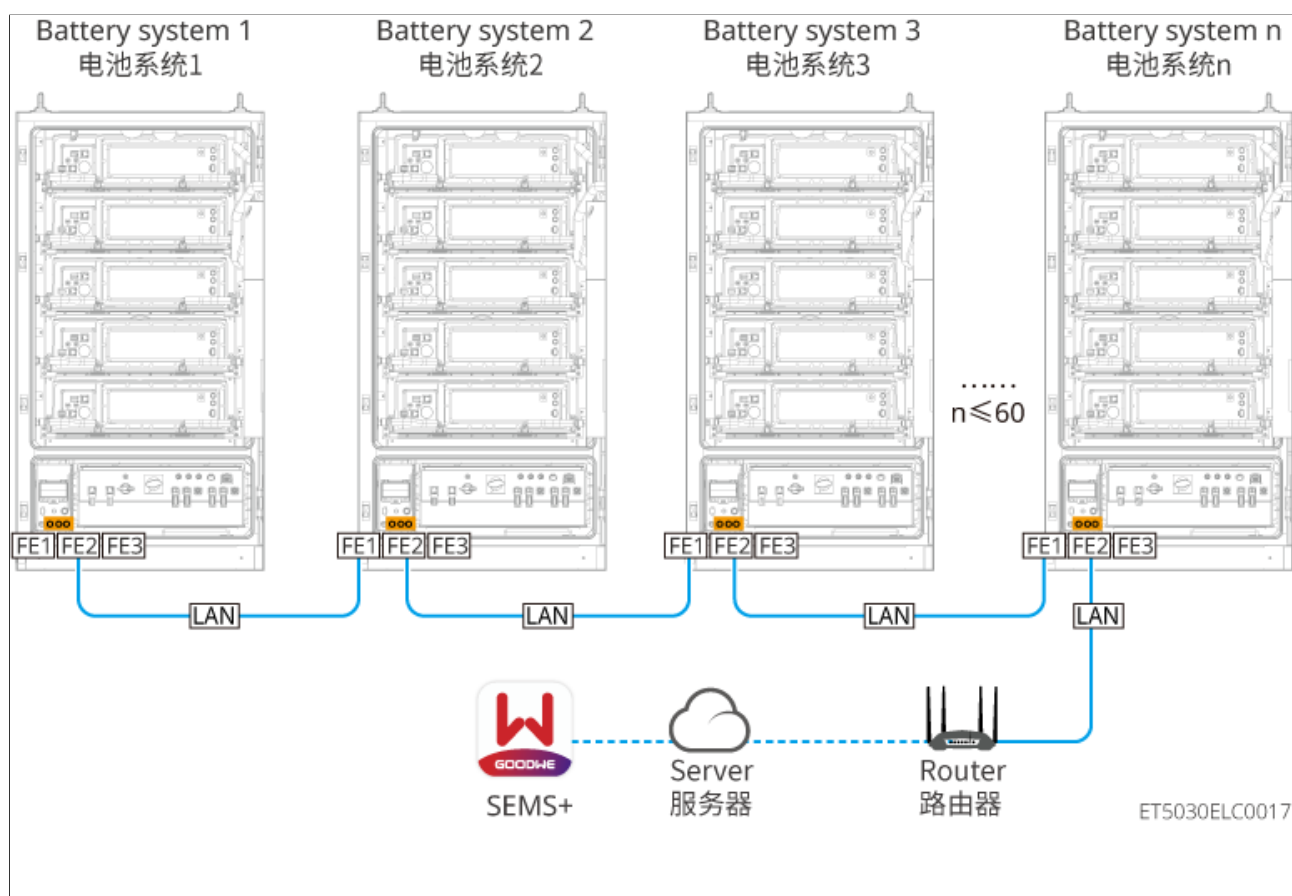


Figure15 Communication Diagram: BAT-C GW 208.9 kWh C&I Battery System

## 6 System Power-On

### WARNING

Before powering on a BAT Series 61.4–112.6 kWh C&I battery system, ensure that the battery EPO switch is released. To release it, turn the EPO switch clockwise.



### NOTE

When the PV system is not generating power and the grid is abnormal, if the inverter cannot operate normally, the battery black-start function can be used to force the battery to discharge and start the inverter. The inverter can then operate in off-grid mode, with the battery supplying power to the loads.

- Black-start procedure for BAT Series 25.6–56.3 kWh high-voltage battery systems: After closing the molded-case circuit breaker, the RUN indicator  flashes, and the FAULT indicator  remains off. Press and hold RUN  for 5 seconds. If you hear the contactor close and RUN  turns solid, the black start is successful. If the RUN indicator  continues flashing and the FAULT indicator  remains off, the black start has failed. After a failed black start, press and hold RUN  for 5 seconds to repeat the procedure. If it fails again, contact GoodWe After-Sales Service.
- For the black-start procedure for BAT Series 61.4–112.6 kWh C&I battery systems, see the power-on and power-off steps.
- For the black-start procedure for BAT-C Series 208 kWh C&I battery systems, see the power-on and power-off steps.

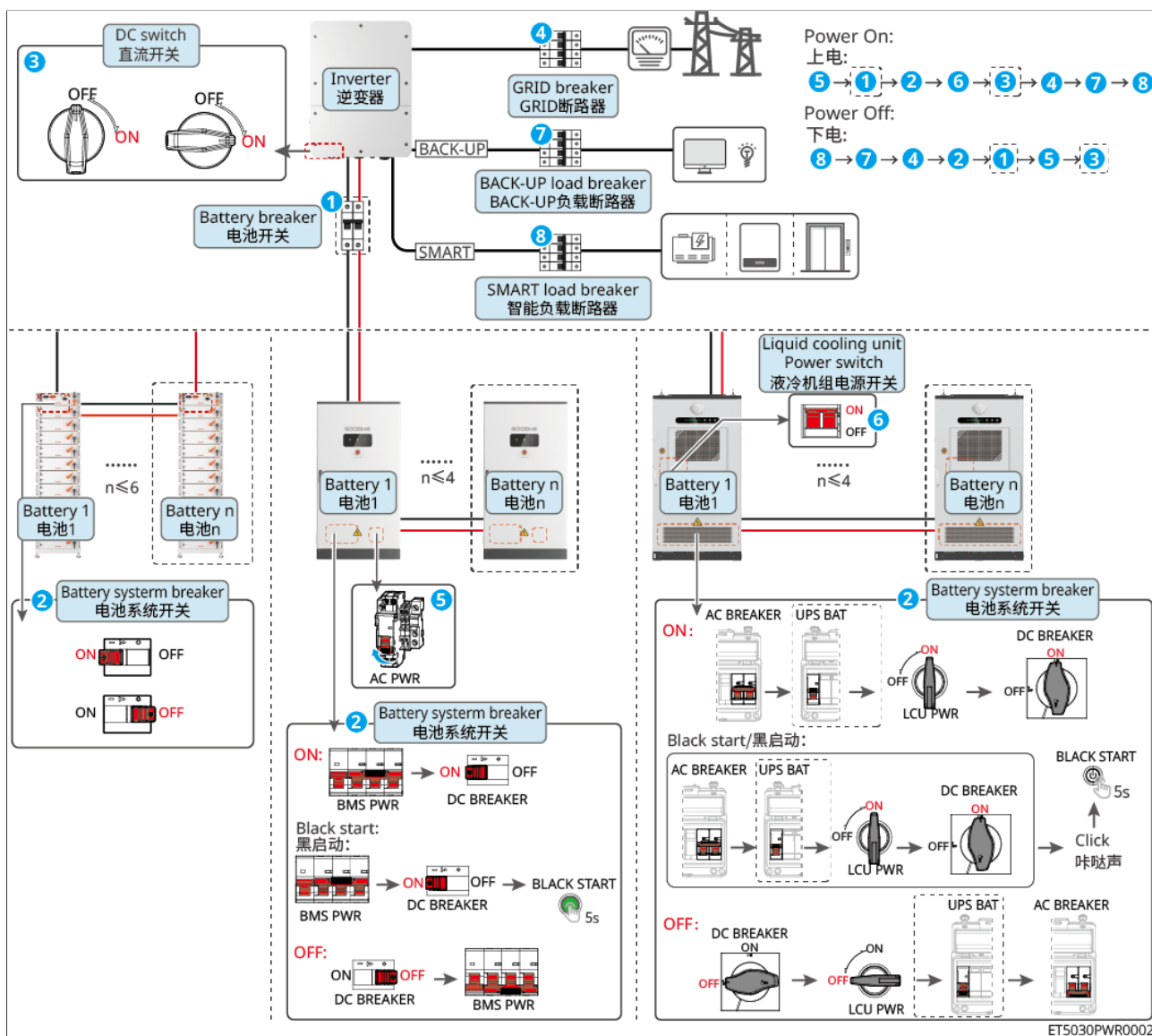


Figure16 System Power-On Procedure

1. (Battery optional) BAT Series 61.4–112.6 kWh C&I battery system: Release the battery EPO switch.
2. (Select according to local regulations) Close the switch between the inverter and the battery.
3. Start the battery system.
4. (Battery optional) BAT-C Series 208 kWh C&I battery system: Set the power switch of the battery liquid-cooling unit to ON.
5. Close the inverter DC Switch.
6. Close the GRID circuit breaker of the main inverter.
7. Close the BACK-UP circuit breaker.

8. (Optional) Close the SMART circuit breaker.

# 7 System Commissioning and Plant Monitoring

## 7.1 Configuration via the LCD

### 7.1.1 LCD Overview

#### NOTE

- The screen interfaces shown in this manual are for illustrative purposes only and may change as products are updated or firmware versions are revised. If the information in this manual differs from what is displayed on the device screen, follow the actual display on the device.
- The information displayed on the device screen and the parameters and functions available for configuration may vary depending on the device model and type, the Safety Regulation standards and grid-connection requirements in the country/region of use, the firmware version, and the actual configuration.
- The device screen supports viewing and configuring only some parameters and functions. For additional settings, use the SEMS+ App.
- Some function menu options are grayed out, indicating that the function is unavailable under the current conditions. Please confirm whether the current model/firmware version supports this function.

Using the LCD screen, users can:

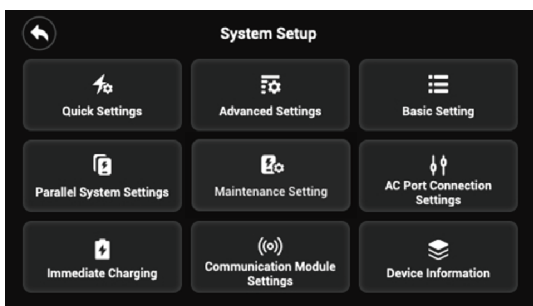
1. View operating data, software version, alarm information, and more.
2. Set parameters, safety code region, Power Limit, and more.

#### LCD Interface Overview

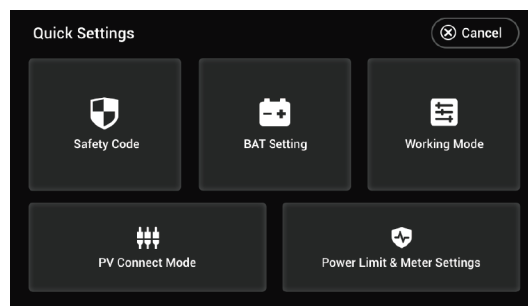
The LCD supports both touch operation and operation via buttons.



SYSCON0031



SYSCON0032



SYSCON0026

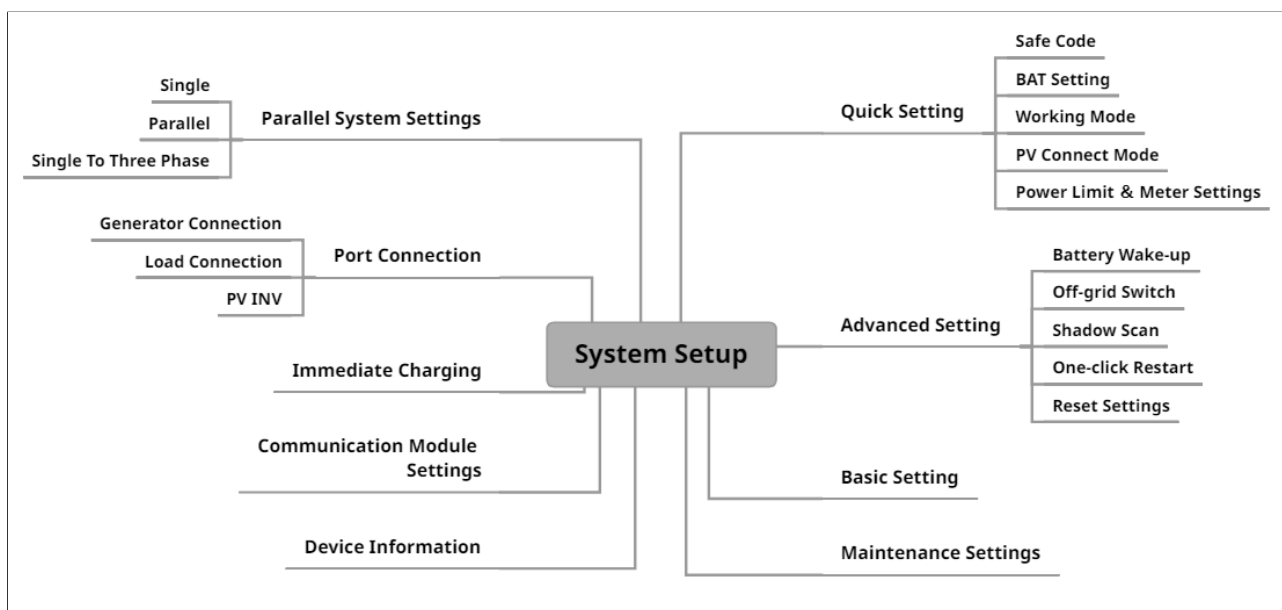
## Inverter Operating Status Descriptions

|                             |                     |             |
|-----------------------------|---------------------|-------------|
|                             |                     |             |
| Inverter operating normally | Inverter in standby | Fault alarm |

| Name/Icon | Description |
|-----------|-------------|
|           | Up          |
|           | Down        |
|           | Confirm     |

| Name/Icon                                                                                                                                                              | Description                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                       | <ul style="list-style-type: none"> <li>• Short press: Exit the page</li> <li>•  and  Press and hold simultaneously for 5 s: Restart the device</li> </ul> |
|                                                                                       | Used to view PV current, voltage, Energy Generation, and other information                                                                                                                                                                                                                                                  |
|                                                                                       | Used to view the battery model, status, and other information                                                                                                                                                                                                                                                               |
| <br> | Used to view inverter alarm and fault information                                                                                                                                                                                                                                                                           |
|                                                                                       | Press and hold for 3 s to enter the inverter settings interface                                                                                                                                                                                                                                                             |
|                                                                                     | Used to view grid-side parameter information                                                                                                                                                                                                                                                                                |
|                                                                                     |                                                                                                                                                                                                                                                                                                                             |
|                                                                                     |                                                                                                                                                                                                                                                                                                                             |
|                                                                                     |                                                                                                                                                                                                                                                                                                                             |
|                                                                                     |                                                                                                                                                                                                                                                                                                                             |
|                                                                                     | Return to the main screen                                                                                                                                                                                                                                                                                                   |
| Cancel                                                                                                                                                                 | Return to the previous menu                                                                                                                                                                                                                                                                                                 |
| Next                                                                                                                                                                   | Go to the next settings page                                                                                                                                                                                                                                                                                                |
| Back                                                                                                                                                                   | Return to the previous settings page                                                                                                                                                                                                                                                                                        |

## LCD Settings Menu Structure



| Function Overview | Functions/Options            | Function Description                                                                           |
|-------------------|------------------------------|------------------------------------------------------------------------------------------------|
| Quick Setting     | Safe Code                    | Set Safety Code                                                                                |
|                   | BAT Setting                  | Set Battery Parameters                                                                         |
|                   | Working Mode                 | Set Operating Mode                                                                             |
|                   | PV Connect Mode              | Set PV Access Mode                                                                             |
|                   | Power Limit & Meter Settings | Set Grid-Tied Power Limit and Meter Connect Check                                              |
| Advanced Setting  | Battery Wake-up              | Wake Up Battery<br>Note: Settings are not supported on some models. Refer to the actual model. |
|                   | Off-grid Switch              | Off-Grid Switch                                                                                |
|                   | Shadow Scan                  | Shadow Scan                                                                                    |
|                   | One-click Restart            | One-Touch Restart                                                                              |
|                   | Reset Settings               | Restore Factory Settings                                                                       |
| Basic Setting     | /                            | Set General Data                                                                               |

| Function Overview             | Functions/Options      | Function Description                                                                                                                                                                       |
|-------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maintenance Settings          | /                      | Set Maintenance Status                                                                                                                                                                     |
| Parallel System Settings      | Single                 | Set Single-Unit Scenario                                                                                                                                                                   |
|                               | Parallel               | Set Parallel Operation Scenario                                                                                                                                                            |
|                               | Single To Three Phase  | Single-Phase to Three-Phase Scenario<br>Note: Supported only by some single-phase models. Refer to the actual model.                                                                       |
| Port Connection               | Generator Connection   | Set Port Connection to Generator                                                                                                                                                           |
|                               | Load Connection        | Set Port Connection for Load Control                                                                                                                                                       |
|                               | PV Inverter Connection | Set Port Connection to Grid-Tied Inverter                                                                                                                                                  |
| Immediate Charging            | /                      | Set Immediate Charging                                                                                                                                                                     |
| Communication Module Settings | /                      | Set Communication Module<br>Note: This function is available only for inverters with a built-in wireless module. For external modules, configure the relevant settings through the module. |
| Device Information            | /                      | View Device Information                                                                                                                                                                    |

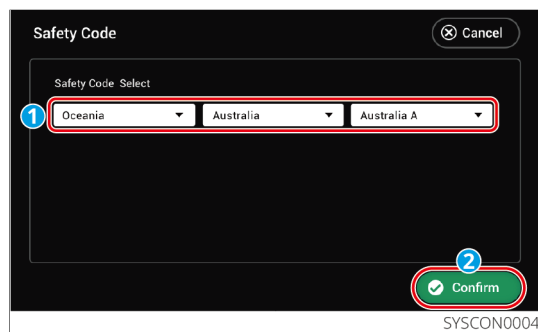
### 7.1.2 Quick Settings

## NOTE

Click Confirm on every page. When the prompt "Are you sure to confirm?" appears, select YES to apply the parameters. Otherwise, the system will operate with the default parameters.

### Set Safety Code

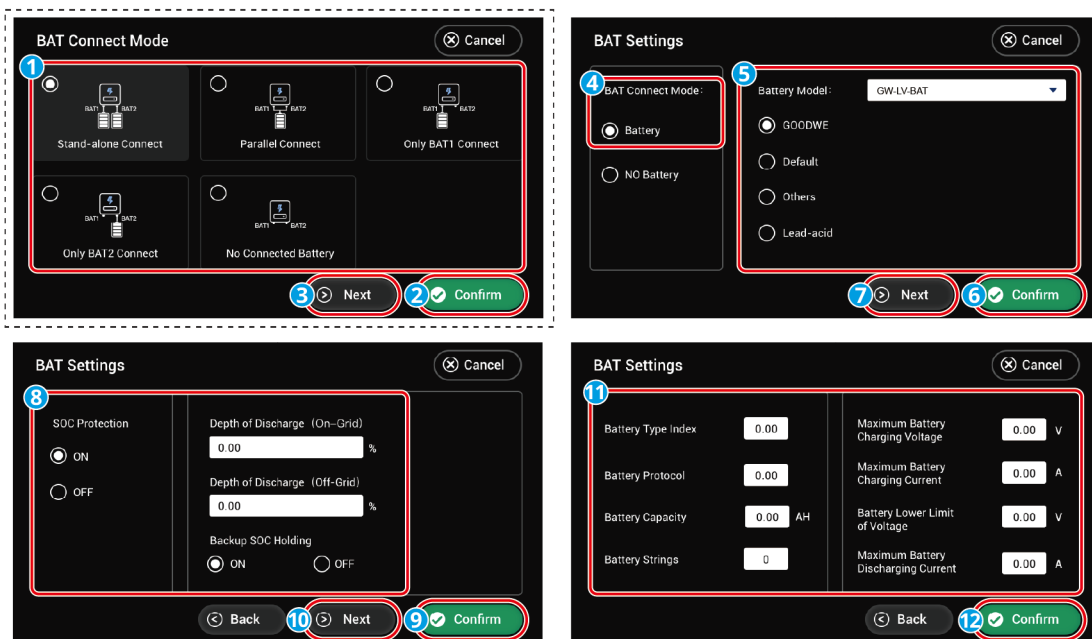
1. On the home screen, tap  > Quick Settings > Safe Code to open the parameter settings screen.
2. Select the safety code for the country or region where the device is located.
3. After completing the settings, tap Confirm > YES to apply the parameters.



1.

### Set Battery Parameters

1. From the main interface, press and hold for 3 seconds  > Quick Settings > BAT Settings to enter the parameter settings interface.
2. Configure the parameters according to your system. Dual-battery access mode is available only on certain models; refer to the actual model.
3. After completing the settings, tap Confirm > YES to apply the parameters.



SYSCON0005

## Battery Connection Mode Settings

| Battery Connection Mode | Description                                                                                                                                                     |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stand-alone Connect     | For an inverter with two battery ports, connect a different battery to each port. In this mode, configure the parameters for each connected battery separately. |
| Parallel Connect        | For an inverter with two battery ports, connect both ports to the same battery.                                                                                 |
| Only BAT1 Connect       | For an inverter with two battery ports, connect only the BAT1 port.                                                                                             |
| Only BAT2 Connect       | For an inverter with two battery ports, connect only the BAT2 port.                                                                                             |
| No Connected Battery    | No battery is connected to the system.                                                                                                                          |

| BAT Connection Mode | Battery Type | Description                                                                                                                                                                                                                                                         |
|---------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BAT Model           | GOODWE       | <p>If the system is connected to a GoodWe lithium battery, select GOODWE and then make the appropriate selection:</p> <ul style="list-style-type: none"> <li>• GW-LV-BAT: Low-voltage lithium battery</li> <li>• GW-HV-BAT: High-voltage lithium battery</li> </ul> |
|                     | Default      | <p>If the third-party lithium battery model connected to the system is not listed here, make the appropriate selection:</p> <ul style="list-style-type: none"> <li>• Default (Lithium 50Ah)</li> <li>• Default (Lithium 100Ah)</li> </ul>                           |
|                     | Others       | If the third-party lithium battery model connected to the system is listed here, select the correct model.                                                                                                                                                          |
|                     | Lead acid    | If the system is connected to a lead-acid battery, select Lead acid and choose the correct lead-acid type. GEL, AGM, and Flooded are currently supported.                                                                                                           |

### Battery Parameter Settings

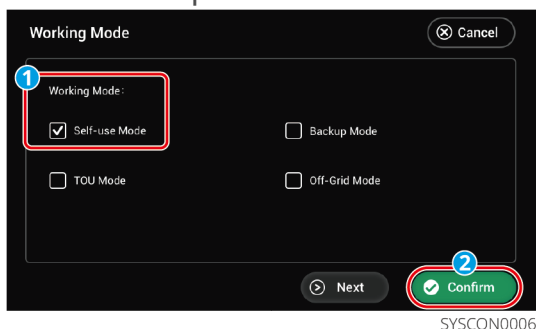
| Parameter Name            | Description                                                                                                                                                                                            |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SOC Protection            | When enabled, battery protection can be activated when the battery capacity falls below the configured depth of discharge.                                                                             |
| On-Grid SOC Lower Limit   | The maximum value at which the battery is allowed to discharge while the inverter is operating in grid-connected mode.                                                                                 |
| Off-Grid SOC Lower Limit  | The maximum battery discharge level allowed when the inverter is operating off-grid.                                                                                                                   |
| Backup Capacity Retention | To ensure that the battery SOC is sufficient for normal system operation while off-grid, the battery is charged from the grid or PV to the set SOC protection value when the system is grid-connected. |

| Parameter Name                      | Description                                                                                                                                                                             |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Battery Type Index                  | Set this according to the battery specifications.                                                                                                                                       |
| Battery Protocol                    | Set this according to the battery specifications.                                                                                                                                       |
| Maximum Battery Charging Voltage    | Battery charging defaults to constant-voltage charging mode;<br>Set the maximum charging voltage and Charging Current for this mode; set these according to the battery specifications. |
| Maximum Battery Charging Current    |                                                                                                                                                                                         |
| Battery Capacity                    | Set the battery capacity according to the specifications of the connected battery.                                                                                                      |
| Battery Lower Limit Of Voltage      | Set this according to the battery specifications.                                                                                                                                       |
| Battery Strings                     | Set this according to the actual number of battery strings.                                                                                                                             |
| Maximum Battery Discharging Current | Set this according to the battery specifications. The higher the discharge current, the shorter the battery operating time.                                                             |

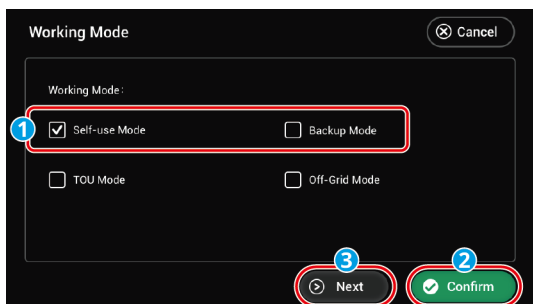
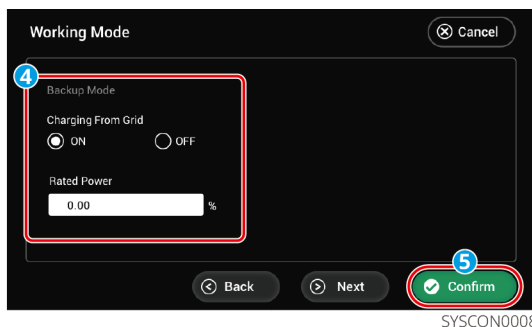
## Set Operating Mode

1. From the main interface, press and hold for 3 seconds  > Quick Settings > Working Mode to access the parameter settings screen.
2. Set this according to the actual requirements.
3. After completing the settings, tap Confirm > YES to apply the parameters.

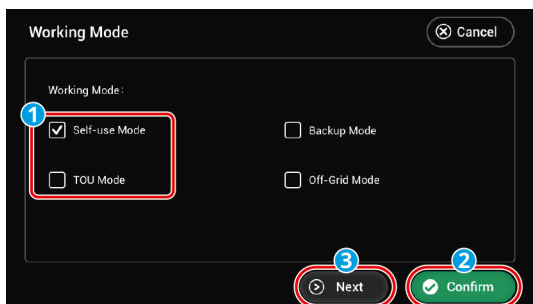
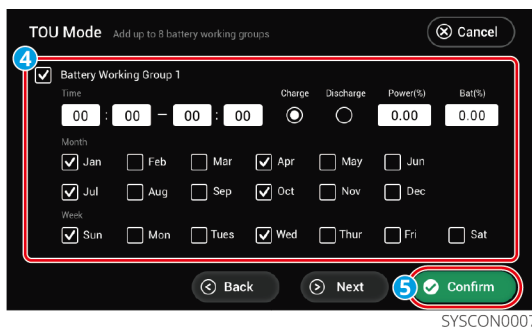
### Self-consumption



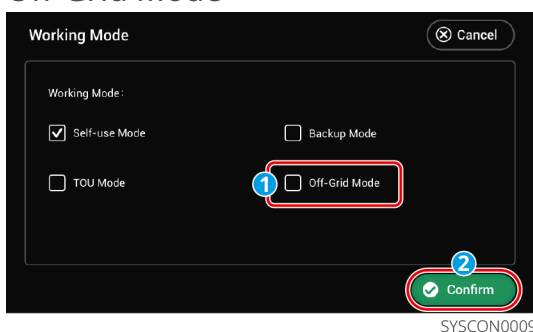
### Backup Mode



## TOU Mode



## Off-Grid Mode

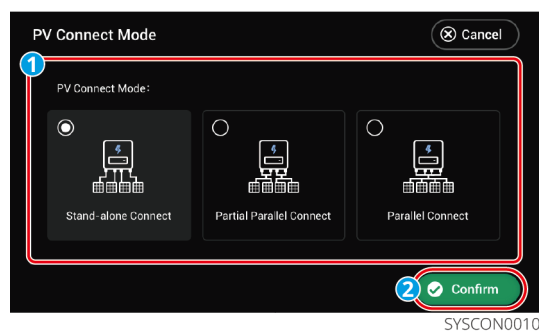


| Parameter Name |                    | Description                                                                                                                                                                                                                |
|----------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Self-use Mode  |                    | When Working Mode Settings is set to Self-use Mode, Back-up Mode, TOU Mode, and Off-Grid Mode can also be enabled. Select modes as needed. Working mode priority: Off-Grid Mode > Back-up Mode > TOU Mode > Self-use Mode. |
| Back-up Mode   | Charging From Grid | Enable this function to allow the system to purchase electricity from the grid.                                                                                                                                            |
|                | Rated Power        | The power used to purchase electricity, expressed as a percentage of the inverter's Rated Power.                                                                                                                           |

| Parameter Name |                  | Description                                                                                                                                                                                                                           |
|----------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TOU Mode       | Time             | During the period between the start time and End Time, the battery charges or discharges according to the selected charge/discharge mode and Rated Power.                                                                             |
|                | Charge/Discharge | Set this to charging or discharging according to actual requirements.                                                                                                                                                                 |
|                | Power (%)        | The charging or discharging power, expressed as a percentage of the inverter's Rated Power.                                                                                                                                           |
|                | Bat (%)          | Charging stops when the battery reaches the set SOC.<br>To set the battery discharge stop SOC, refer to the <b>Set Battery Parameters</b> section and use the LCD screen to set On-Grid SOC Lower Limit and Off-Grid SOC Lower Limit. |
| Off-Grid Mode  |                  | In Off-Grid Mode, the inverter disconnects from the grid and supplies power only to the BACK-UP loads, with any surplus energy used to charge the battery.                                                                            |

## Set PV Access Mode

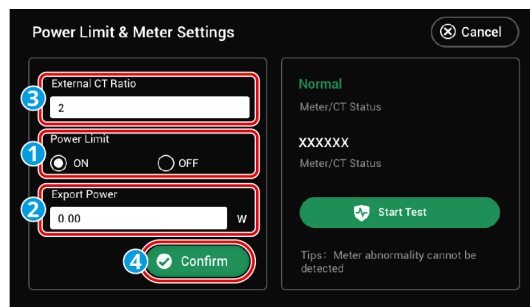
1. From the main interface, press and hold for 3 seconds  > Quick Settings > PV Connect Mode to access the parameter settings screen.
2. Set this according to the actual requirements.
3. After completing the settings, tap Confirm > YES to apply the parameters.



| Parameter Name           | Description                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Stand-alone Connect      | Each PV string is connected to a corresponding MPPT port on the inverter.                                                                         |
| Partial Parallel Connect | One PV string is connected to multiple MPPT ports on the inverter, while other PV modules are also connected to other MPPT ports on the inverter. |
| Parallel Connect         | When external PV strings are connected to the inverter's PV input ports, one PV string is connected to multiple PV input ports.                   |

### Set the grid power limit

1. From the main interface, press and hold for 3 seconds  > Quick Settings > Power Limit & Meter Settings to access the parameter settings screen.
2. Set this according to the actual requirements. Some models do not support setting a grid power limit; refer to the actual model.
3. After completing the settings, tap Confirm > YES to apply the parameters.

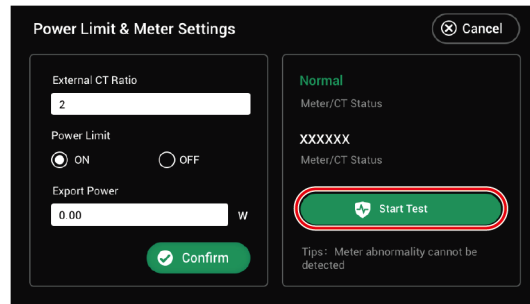


SYSCON0011

| Parameter Name    | Description                                                                                                           |
|-------------------|-----------------------------------------------------------------------------------------------------------------------|
| Power Limit       | Enable this function when output power must be limited to comply with grid standards in certain countries or regions. |
| Export Power      | Set this value according to the maximum power that can actually be fed into the grid.                                 |
| External CT Ratio | Set this to the ratio of the primary-side current to the secondary-side current of the external CT.                   |

### Meter Settings

1. From the main interface, press and hold for 3 seconds  > Quick Settings > Power Limit & Meter Settings to access the parameter settings screen.
2. Tap Start Test to begin testing. After the test is complete, determine the result according to the on-screen prompts.



SYSCON0012

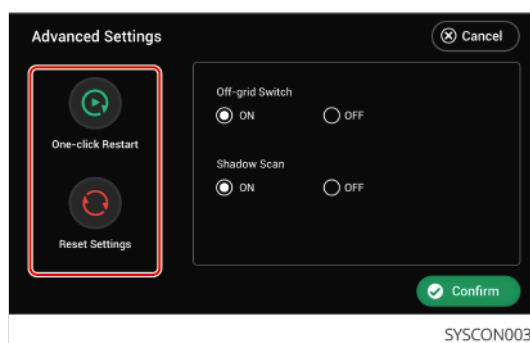
### 7.1.3 Configure Advanced Parameters

#### NOTE

Click Confirm on every page. When the prompt "Are you sure to confirm?" appears, select YES to apply the parameters. Otherwise, the system will operate with the default parameters.

#### One-Touch Restart and Parameter Reset

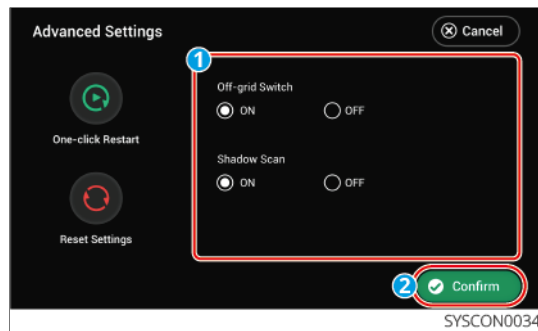
1. From the main interface, press and hold for 3 seconds  > Advanced Settings to access the parameter settings screen. Enter the default password: 1111.
2. Set this according to the actual requirements.
3. After configuration, wait briefly as prompted on the screen for the settings to take effect.



SYSCON0035

## Off-Grid Switch and Shadow Scanning

1. From the main interface, press and hold for 3 seconds  > Advanced Settings to access the parameter settings screen. Enter the default password: 1111.
2. Set this according to the actual requirements.
3. After completing the settings, tap Confirm > YES to apply the parameters.



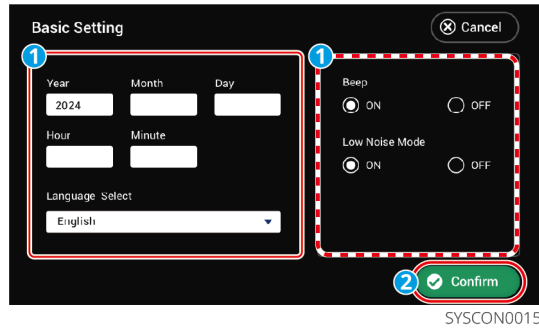
| Parameter Name    | Description                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| One-click restart | Use this function to quickly restart the inverter.                                                                                                                                                                                                                                                                                                                                                                    |
| Reset Settings    | Use this function to restore the inverter to factory settings.                                                                                                                                                                                                                                                                                                                                                        |
| Off-grid Switch   | <p>In off-grid mode, the off-grid control switch turns the inverter's off-grid function on or off. This function is inactive in grid-connected mode.</p> <p>The switch is ON by default, enabling off-grid operation. When the inverter powers on, it enables off-grid output. While operating off-grid, turning the switch off and then back on clears the off-grid overload timer and restarts off-grid output.</p> |
| Shadow Scan       | When PV panels are heavily shaded, enabling shadow scanning can optimize the inverter's power generation Efficiency.                                                                                                                                                                                                                                                                                                  |

### 7.1.4 Set General Data

#### NOTE

Click Confirm on every page. When the prompt "Are you sure to confirm?" appears, select YES to apply the parameters. Otherwise, the system will operate with the default parameters.

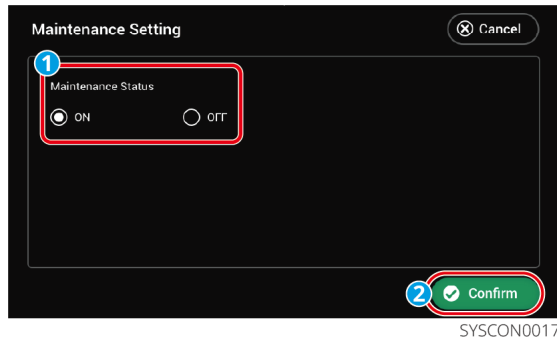
1. From the main interface, press and hold for 3 seconds  > Basic Settings to access the parameter settings screen.
2. Set this according to the actual requirements.
3. After completing the settings, tap Confirm > YES to apply the parameters.



| Parameter Name             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Year/Month/Day/Hour/Minute | Set the system time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Language Select            | Set the screen language.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Beep                       | <p>Enable or disable the buzzer alarm function as required. This option is not available on the screens of devices that do not support buzzer alarms.</p> <ul style="list-style-type: none"> <li>• ON: When enabled, the buzzer sounds and a red fault indicator appears on the screen if the inverter encounters a critical fault.</li> <li>• OFF: When disabled, the buzzer does not sound and no fault notification appears on the screen if the inverter encounters a critical fault.</li> </ul> |

### 7.1.5 Set Maintenance Status

1. From the main interface, press and hold for 3 seconds  > Maintenance Settings to enter the parameter settings screen.
2. Configure according to actual requirements.
3. After completing the settings, tap Confirm > YES to apply the parameters.



| Parameter Name      |                    | Description                                                                                                                                         |
|---------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Maintenance Setting | Maintenance Status | Maintenance state settings: During device maintenance, the AC output can be disconnected to put the device in standby mode.                         |
|                     | ON                 | Inverter shutdown: Disconnects the inverter's AC output and prevents PV from charging the battery.                                                  |
|                     | OFF                | Inverter startup: The system is operational, and the inverter is allowed to provide AC output and PV input, and to charge or discharge the battery. |

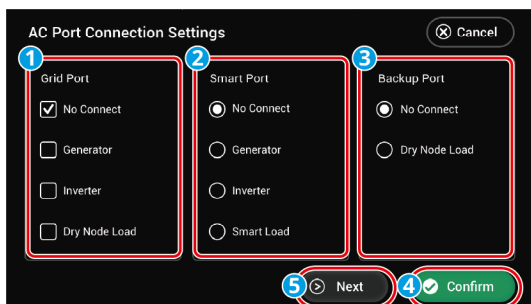
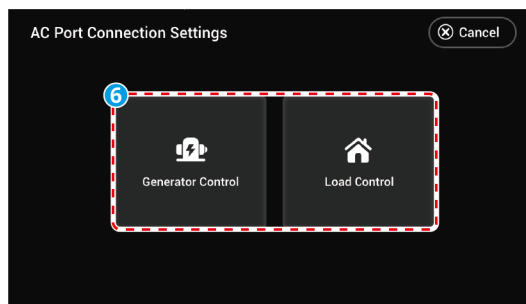
## 7.1.6 Configure Port Connections

### NOTE

- Click Confirm on every page. When the prompt "Are you sure to confirm?" appears, select YES to apply the parameters. Otherwise, the system will operate with the default parameters.
- In microgrid mode, connect to the app to configure parameters for the grid-tied inverter, if required.

### AC Port Settings Main Page

1. From the main interface, press and hold for 3 seconds  > AC Port Connection Settings to enter the parameter settings interface.
2. Select the devices connected to the ports based on the actual configuration.
3. After completing the settings, tap Confirm > YES to apply the parameters.



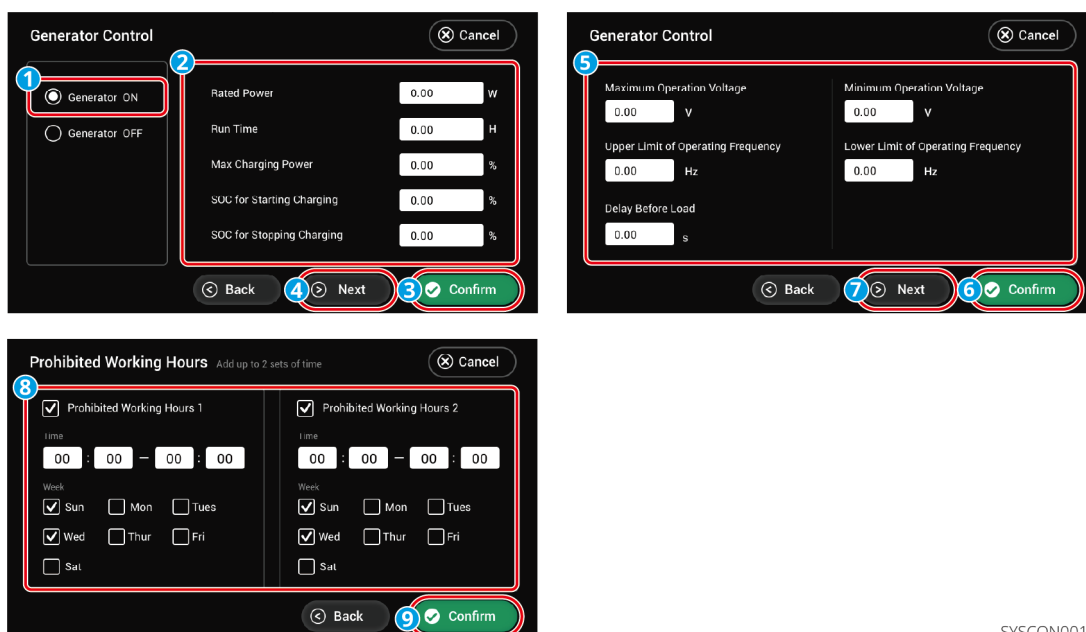
SYSCON0022

| Parameter Name |               | Description                                                                                                                          |
|----------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Grid Port      | No Connect    | No connection on the grid side. Only one option can be selected.                                                                     |
|                | Generator     | Generator connected on the grid side. Only one option can be selected.                                                               |
|                | Inverter      | Grid-tied inverter connected on the grid side. The grid-side grid-tied inverter and dry contact load can be selected simultaneously. |
|                | Dry Node Load | Dry contact load connected on the grid side. The grid-side grid-tied inverter and dry contact load can be selected simultaneously.   |
| Smart Port     | No Connect    | No connection to the smart port. Only one option can be selected.                                                                    |
|                | Generator     | Generator connected to the smart port. Only one option can be selected.                                                              |
|                | Inverter      | Grid-tied inverter connected to the smart port. Only one option can be selected.                                                     |
|                | Smart Load    | Smart load connected to the smart port. Only one option can be selected.                                                             |
| Backup Port    | No Connect    | No connection to the Backup port. Only one option can be selected.                                                                   |
|                | Dry Node Load | Dry contact load connected to the Backup port. Only one option can be selected.                                                      |

## Set Port Connection to Generator

1. From the main interface, press and hold for 3 seconds  > AC Port Connection Settings to enter the parameter settings interface.
2. Set this according to the actual requirements.

3. After completing the settings, tap Confirm > YES to apply the parameters.



SYSCON0018

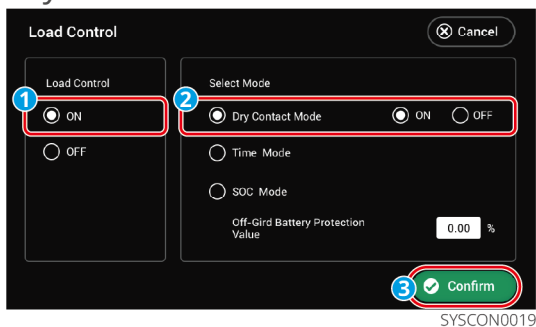
| Parameter Name            | Description                                                                                                                                                                                          |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Generator ON/OFF          | Control the generator start and stop. Applies only to generators that support dry contact control.                                                                                                   |
| Rated Power               | Rated Power of the generator.                                                                                                                                                                        |
| Run Time                  | The generator's continuous operating time. The generator will automatically shut down once the set operating time is exceeded. This function applies only to generators connected via a dry contact. |
| Max Charging Power        | Set the Max. Charging Power for charging the battery from the generator.                                                                                                                             |
| SOC for Starting Charging | Set the start-of-charging SOC for charging the battery from the generator. The generator will charge the battery when the battery SOC falls below the set value.                                     |
| SOC for Stopping Charging | Set the SOC at which the generator stops charging the battery. The generator will stop charging the battery when the battery SOC reaches the set value.                                              |
| Maximum Operation Voltage | Set the upper operating voltage limit of the generator.                                                                                                                                              |

| Parameter Name                     | Description                                                                        |
|------------------------------------|------------------------------------------------------------------------------------|
| Minimum Operation Voltage          | Set the lower operating voltage limit of the generator.                            |
| Upper Limit Of Operating Frequency | Set the upper operating frequency limit of the generator.                          |
| Lower Limit Of Operating Frequency | Set the lower operating frequency limit of the generator.                          |
| Delay Before Load                  | The no-load warm-up time before the generator supplies a load.                     |
| Prohibited Working Hours           | Set the generator's prohibited operating periods according to actual requirements. |

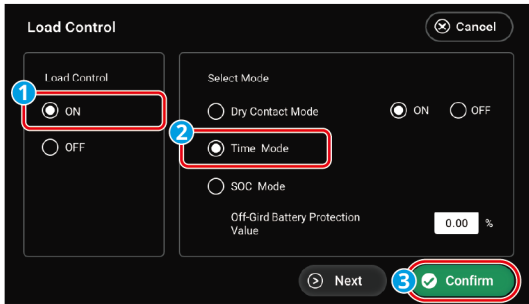
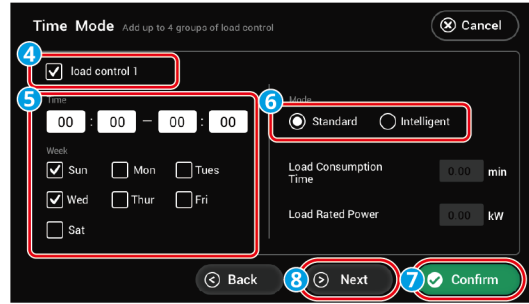
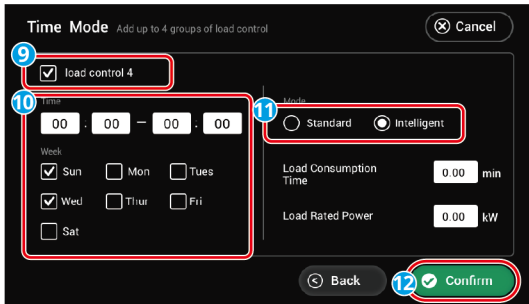
## Set Port Connection for Load Control

1. From the main interface, press and hold for 3 seconds  > AC Port Connection Settings to enter the parameter settings interface.
2. Set this according to the actual requirements.
3. After completing the settings, tap Confirm > YES to apply the parameters.

### Dry Contact Mode

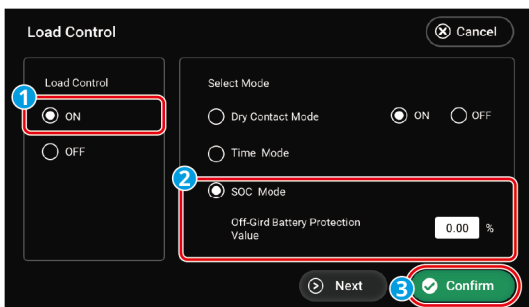


### Time Mode



SYSCON0021

## SOC Mode



SYSCON0020

| Parameter Name      | Description                                                                                                                                 |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Load Control ON/OFF | Set the load control function to on/off                                                                                                     |
| Dry Contact Mode    | ON: When the switch status is set to ON, power is supplied to the load<br>OFF: When the switch is set to OFF, power to the load is cut off. |
| Time Mode           | During the set time period, the load will be automatically powered on or off. Standard Mode or Smart Mode can be selected.                  |
| Load Control        | Set the load control schedule. Up to 4 time periods can be configured.                                                                      |

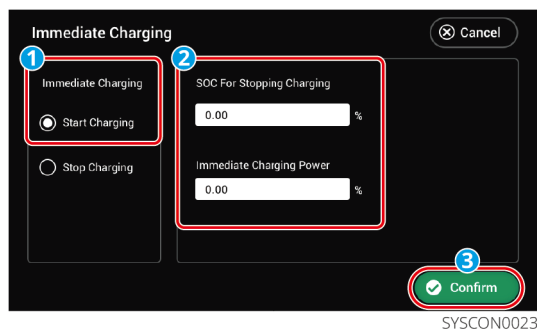
| Parameter Name                    | Description                                                                                                                                                                                                                                                                         |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Mode: Standard/Intelligent        | Standard Mode: The load will be powered during the set time period.<br>Smart Mode: During the set time period, the load will be powered when the surplus energy generated by the PV system exceeds the preset Rated Power of the load.                                              |
| Load Consumption Time             | The minimum run time after the load is switched on, to prevent frequent switching due to energy fluctuations. Only applicable to Smart Mode.                                                                                                                                        |
| Load Rated Power                  | The load will be powered when the surplus energy generated by the PV system exceeds its Rated Power. Only applicable to Smart Mode.                                                                                                                                                 |
| SOC Mode                          | The inverter has a built-in relay dry contact control port, which can be used to control the power supply to the load.                                                                                                                                                              |
| Off-Grid Battery Protection Value | In off-grid mode, power to the load connected to the relay port can be cut off if an Overload is detected at the BACK-UP port or the battery SOC falls below the off-grid battery Protection threshold. Set the off-grid battery Protection value according to actual requirements. |

### 7.1.7 Set Immediate Charging

#### NOTE

Click Confirm on every page. When the prompt "Are you sure to confirm?" appears, select YES to apply the parameters. Otherwise, the system will operate with the default parameters.

1. From the main interface, press and hold for 3 seconds  > Immediate Charging to access the parameter settings screen.
2. Set this according to the actual requirements.
3. After completing the settings, tap Confirm > YES to apply the parameters.



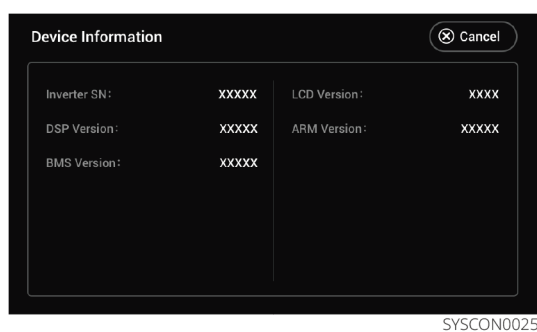
| Parameter Name            | Description                                                                                                                                                                                                                        |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Immediate Charging        | When enabled, the battery is charged immediately from the grid. This takes effect for one time only. Enable or stop the function as required.                                                                                      |
| SOC For Stopping Charging | When Immediate Charging is enabled, battery charging stops when the battery SOC reaches the charge cut-off SOC.                                                                                                                    |
| Immediate Charging Power  | When Immediate Charging is enabled, this is the charging power as a percentage of the inverter's Rated Power.<br>For example, for an inverter with a Rated Power of 10 kW, setting this to 60 results in a charging power of 6 kW. |

## 7.1.8 View Device Information

### NOTE

View the inverter serial number, DSP version, BMS version, LCD version, and ARM version.

1. From the main interface, press and hold for 3 seconds  > Device Information to access the parameter query screen.



## 7.2 Use the SEMS+ App for Device Commissioning and Plant Monitoring

The SEMS+ App is software used for remote plant monitoring or on-site device commissioning. It supports installers and plant owners:

- Monitor plant operation remotely and set operating parameters for the plant and devices.
- Connect to devices on site to view device operation and set device parameters.

### Download and Install the SEMS+ App

Phone requirements:

- Phone operating system requirements: Android 7.0 or later, iOS 15.1 or later.
- The phone supports a web browser and can connect to the Internet.
- The phone supports WLAN/Bluetooth.

Download methods:

Method 1:

Search for SEMS+ in the Google Play, App Store, Huawei, Honor, Xiaomi, OPPO, and vivo app stores to download and install it.



Method 2:

Scan the QR code below to download and install it.



For detailed functions, see the [SEMS+ App User Manual](#). The user manual can be obtained from the official website or by scanning the QR code below.



SEMS+ App User Manual

## 7.3 Device Commissioning and Plant Monitoring via SEMS+ WEB

SEMS+ WEB is a monitoring platform that can communicate via WiFi or LAN. The following are common functions of SEMS+ WEB:

1. Manage organization or user information, etc.
2. Add and monitor plant information, etc.
3. Maintain devices.

For detailed functions, please refer to the [SEMS+ WEB User Manual](#).



SEMS+ WEB User Manual

## 8 Solution Document Map

|                                                                           |                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BAT-C 208.9-261.2kWh Commercial and Industrial Battery System User Manual | <a href="https://admin.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_BAT-C-208-261kWh_User-Manual-EN.pdf">https://admin.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_BAT-C-208-261kWh_User-Manual-EN.pdf</a>             |
| BAT-S Series 25.6-56.3kWh Quick Installation Guide                        | <a href="https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_BAT-Series_Quick-Installation-Guide-POLY.pdf">https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_BAT-Series_Quick-Installation-Guide-POLY.pdf</a> |
| BAT Series 61.4-112.6kWh Quick Installation Guide                         | <a href="https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_BAT100kWh_Quick-Installation-Guide-POLY.pdf">https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_BAT100kWh_Quick-Installation-Guide-POLY.pdf</a>   |

## 9 Contact Information

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