# SigenStor Home Installation Guide

## Three-phase System
## A1

Version: 01
Release date: 2023-11-15

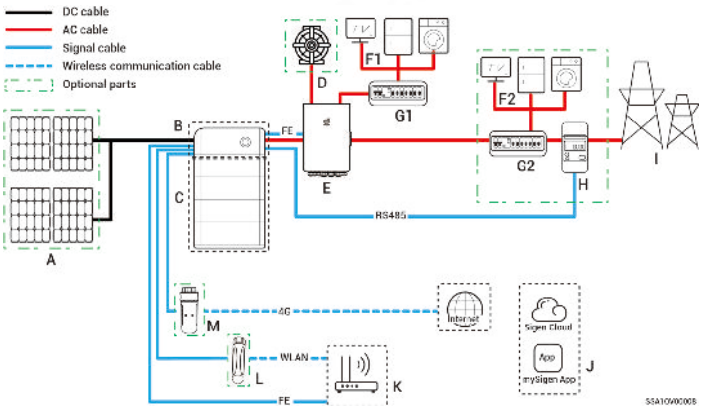
## Caution

- Trained or experienced electrical personnel are required to operate the equipment.
- Operators should be familiar with national/regional laws, regulations and standards, the structure and working principle of relevant systems.
- Please read carefully the operating requirements and precautions in this document and "Important Notice" before operating. Failure to do so may result in damage to the equipment that is not covered by the warranty.
- Please consult with the owner for expansion requirements (for example, adding battery packs) before operating. If any, please reserve necessary expansion space and cable length during installation.

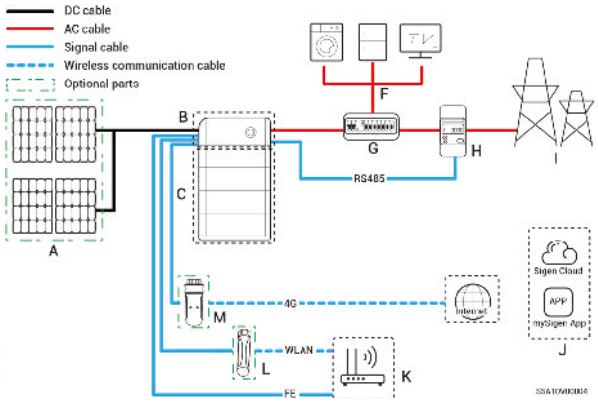
# 1 Introduction to Three-phase System

## 1.1 Introduction to Networking

**Backup networking**




**Non-backup networking**




## Tips

It is recommended to use FE and WLAN for communication with inverter. Sigen CommMod users must top up their own 4G data plan after a period of 2 years.

| S/N | Equipment/component | Model/version | Function specification |
|---|---|---|---|
| A | PV module | - | - |
| B | SigenStor EC | SigenStor EC 5.0/6.0/8.0/10.0/12.0/15.0/17.0/20.0/25.0 TP | Inverter; it can be used in photovoltaic energy storage scenarios and needs to be used together with PV modules and SigenStor BAT. |
| | SigenStor AC | SigenStor AC 5.0/6.0/8.0/10.0/12.0/15.0/17.0/20.0/25.0 TP | Inverter; it can be used in pure storage scenarios and needs to be used with SigenStor BAT. |
| | Sigen Hybrid | Sigen Hybrid 5.0/6.0/8.0/10.0/12.0/15.0/17.0/20.0/25.0 TP | Inverter; it can be used in conjunction with PV modules for pure PV applications or in combination with PV modules and SigenStor BAT for photovoltaic storage systems after the purchase and activation of a license. |
| C | SigenStor BAT | SigenStor BAT 5.0/8.0 | Battery pack; it can store electric energy. |
| D | Diesel generator | - | As a backup energy source for long-term off-grid applications, it can work in tandem with the Gateway to provide a smooth transition between PV, storage and diesel generation. |
| E | Gateway | Sigen Gateway HomeMax TP | It's applicable for PV storage and pure storage applications to facilitate data acquisition and monitoring, off-grid backup power switching, diesel generator control, energy management; it must be used with SigenStor BAT and inverter. Gateway is a must-have for backup networking; for partial backup power and zero-power grid connection control networking, the Gateway and power sensor must be arranged. |
| F | Electric equipment | - | In the backup networking, F1 is the electric equipment for backup; F2 is non-backup the electric equipment. |
| G | Distribution panel | - | In the backup networking, G1 is the backup Distribution panel; G2 is the non-backup Distribution panel.<br>The rated voltage of the AC switch connected to each inverter should be ≥ 380 Va.c, and the rated current is recommended:<br>• SigenStor EC/SigenStor AC/Sigen Hybrid (5.0–8.0) TP: The rated current is 20 A<br>• SigenStor EC/SigenStor AC/Sigen Hybrid (10.0–15.0) TP: The rated current is 32 A<br>• SigenStor EC/SigenStor AC/Sigen Hybrid (17.0–20.0) TP: The rated current is 40 A<br>• SigenStor EC/SigenStor AC/Sigen Hybrid 25.0 TP:The rated current is 50 A |

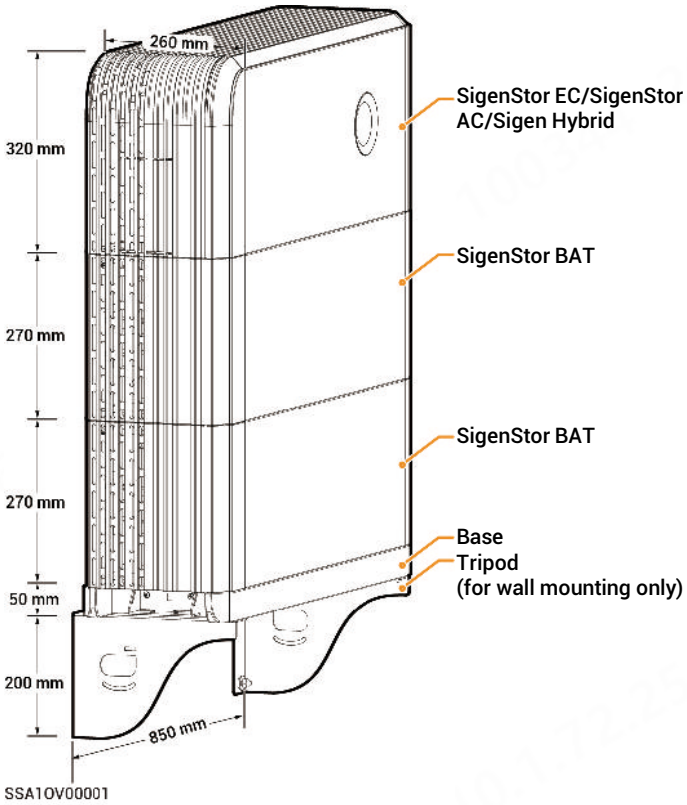
| S/N | Equipment/component | Model/version | Function specification |
|---|---|---|---|
| H | Power sensor | Sigen Sensor TP-DH（SDM630MODBUS V2）<br>Sigen Sensor TP-CT120-DH（SDM630MCT 40mA/120A）<br>Sigen Sensor TP-CT300-DH（SDM630MCT 40mA/300A）<br>Sigen Sensor TP-CT600-DH（SDM630MCT V2/600A） | Data acquisition for grid connection points enables zero-power grid connection. |
| I | Power grid | - | - |
| J | App | mySigen | Android 6.0 or later<br>iOS 12.0 onwards |
| K | Router | - | To be used for FE/WLAN communication. |
| L | Antenna | - | To be used for WLAN communication. |
| M | Communication module | Sigen CommMod | To be used for 4G communication. |

## Tips

For further information on the installation and wiring of Gateway, refer to the corresponding documentation.

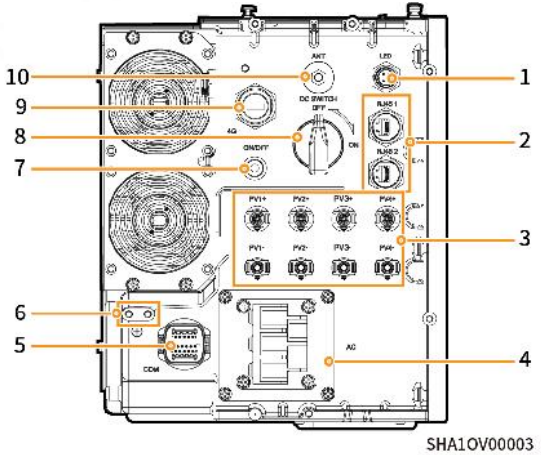
## 1.2 Appearance and Dimensions

**Inverter and battery pack**




## 1.3 Port Descriptions

**SigenStor EC/SigenStor AC/Sigen Hybrid Left View**




| S/N | Name | Marking |
|---|---|---|
| 1 | Decorative cover light strip connector | LED |
| 2 | Network interface | RJ45 1/ RJ45 2 |
| 3 | DC input interface | PV1+/PV2+/ PV3+/PV4+/ PV1-/PV2- /PV3-/PV4- |
| 4 | AC output interface | AC |
| 5 | Communication interface | COM |
| 6 | Ground screw | - |
| 7 | Switch button | ON/OFF |
| 8 | DC switch | DC SWITCH |
| 9 | Sigen CommMod interface | 4G |
| 10 | Antenna interface | ANT |

## 2 Pre-installation Check

- According to the packing list, check whether the components are complete and in good appearance. If any abnormality occurs, contact your sales agent in time.
- Check personal protective equipment and installation tools to ensure that they are complete; If not, please make them up.
- Check the customer-provided cable to ensure that the quantity and specifications are correct; if not, prepare again.

### Protective equipment


Safety hat


Goggles


Dust mask


Protective gloves


Insulating gloves


Insulating shoes

### Installation tool


Power drill


Heat gun


Wire cutter


Crimp tool


Crimping pliers


Wire stripper


Scissors

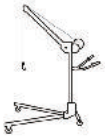

Cable tie


Heat shrinkable sleeve


Vacuum cleaner


Insulation screwdriver set


Insulation sleeve set


Lift (used when SigenStor BAT ≥3 units)


Stainless steel covered plastic steel rope (bearing: ≥250 kg Diameter: 3 mm)


Open-end wrench (model: H4TW0001 Manufacturer: Amphenol)


Crimping pliers (model: H4TC0003 Manufacturer: Amphenol)


Lock (Lock bar diameter ≤ 5 mm)

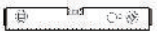

Marker


Torque socket wrench


Rubber mallet


hexagonal L-type wrench (4 mm oppositlly)


Tape measure


Level

Installer-provided cable

| S/N | Cable name | Recommended specifications |
|---|---|---|
| 1 | Protective ground cable of inverter housing | Outdoor single-conductor copper cable<br>Same as PE line for AC cable |
| 2 | AC cable | Outdoor five-conductor copper cable（L1、L2、L3、N、PE）<br>• SigenStor EC/SigenStor AC/Sigen Hybrid（5.0–12.0) TP: Cross-sectional area of core conductor: 4–6 mm²; outer diameter: 13–19 mm<br>• SigenStor EC/SigenStor AC/Sigen Hybrid（15.0-20.0) TP: Cross-sectional area of core conductor: 6–12 mm²; outer diameter: 13–25 mm<br>• SigenStor EC/SigenStor AC/Sigen Hybrid 25.0 TP: Cross-sectional area of core conductor: 12–16 mm²; outer diameter: 13–25 mm |
| 3 | RS485 signal cable | Outdoor shielded twisted pair<br>Cross-sectional area of core conductor:<br>0.5–0.75 mm² (multi-core flexible conductor, Tubular terminal needed)<br>0.5–1 mm² (single-strand hard conductor, no tubular terminal needed)<br>Outer diameter: 4.5–6.5 mm |
| 4 | RJ45 network cable | Outdoor eight-conductor shielded twin-twisted pair cable<br>Cross-sectional area of conductor: 0.13-0.2 mm²<br>Outer diameter: 4–7.5 mm<br>Length:： ≤ 10000 mm [1] |
| 5 | DC input cable of inverter (Ignore this cable in case of SigenStor AC inverters) | Outdoor photovoltaic cable<br>Cross-sectional area of core conductor: 4–6 mm²<br>Outer diameter: 5.5–9 mm |

Note [1]: The communication distance limits the cable length. If the cable is too long, it will affect the communication effect. FE communication distance: ≤ 10000 mm。

## Tips

Recommended specifications for cables connecting power sensors to Distribution panel and to the grid, as well as step-by-step instructions for wiring, can be found in the accompanying documentation for each respective model.

# 3 Equipment Installation

## Installation environment

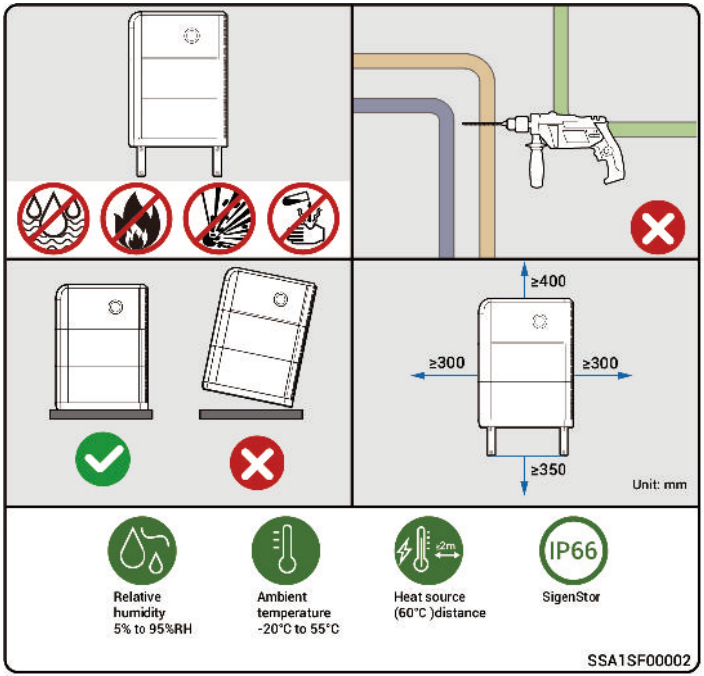
- Do not install the equipment in smoky, flammable, explosive, or corrosive environments.
- Do not install the equipment outdoors in areas prone to salt damage area, which are mainly located less than 500 meters from the coastline.
- Do not install the equipment in environments exposed to direct sunlight, rain, standing water, snow accumulation, sand, and dust. It is recommended to install in a sheltered location. If the area is susceptible to natural disasters such as floods, landslides, earthquakes, or typhoons, take preventive measures during equipment installation.
- Do not install the equipment in an environment with strong electromagnetic interference.
- Ensure that the temperature and humidity of the installation environment comply with the equipment's requirements.

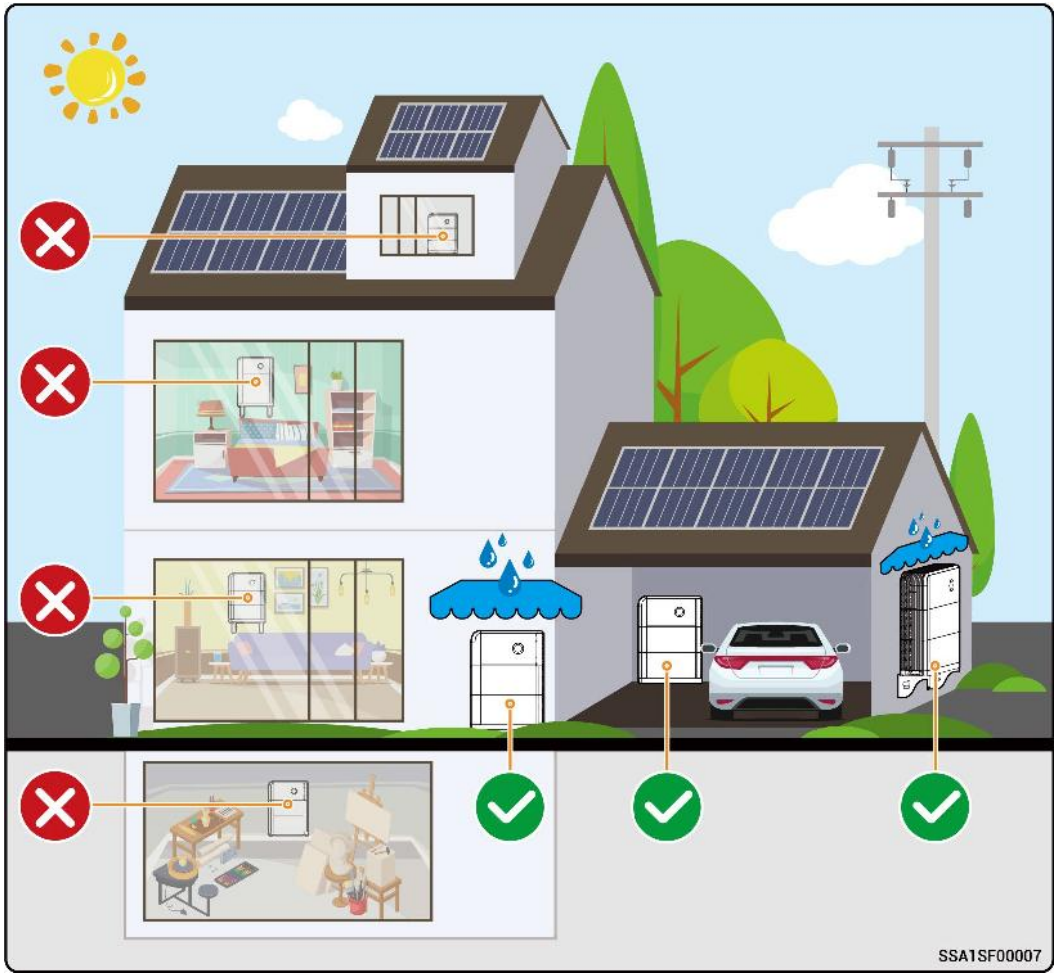
## Installation position

- Do not tilt or overturn the equipment to ensure that it is installed horizontally.
- Do not install the equipment in a place easily touched by children.
- Do not install the equipment in places with fire or damp (including but not limited to kitchen, tea room, toilet, shower room, laundry room, etc.).
- Please keep away from the daily work and living places (including but not limited to living room, bedroom, studio, lounge, study, etc.)
- Do not install the equipment in areas with difficult access (including but not limited to attic, basement, etc.).
- Do not install the equipment in mobile scenarios such as RVS, cruise ships, and trains.
- You are advised to install the equipment in a position that is easy to operate, maintain, and view indicator status.
- When installing the equipment in the garage, do not install the equipment in the position where the vehicle passes through to avoid collision.

## Mounting surface

- Do not install the equipment on a flammable carrier.
- The installation carrier must meet load-bearing requirements. Solid brick-concrete structure, concrete walls, and ground are recommended.
- The surface of the installation carrier must be smooth and the installation area must meet the installation space requirements.
- No water or electricity is routed inside the carrier to prevent drilling hazards during equipment installation.




SSA1SF00007

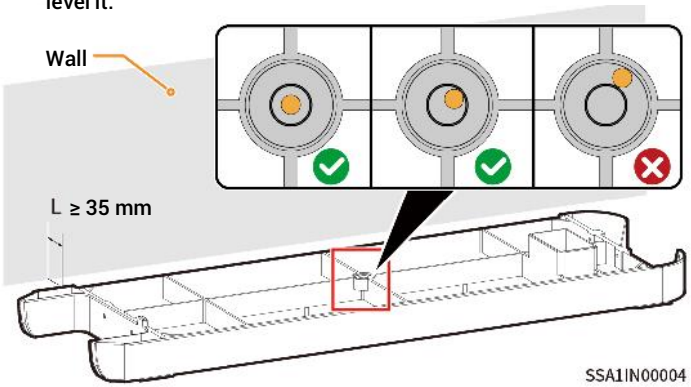
## 4 Installation of inverter and battery pack

### Tips

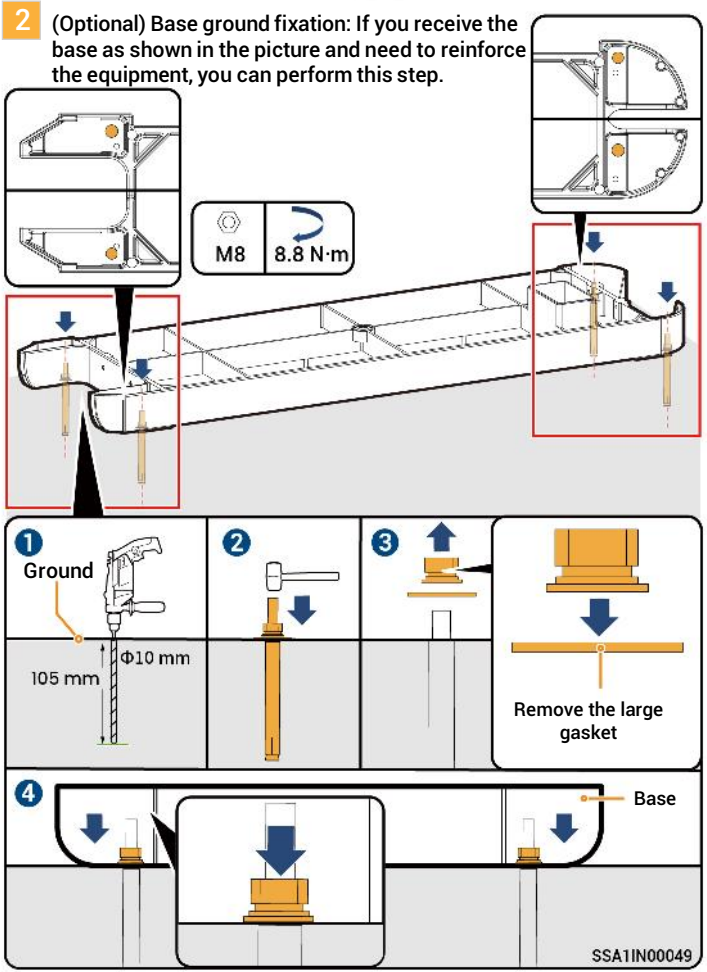
- At least two people are required to install the equipment.
- Up to six SigenStor BATs are supported for floor installation and up to two for wall installation.
- When installing three or more SigenStor BATs on the floor, use Lift.
- To install six SigenStor BATs, please install a external cooling fanon the inverter.
- Multiple SigenStor BATs can be installed onsite based on the actual configuration.
- If the floor is prone to stagnant water, please set up a waterproofing platform or install it on the wall.
- The equipment is heavy, do not slip off when handling the equipment to avoid the equipment falling and injuring the operator.
- SigenStor BAT is forbidden to be used after falling, please buy a new one.
- Do not drag the equipment during installation.

### 4.1 Floor Installation

1 If the horizontal bubble is not centered, use a leveling gasket to level it.

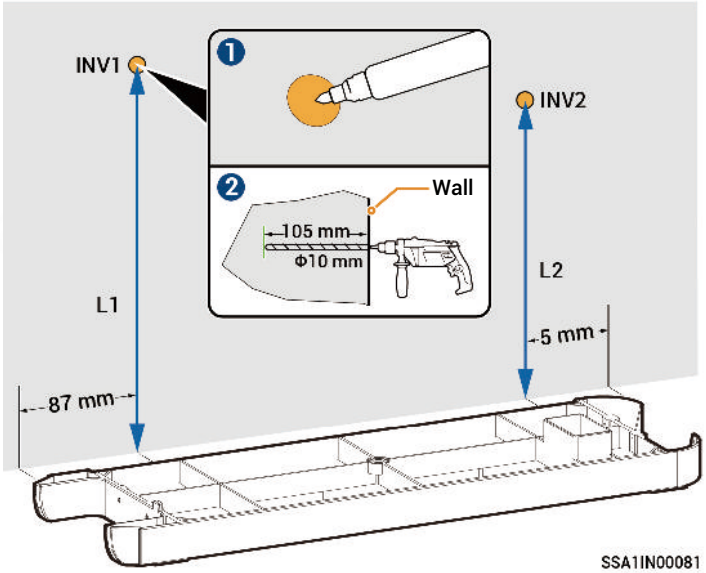



2 (Optional) Base ground fixation: If you receive the base as shown in the picture and need to reinforce the equipment, you can perform this step.



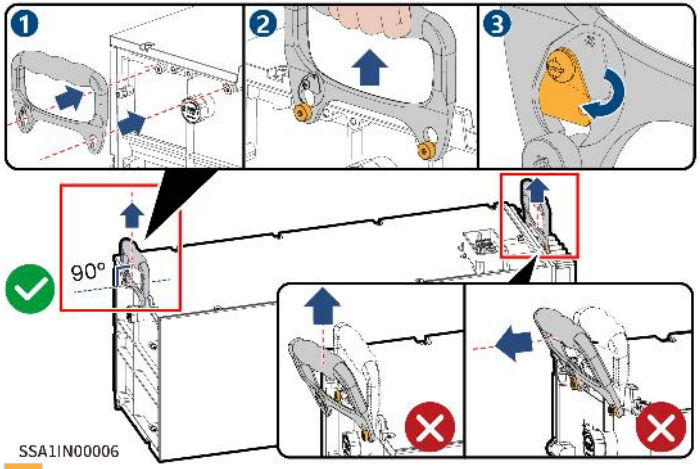
3 INV1 is the hole punching point for the Inverter wall fastener on the left side, and INV2 is the hole punching point for the Inverter wall fastener on the right side.

| SigenStor BAT units | L1 length | L2 length |
|---|---|---|
| three | 1121 mm | 1114 mm |
| four | 1391 mm | 1384 mm |
| five | 1661 mm | 1654 mm |
| six | 1931 mm | 1924 mm |



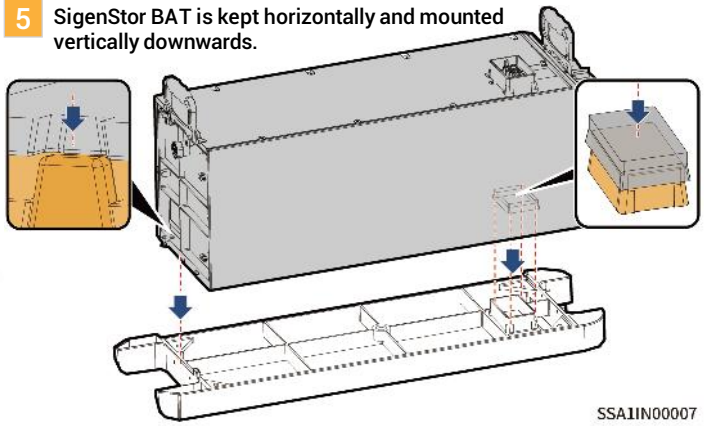
SSA1IN00081

4 Before installing the handle, please use a Torque socket wrench to measure the screws and confirm that the screws on Sigen BAT are securely tightened with a torque of 4.5 N·m (±0.45 N·m).



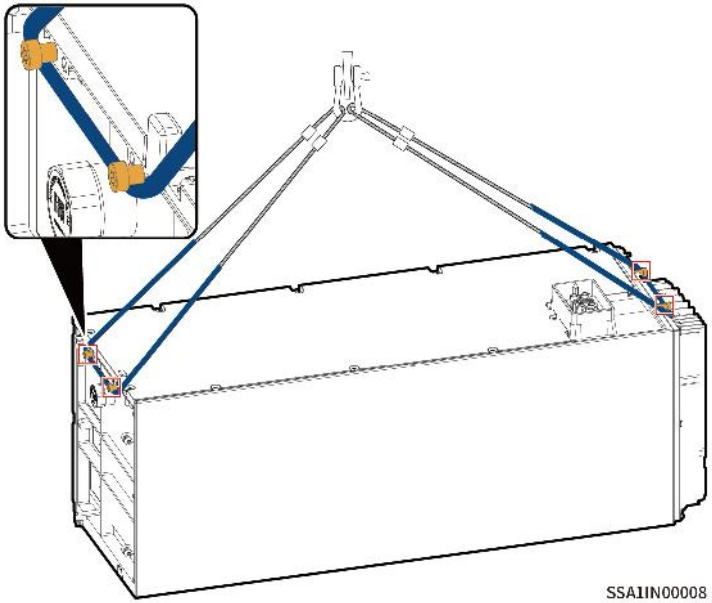
SSA1IN00006

5 SigenStor BAT is kept horizontally and mounted vertically downwards.


SSA1IN00007

6 For details about how to place the second SigenStor BATs, see Steps 3 4 .

7 (Optional) If three or more SigenStor BATs are to be installed, use a Lift. For details about the hoisting rope binding scheme, see the figure.




## Tips

During lifting operations, the area where the sling comes in contact with the equipment should be wrapped with a protective layer to avoid damage to the equipment.

8 Arrange SigenStor EC, SigenStor AC or Sigen Hybrid.

### SigenStor EC or SigenStor AC

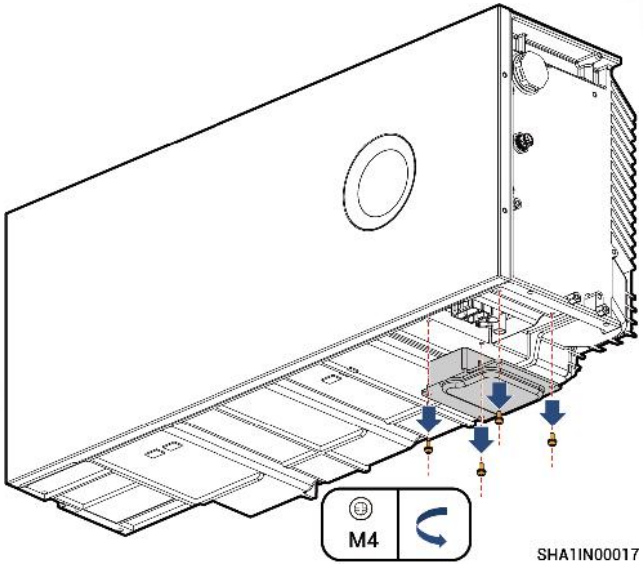
For details, see Step 4 .

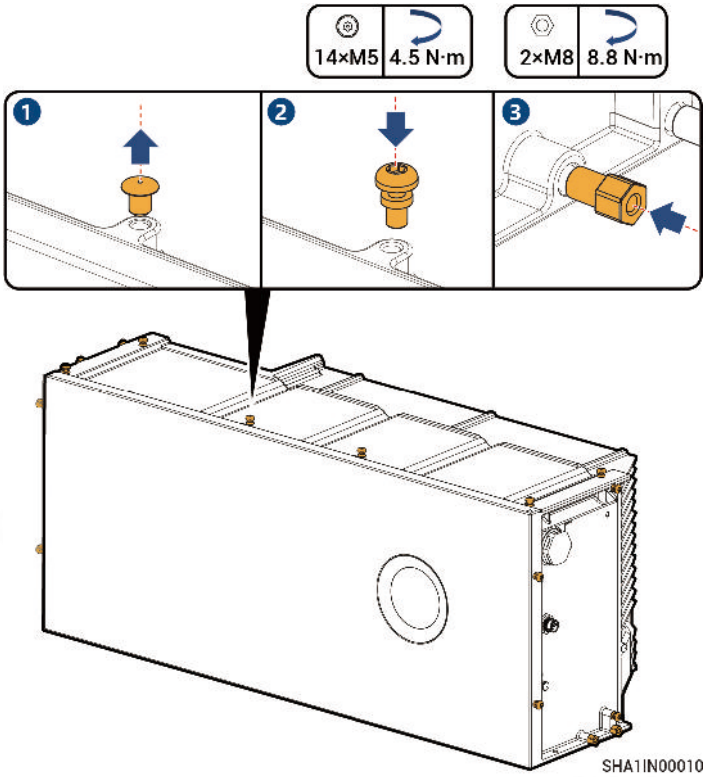
### Sigen Hybrid

Remove the IP protection cover at the bottom, install the chuck screws of the decorative parts, and arrange them as described in Step 4

## Tips

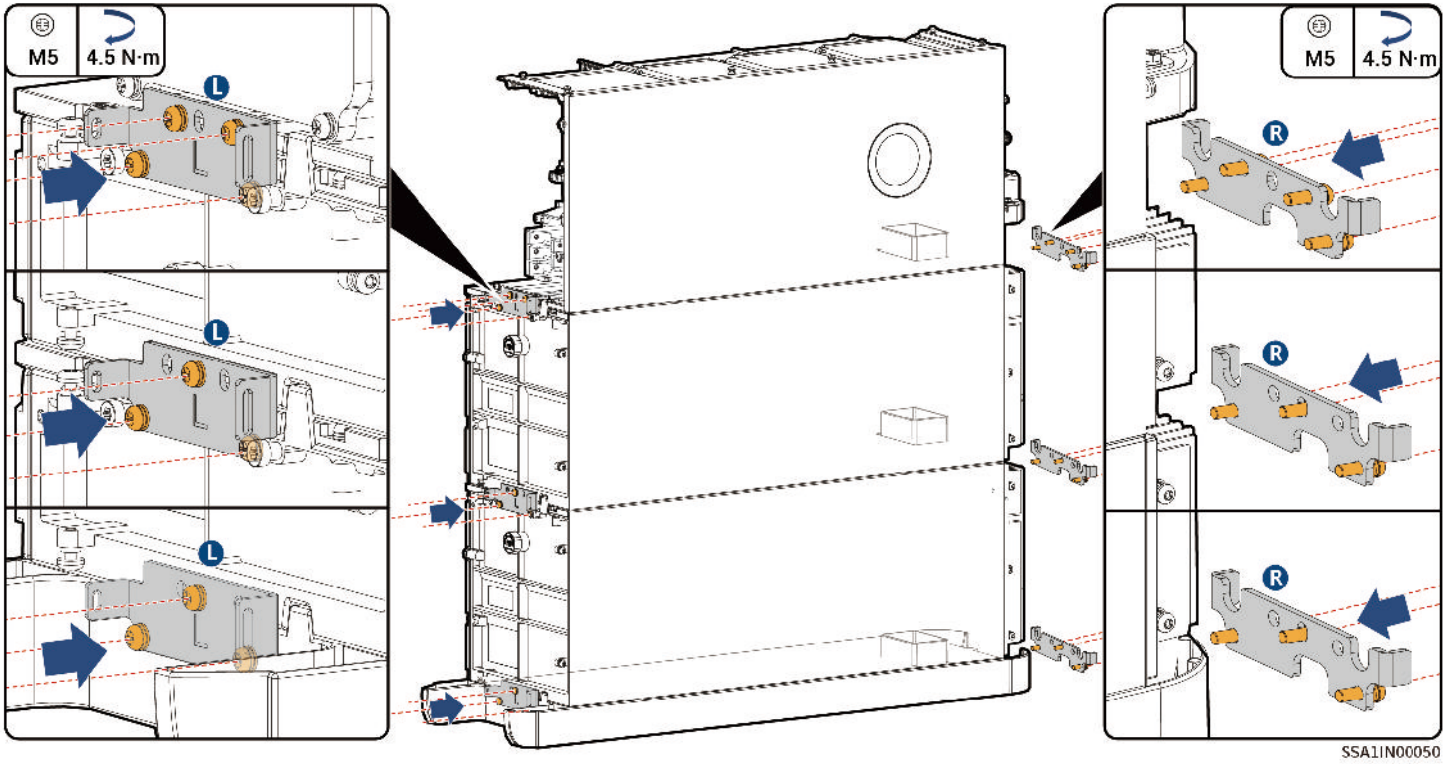
The screws of the trim chuck are packed in the extension package.



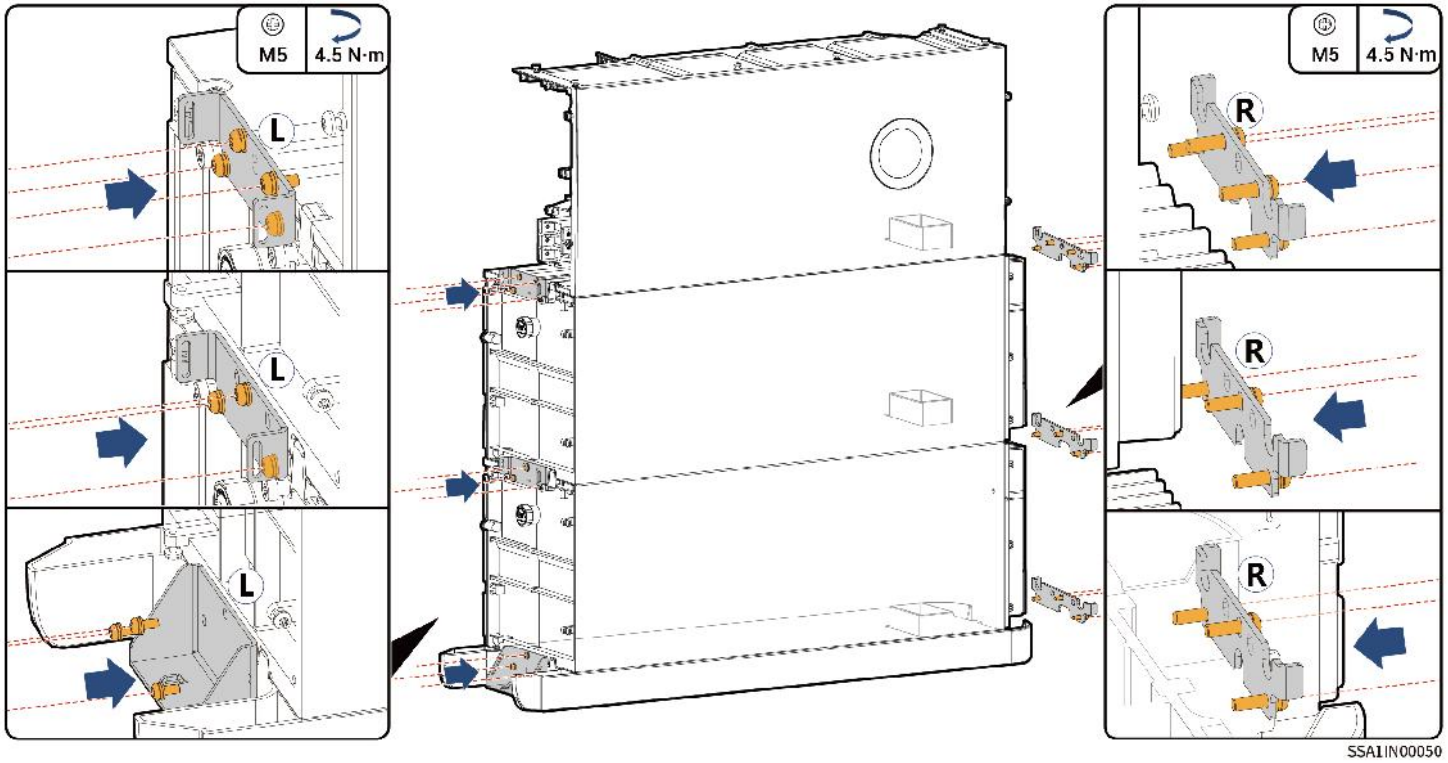

14×M5
4.5 N·m
2×M8
8.8 N·m
1
2
3
SHA1IN00010

9 Base bracket has two versions in terms of appearance. The actual product shall prevail. The installation method for both versions remains the same.

Appearance 1:



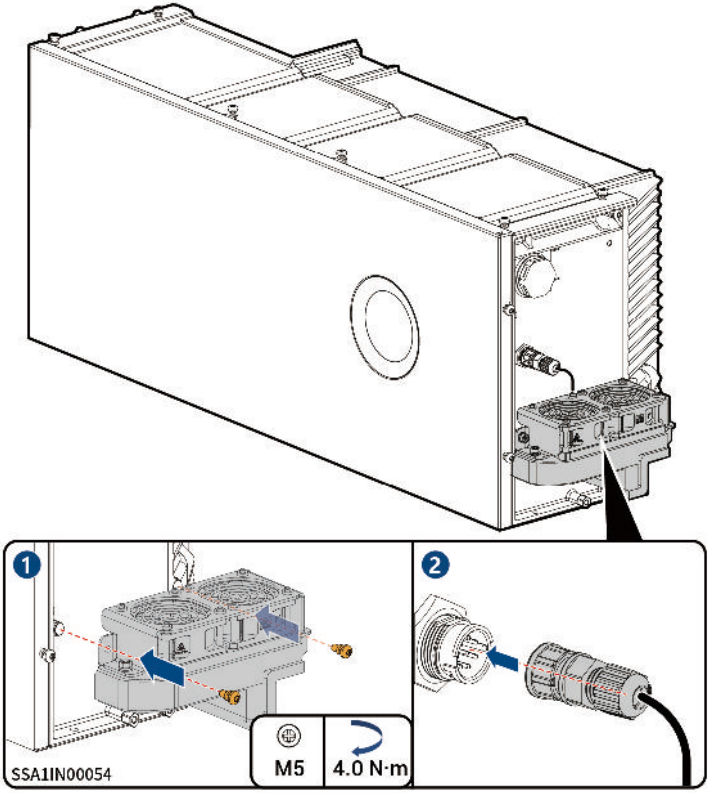
Appearance 2:



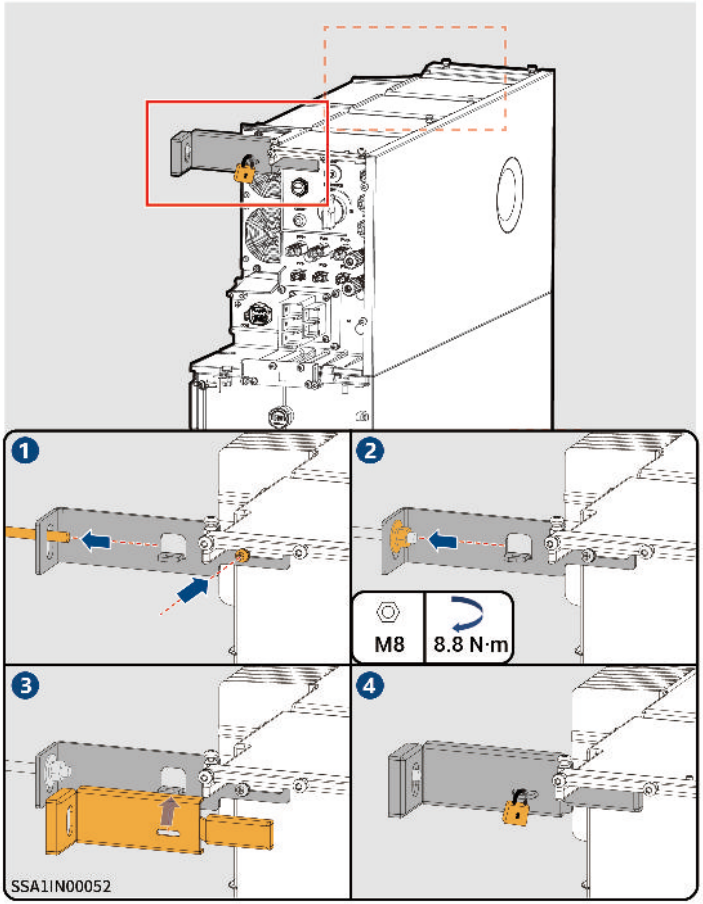
10 To install six SigenStor BATs, please install a external cooling fan on the inverter.

## Tips

The external cooling fan is included in the external cooling fan installation package.



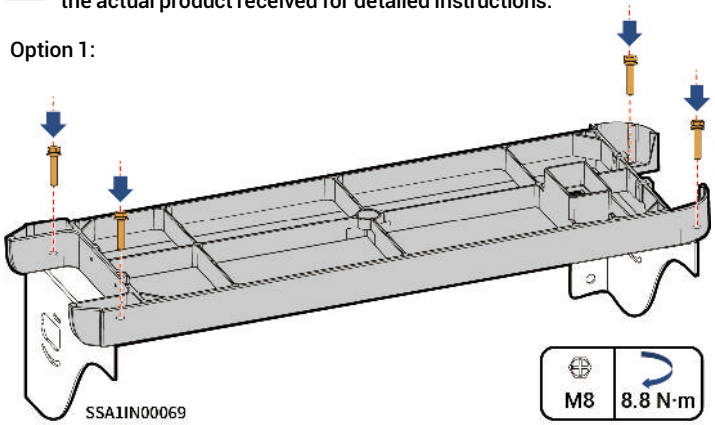

11



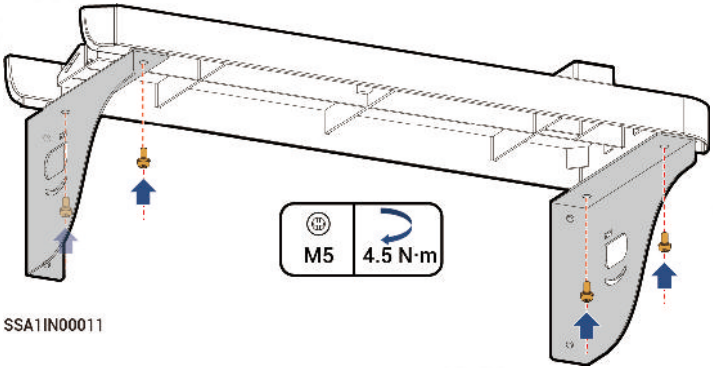
## 4.2 Wall Installation

1 There are two installation methods for the tripod. Please refer to the actual product received for detailed instructions.

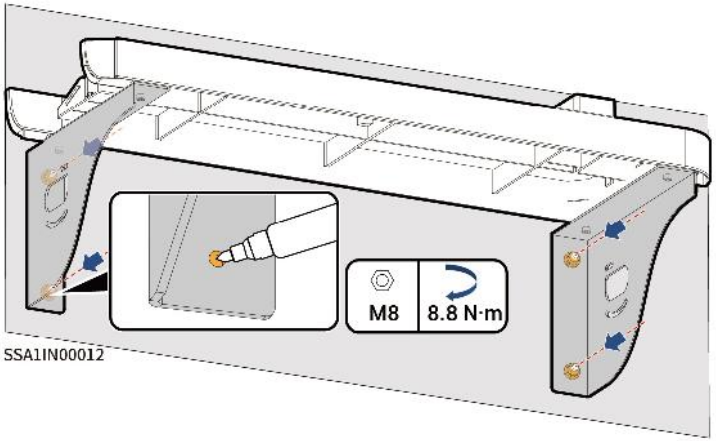
Option 1:




Option 2:

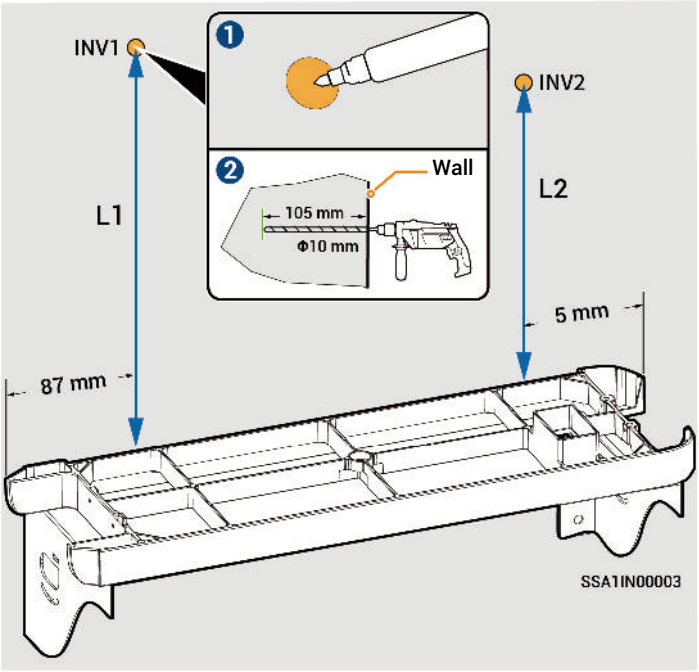



2



4

| SigenStor BAT units | L1 length | L2 length |
|---|---|---|
| 1 | 581 mm | 574 mm |
| 2 | 851 mm | 844 mm |




5 For details about how to place the SigenStor BAT, see Steps 4 5 in Section 4.1 Floor installation.

6 For details about how to place the inverter, see Steps 8 in Section 4.1 Floor installation.

7 For the installation of the cascaded plate, please refer to Step 9 n Section 4.1 Floor Installation.

8 (Optional) For the installation of the cascade fan, please refer to Step 10 in Section 4.1 Floor Installation.

9 For the installation of the fasteners for a wall-mounted inverter, please refer to Step 11 in Section 4.1 Floor installation.

**Warning**

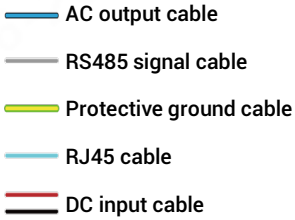
Before connecting cables, ensure that DC SWITCH is in the OFF state, and the front switch of the AC line is off.

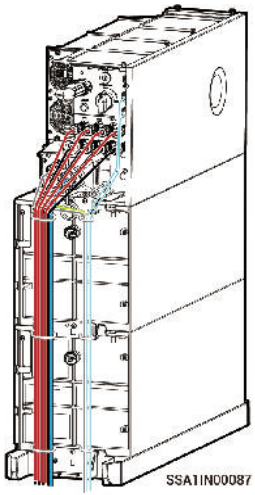
## Tips

- The cable colors in the figure are used only to distinguish different lines. The cable colors are based on actual conditions.
- Bind the power cable separately from the signal cable.
- There are three routing schemes, Select them based on the actual situation.
- It is recommended to use PVC trunking or PVC conduit for external cables of decorative parts. Recommended dimensions for PVC trunking 60 mm × 50 mm, PVC conduit recommended size ≥ Φ80 .

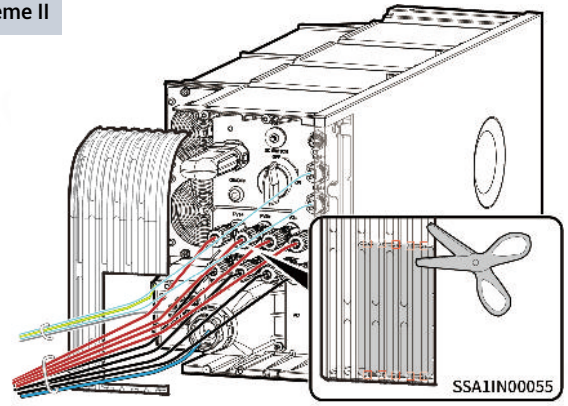
## 5.1 Recommended Cabling installation

Scheme I

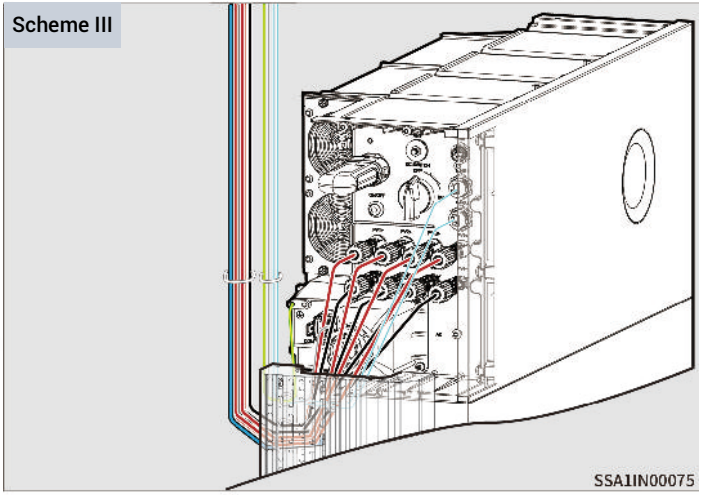



Scheme II



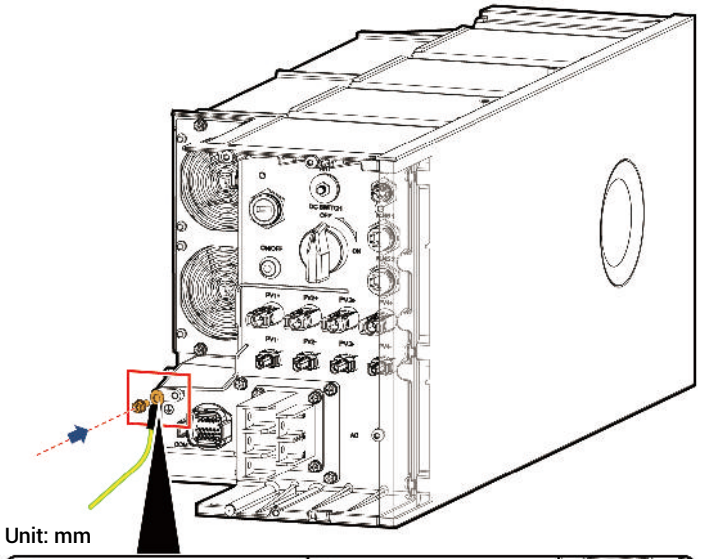

Scheme III



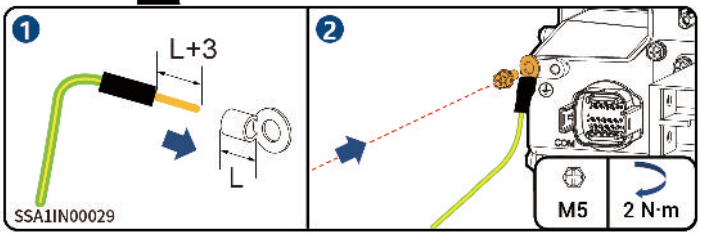
## 5.2 Protective Ground Cable of Inverter

**Tips**

The protective ground wire should be grounded in close proximity.

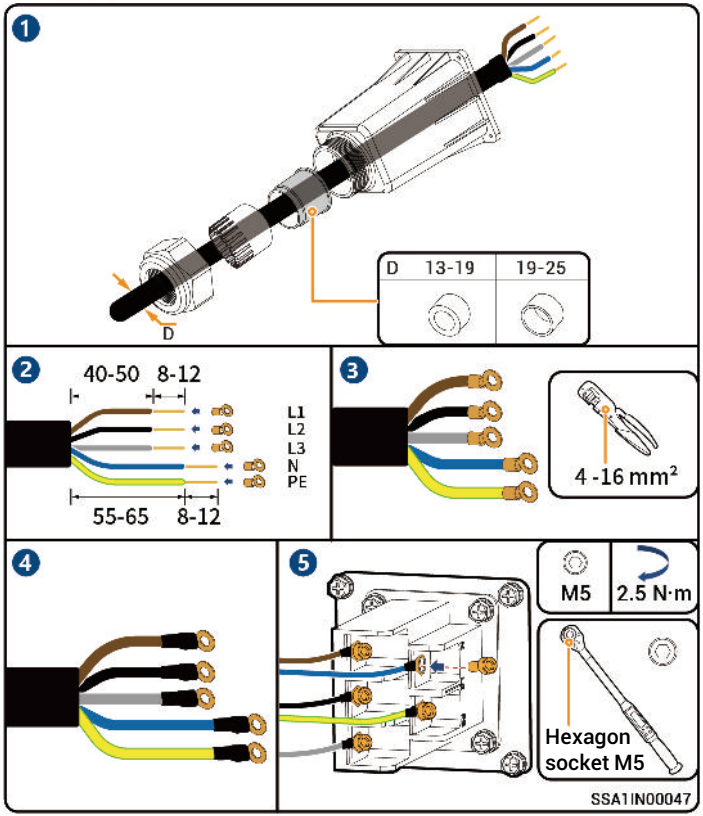


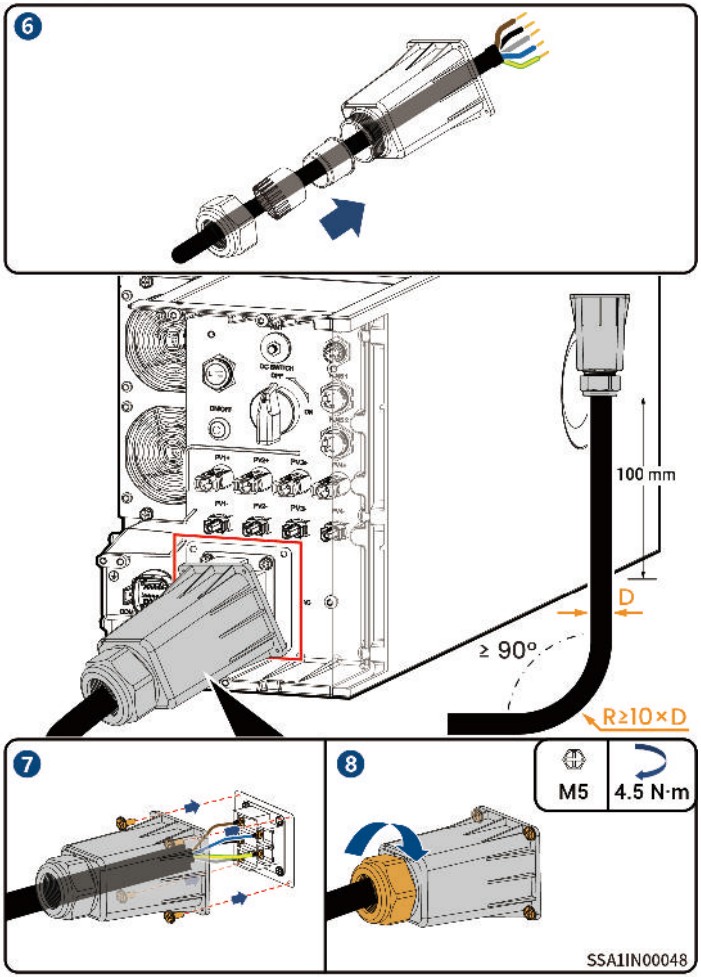
Unit: mm




## 5.3 AC Output Cable of Inverter

Unit: mm




6
100 mm
D
≥ 90°
R≥10×D
7
8
M5
4.5 N·m
SSA1IN00048

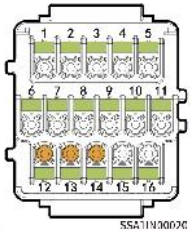
## 5.4 RS485 Signal Cable

**Tips**

If a power sensor is used, one end of the RS485 signal cable is connected to the inverter while the other end to the power sensor.

### 5.4.1 Introduction to Correspondence

COM terminal of the inverter

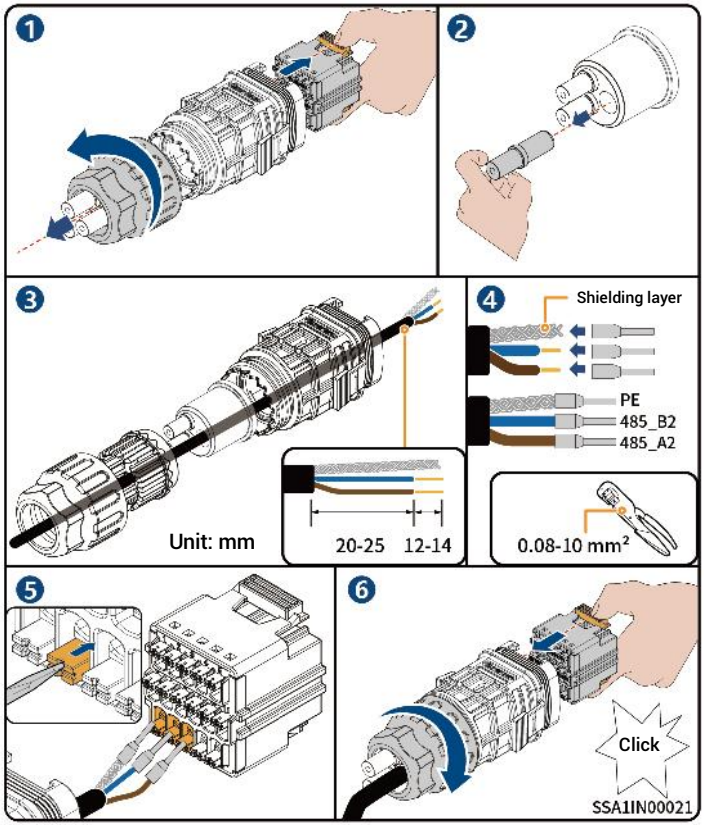


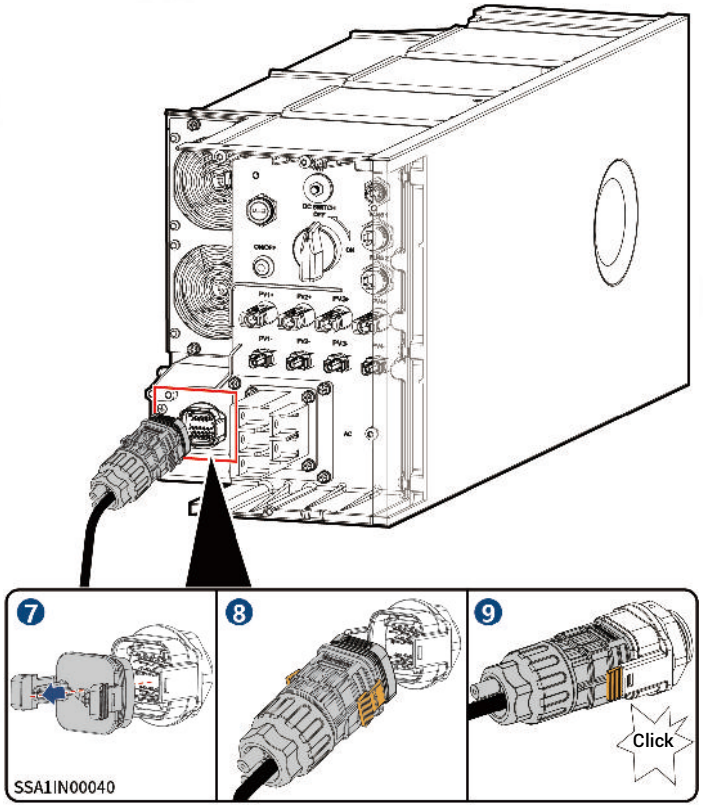

**Tips**

The appearance and specific wiring of the power sensor can be found in the instruction manual delivered with the case.

| Description | Interface definition | COM terminal of the inverter | Sigen Sensor TP-DH (SDM630MODBUS V2) | Sigen Sensor TP-CT120-DH(SDM630 MCT 40mA/120A) | Sigen Sensor TP-CT300-DH (SDM630MCT 40mA/300A) | Sigen Sensor TP-CT600-DH (SDM630MCT V2/600A) |
|---|---|---|---|---|---|---|
| (Reserved) DO1, connected to third party intelligent electric equipment, such as switch control and heat pump | Dry contact 1 - Common | 1 | - | - | - | - |
| | Dry contact 1 - NO | 2 | - | - | - | - |
| (Reserved) DO2, connected to third party intelligent electric equipment, such as switch control and heat pump | Dry contact 2 - Common | 3 | - | - | - | - |
| | Dry contact 2 - NO | 4 | - | - | - | - |
| (Reserved) For power scheduling, such as DRM and Ripple control | DI1, digital input 1 | 5 | - | - | - | - |
| | DI2, digital input 2 | 6 | - | - | - | - |
| | DI3, digital input 3 | 7 | - | - | - | - |
| | DI4, digital input 4 | 8 | - | - | - | - |
| | DI5, digital input 5 | 9 | - | - | - | - |
| | Signal GND | 10 | - | - | - | - |
| COM port used to access the power sensor | PE signal shielding ground | 12 | - | - | - | - |
| | RS485 signal 2_B- | 13 | B- | 13 | 13 | 13 |
| | RS485 signal 2_A+ | 14 | A+ | 14 | 14 | 14 |
| (Reserved) Standby RS485 port | PE signal shielding ground | 11 | - | - | - | - |
| | RS485 signal 1_A+ | 15 | - | - | - | - |
| | RS485 signal 1_B- | 16 | - | - | - | - |

## 5.4.2 RS485 Signal Cable of inverter

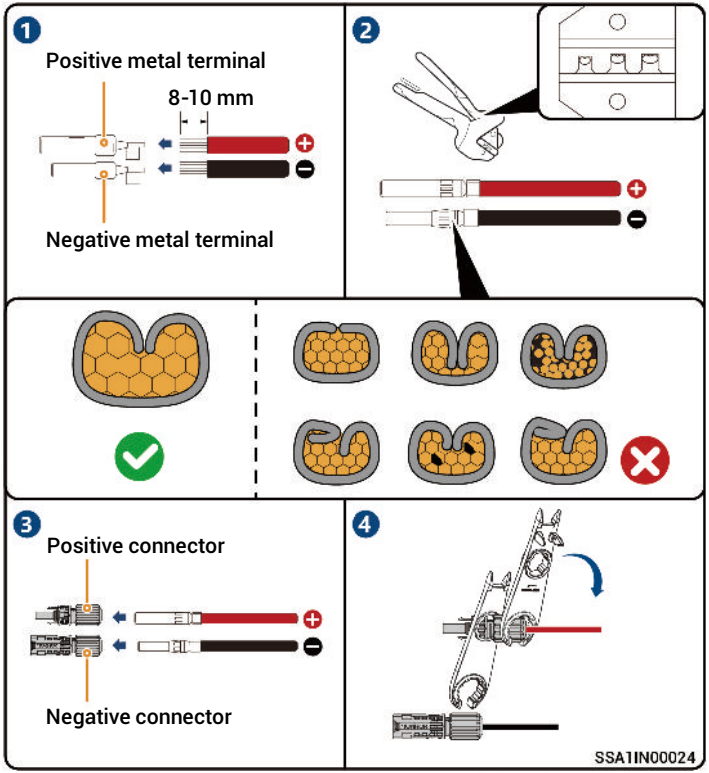


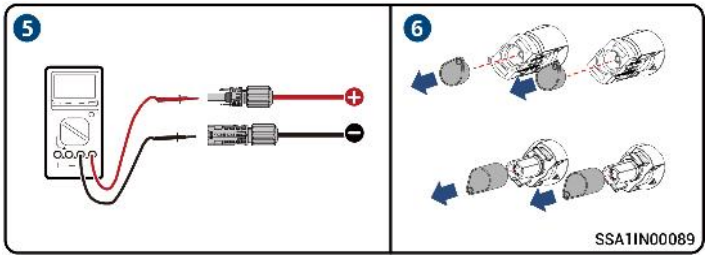



## 5.5 DC input cable of inverter

### Tips

The DC cable is connected to the inverter from the PV string. Ignore this section in case of SigenStor AC inverters.




### Caution

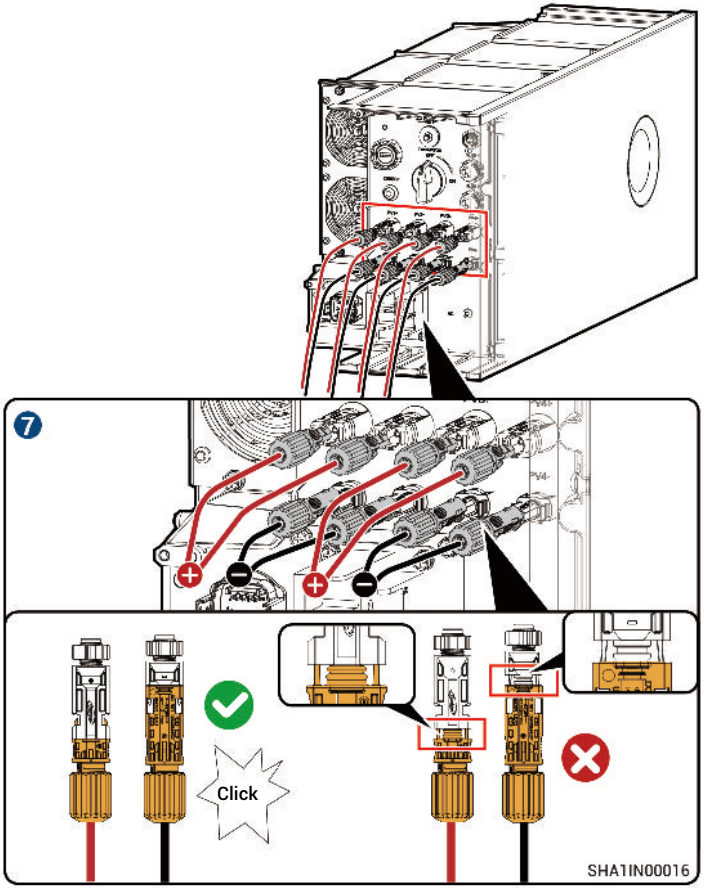
- If the voltage is negative, the polarity is incorrect. Rectify the fault in time.
- Please match the corresponding PV string according to the product model listed in the table.

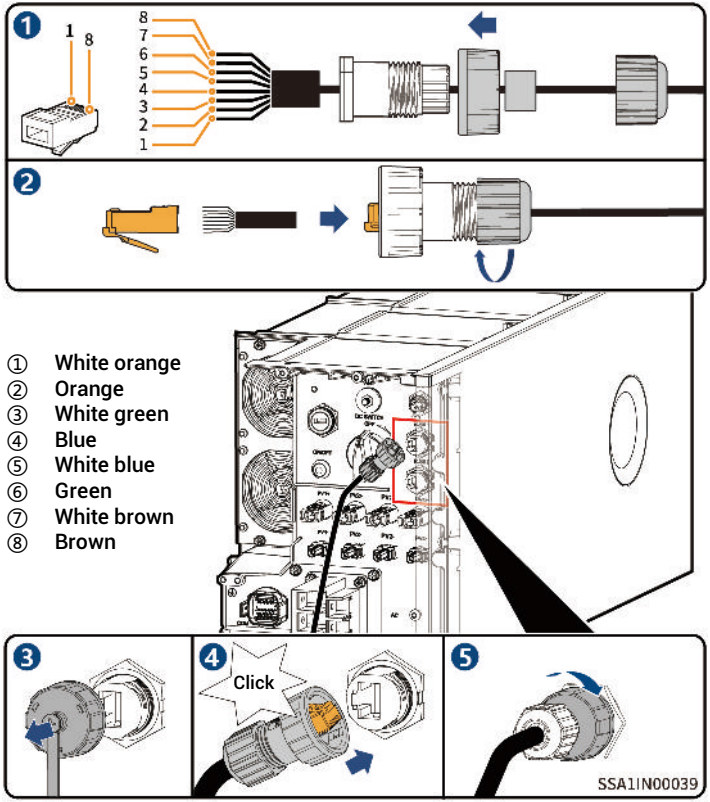
| Product model | PV string formation configuration |
|---|---|
| SigenStor EC / SigenStor Hybrid (5.0–8.0) TP | connected with 2 channels of strings (PV1+/PV2+/PV1-/PV2-) |
| SigenStor EC / SigenStor Hybrid (10.0–15.0) TP | connected with 3 channels of strings (PV1+/PV2+/PV3+/PV1-/PV2-/PV3-) |
| SigenStor EC / SigenStor Hybrid (17.0–25.0) TP | connected with 4 channels of strings (PV1+/PV2+/PV3+/PV4+/PV1-PV2-/PV3-/PV4-) |

## 5.6 RJ45 Cable of inverter

**Tips**

RJ45 cables are EIA/TIA 568B standard cables.



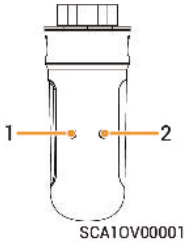




① White orange
② Orange
③ White green
④ Blue
⑤ White blue
⑥ Green
⑦ White brown
⑧ Brown

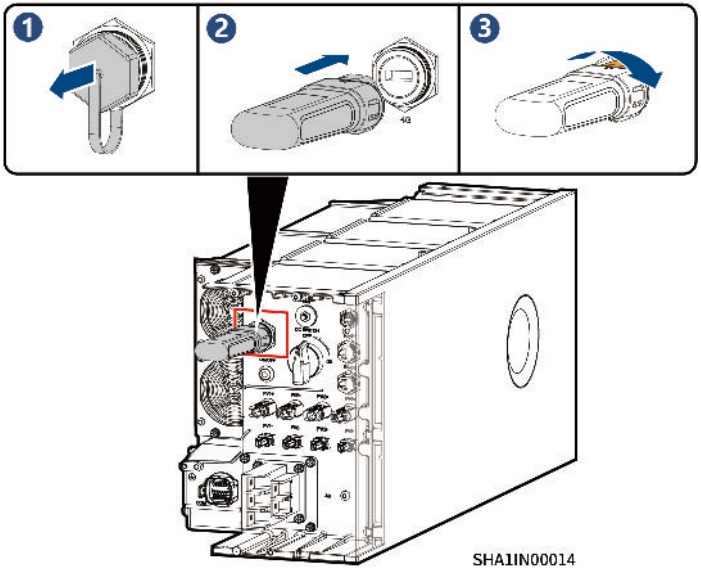
## 5.7 Sigen CommMod Installation

**Tips**

Sigen CommMod is required for 4G communication.



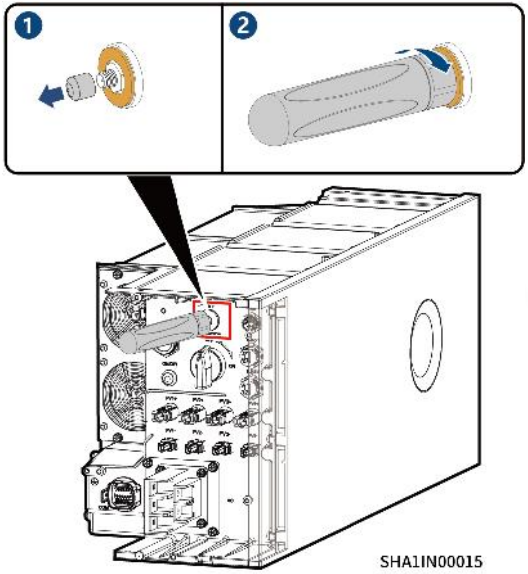

| S/N | Indicator | Description |
|---|---|---|
| 1 | Power indicator | - |
| 2 | Network state indicator | • Slow flashing(200 ms on/1800 ms off): The network is being connected<br>• Slow flashing(1800 ms on/200 ms off): Standby<br>• Quick flashing(125 ms on/125 ms off): Data is being transferred |




## 5.8 WLAN antenna stick Installation

**Tips**

WLAN communication requires the installation of WLAN antenna stick.

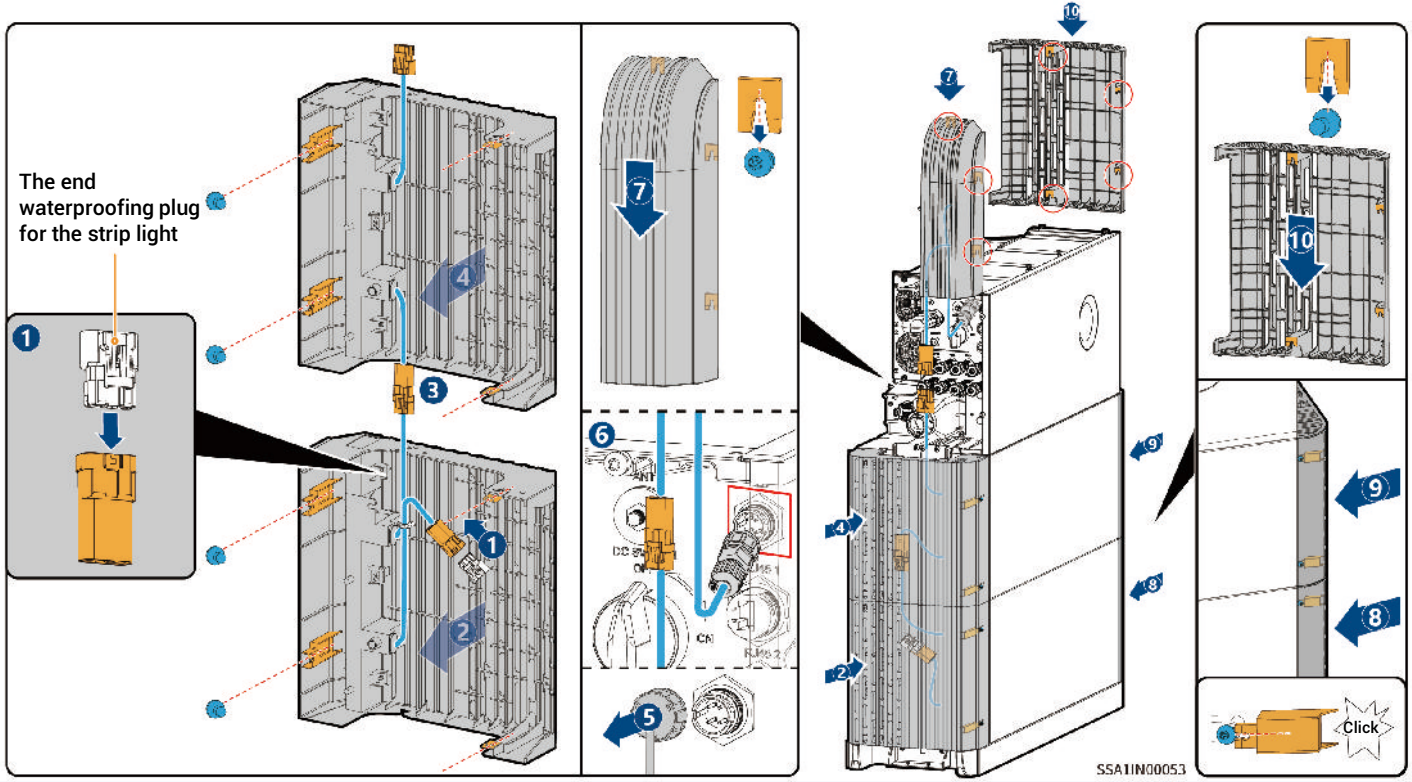


# 6 Post-installation Check

| S/N | Check Item |
| --- | --- |
| 1 | The equipment has been securely installed. |
| 2 | Ground cables, DC cables, signal cables, etc. are installed accurately without leftovers. |
| 3 | The cable fastening screws or terminals are properly installed. |
| 4 | There are no sharp spikes or acute angles at the cut point of the cable tie. |
| 5 | DC SWICH is in the OFF state. |
| 6 | Ports that are not in use have waterproof covers or plugs installed. |
| 7 | There is no construction left inside or outside the equipment. |

After confirmation, install the SigenStor BAT and SigenStor EC /SigenStor AC/Sigen Hybrid decorative covers.

# 7 Installation of the Decorative Cover

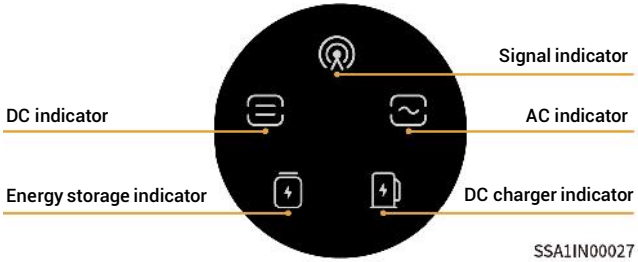



## Caution

- The end waterproofing plug for the strip light in step ❶ is at the lower end of the decoration on the left side of the inverter, please remove it for spare.
- If the equipment is not equipped with a decorative cover light strip, ignore Steps ❶ ❸ ❺ ❻ in the figure.

# 8 Equipment Power-On

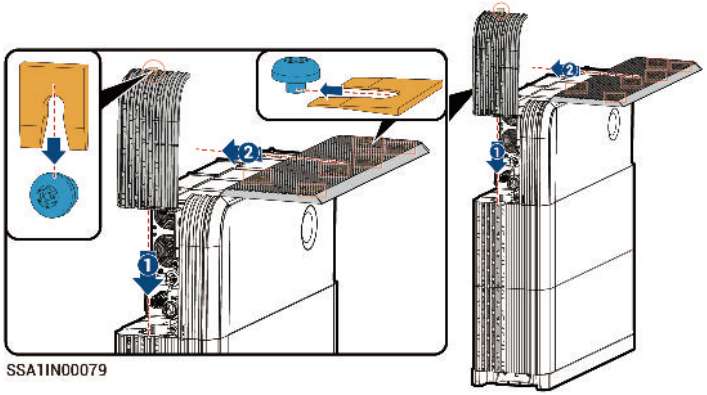
1. Turn on the front switch of the equipment.
2. Rotate DC SWITCH to ON. (This step is not necessary for SigenStor AC)
3. Observe the indicators on the front side of the inverter to learn about the equipment status.




| Indicator | Color | State | Description |
|---|---|---|---|
| | | Always on | The DC side is connected but not running. |
| | | Always on | The DC side is running. |
| | | - | The DC side is not connected. |
| | | Flash | The DC side is faulty. |
| | | Always on | The inverter is faulty. |
| | | Always on | The AC side is connected but not running. |
| | | Always on | Grid-connected operation. |
| | | Always on | Off-grid operation. |
| | | - | The AC side is not connected. |
| | | Flash | Off-grid overload operation. |
| | | Flash | The AC side is faulty. |
| | | Always on | The inverter is faulty. |

| Indicator | Color | State | Description |
|---|---|---|---|
| | | Always on | All SigenStor BATs are connected but not running. |
| | | Flash | SigenStor BAT is charging. |
| | | Flash | SigenStor BAT is discharging. |
| | | - | All SigenStor BATs lie dormant. |
| | | Flash | Some SigenStor BATs are faulty. |
| | | Always on | All SigenStor BATs are faulty. |
| | | - | The management system is not connected. |
| | | Flash | Connected to local App. |
| | | Always on | Connected to the management system using an FE or WLAN. |
| | | Always on | Connected to the management system over 4G. |

After powering on the equipment, install the remaining decorative covers.



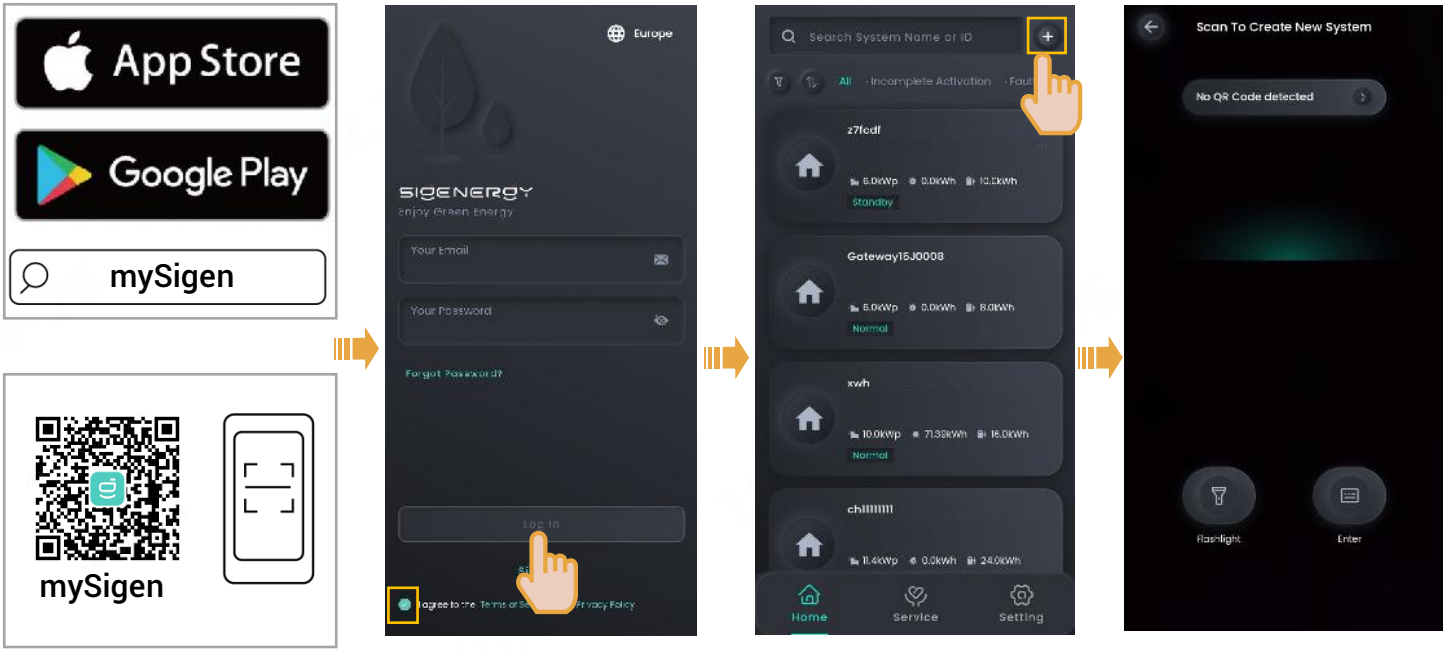
## 9 Download and create new system for mySigen APP

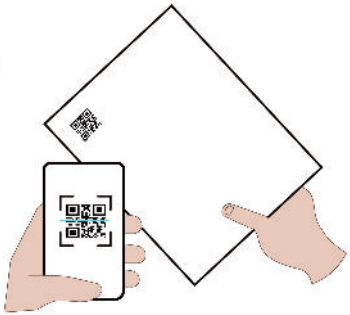
1 Please enter the "Partner" → "Register Now" at the Company's official website (https://www.sigenergy.com), and complete the account registration based on facts.

2 Download the mySigen App and create new system for the device.

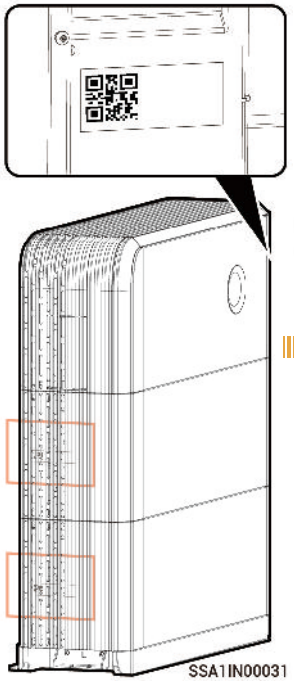
### Tips

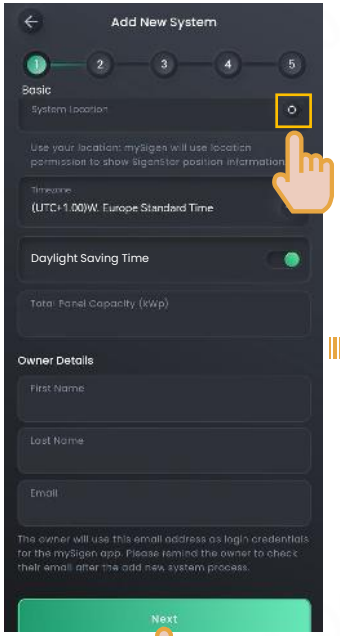
Do not use only WLAN communication for creating the new system. To use the WLAN, install Sigen CommMod or RJ45 network cables at the same time. Otherwise, it would be impossible to create the new system.





or



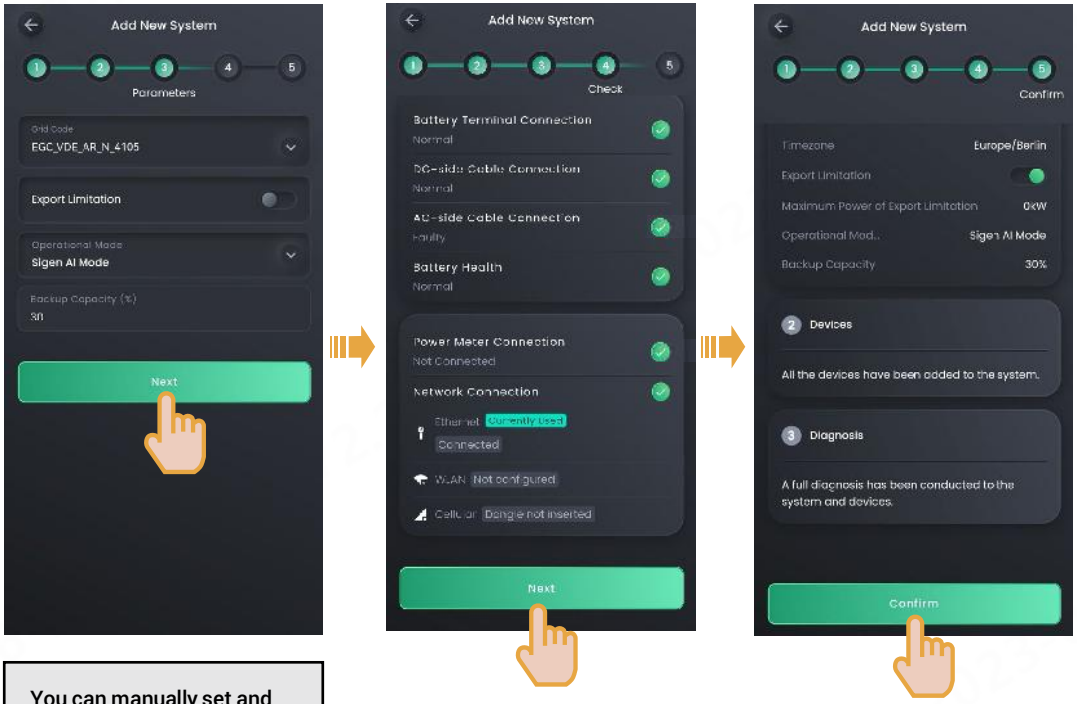





Scan the SN code label on the accompanying box material. If the SN is lost, scan the SN on the side of the inverter or SigenStor BAT.

Locate the address manually and complete the Total Panel Capacity and Owner Details

If an upgrade is required, perform the upgrade




You can manually set and modify some function parameters of the power station.

3 **Upon completion of the new system creation, the installer shall inform the owner to check its "sigencloud" e-mail within 24 hours and proceed with activating its account.**

**Sigenergy Technology Co., Ltd.**

Website | LinkedIn | YouTube

**www.sigenergy.com**