Sigen EV AC Charger Installation Guide

Sigen EVAC (7, 11, 22) 4G T2 WH
Sigen EVAC (7, 11, 22) 4G T2SH WH

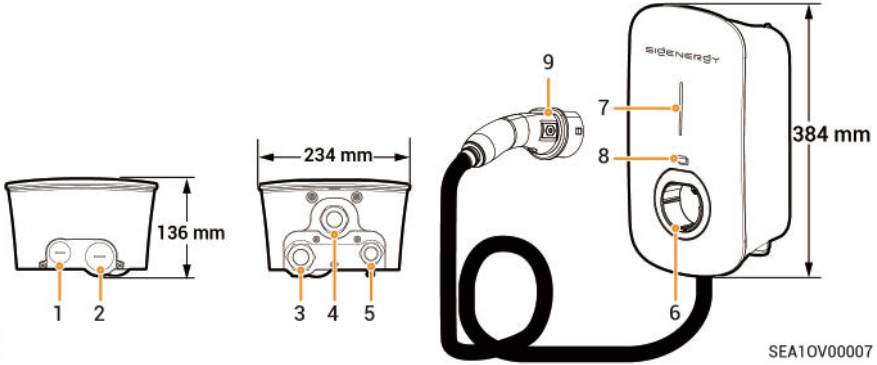
Version: 03
Release date: 2024-06-20

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.

1 Introduction

Sigen EVAC 7/11/22 4G T2 WH

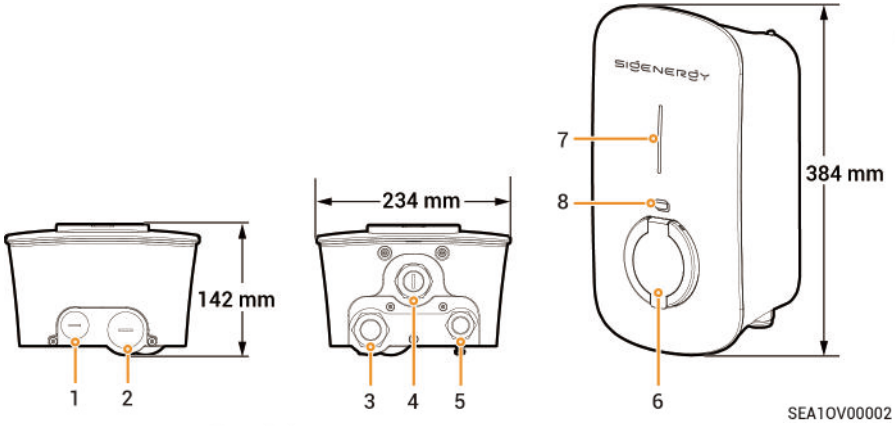


Caution

- You are advised to connect cables through bottom routing holes (holes 3 and 5).
- If cables are connected through top routing holes (holes 1 and 2), please install the equipment in a sheltered location to prevent water ingress after prolonged water accumulation on the top.

No.	Description	No.	Description
1	Top routing hole for communication cable	2	Top routing hole for AC input cable
3	Bottom routing hole for AC input cable	4	Bottom routing hole for charging cable
5	Bottom routing hole for communication cable	6	Type 2 charging connector holder
7	Indicator	8	Sigen RFID card reading area
9	Charging connector	-	-

Sigen EVAC 7/11/22 4G T2SH WH



Caution

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No.	Description	No.	Description
1	Top routing hole for communication cable	2	Top routing hole for AC input cable
3	Bottom routing hole for AC input cable	4	(Reserved) Bottom routing hole
5	Bottom routing hole for communication cable	6	Type 2 charger socket with protective door
7	Indicator	8	Sigen RFID card reading area

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


Safety glasses


Dust mask


Protective gloves


Insulating gloves


Insulating shoes

Installation tool


Power drill


Vacuum cleaner


Wire cutter


Crimp tool


Crimping pliers


Wire stripper


Scissors


Cable tie


Heat shrinkable sleeve

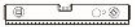

Heat gun


Insulation screwdriver set


Digital torque open-end wrench


Marker


Rubber mallet


Level


Tape measure

Self-supplied pre-AC switch

Users should prepare type B MCB compliant with IEC/EN 60898 with recommended specifications shown below. Users can omit this requirement if they have installed compliant AC switches.

Model	Number of Poles, MCB	Rated Current, MCB
Sigen EVAC 7 4G T2 WH, Sigen EVAC 7 4G T2SH WH	1P+N	40 A
Sigen EVAC 11 4G T2 WH, Sigen EVAC 11 4G T2SH WH	3P+N	20 A
Sigen EVAC 22 4G T2 WH, Sigen EVAC 22 4G T2SH WH	3P+N	40 A

Self-supplied Cables

The grid power options include TT, TN-S, TN-C-S, and IT. Users can prepare cables according to their local grid power mode.

<table>
<tr><th rowspan="2">No.</th><th colspan="2" rowspan="2">Cable Name</th><th colspan="3">Recommended Specification</th></tr>
<tr><th>Sigen EVAC 7 4G T2 WH
Sigen EVAC 7 4G T2SH WH</th><th>Sigen EVAC 11 4G T2 WH
Sigen EVAC 11 4G T2SH WH</th><th>Sigen EVAC 22 4G T2 WH
Sigen EVAC 22 4G T2SH WH</th></tr>
<tr><td rowspan="4">1</td><td rowspan="4">AC input cable</td><td>Three-phase five-wire system (L1/L2/L3/N/PE)</td><td rowspan="2">-</td><td rowspan="2">Five-core/four-core copper core cables for outdoor use
• Cable temperature resistance: ≥ 90°C
• Outer diameter: 13 mm to 20 mm
• Current: 16 A
• Cross-sectional area of conductor: 2.5 mm² to 4 mm²</td><td rowspan="2">Five-core/four-core copper core cables for outdoor use
• Cable temperature resistance: ≥ 90°C
• Outer diameter: 13 mm to 20 mm
• Current: 32 A
• Cross-sectional area of conductor: 6 mm²</td></tr>
<tr><td>Three-phase four-wire system (L1/L2/L3/PE)</td></tr>
<tr><td>Two phases (L1/L2/PE)</td><td rowspan="2">Three-core copper core cables for outdoor use
• Cable temperature resistance: ≥ 90°C
• Outer diameter: 13 mm to 20 mm
• Current: 32 A
• Cross-sectional area of conductor: 6 mm²</td><td rowspan="2">-</td><td rowspan="2">-</td></tr>
<tr><td>Single phase (L/N/PE)</td></tr>
<tr><td>2</td><td colspan="2">RS485 signal cable/DO signal cable</td><td colspan="3">Cables or two-core shielded twisted pair for outdoor use
• Conductor cross-sectional area: 0.2 mm² to 1.5 mm²
• Outer diameter: 5 mm to 7 mm</td></tr>
<tr><td>3</td><td colspan="2">RJ45 network cable</td><td colspan="3">Shielded twisted pair for outdoor use
• Conductor cross-sectional area: 0.129 mm² to 0.205 mm²
• Outer diameter: 5 mm to 7 mm</td></tr>
<tr><td>4</td><td colspan="2">(Optional) PEN control line (only applicable to the UK)</td><td colspan="3">Two-core copper core cables for outdoor use
• Cable temperature resistance: ≥ 90°C
• Voltage requirement: ≥ 300 V/500 V
• Cross-sectional area of conductor: 0.75 mm² to 1.5 mm²
• Outer diameter: 5 mm to 7 mm</td></tr>
</table>

Tips

The warranty applies when the equipment has been installed properly for its intended use and in accordance with the operating instructions.

Installation environment

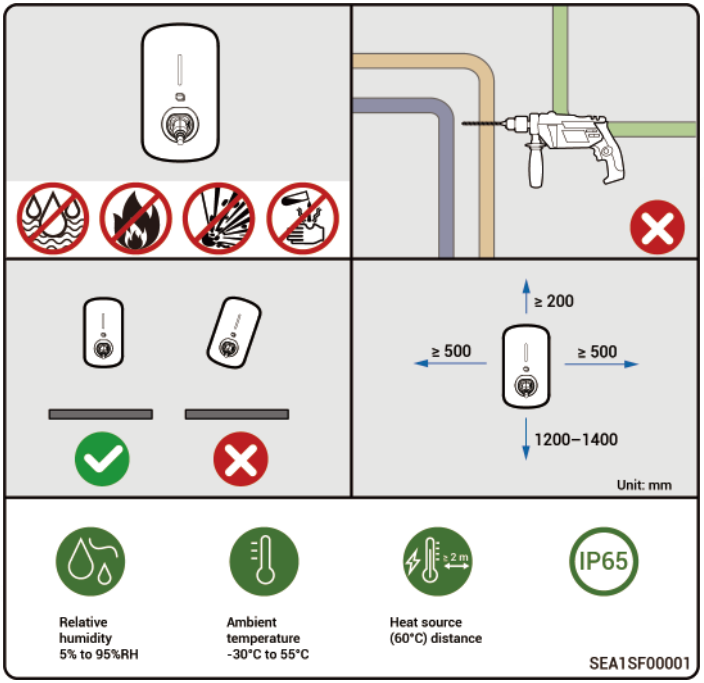
- Do not install the equipment in smoky, flammable, explosive, or corrosive environments.
- Avoid exposing the equipment to direct sunlight, rain, standing water, snow, or dust. Install the equipment in a sheltered place. Take preventive measures in operating areas prone to natural disasters such as floods, mudslides, earthquakes, and typhoons.
- 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.
- The equipment should be installed in an area that is at least 500 m away from corrosion sources that may result in salt damage or acid damage (corrosion sources include but are not limited to seaside, thermal power plants, chemical plants, smelters, coal plants, rubber plants, and electroplating plants).

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 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.

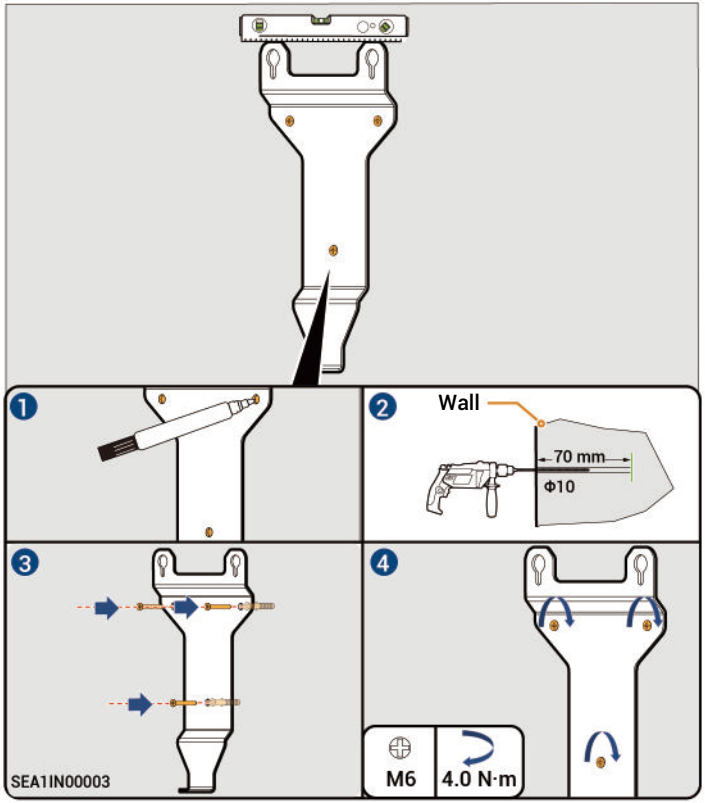
Mounting surface

- Do not install the equipment on a flammable carrier.
- The installation carrier must meet load-bearing requirements. Solid brick-concrete structure, concrete walls 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.

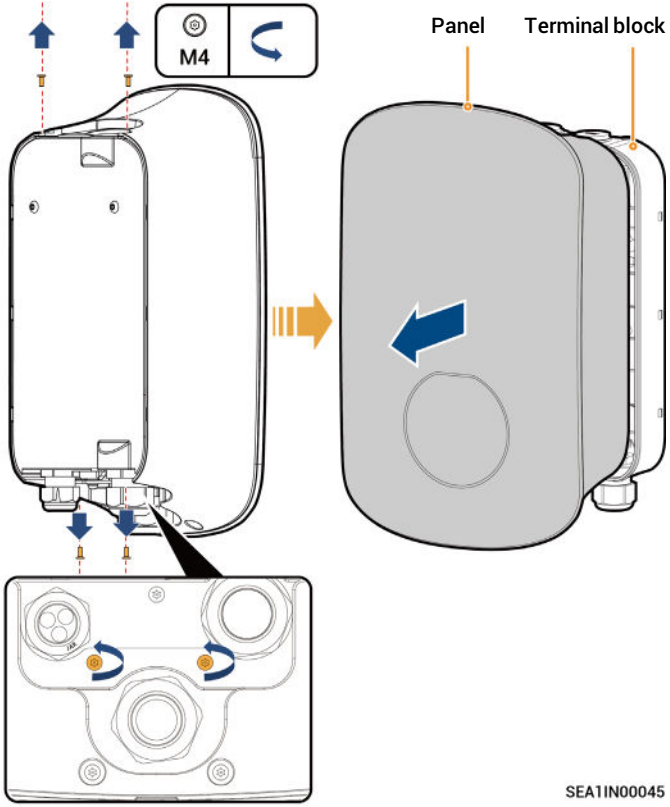


4 Installation

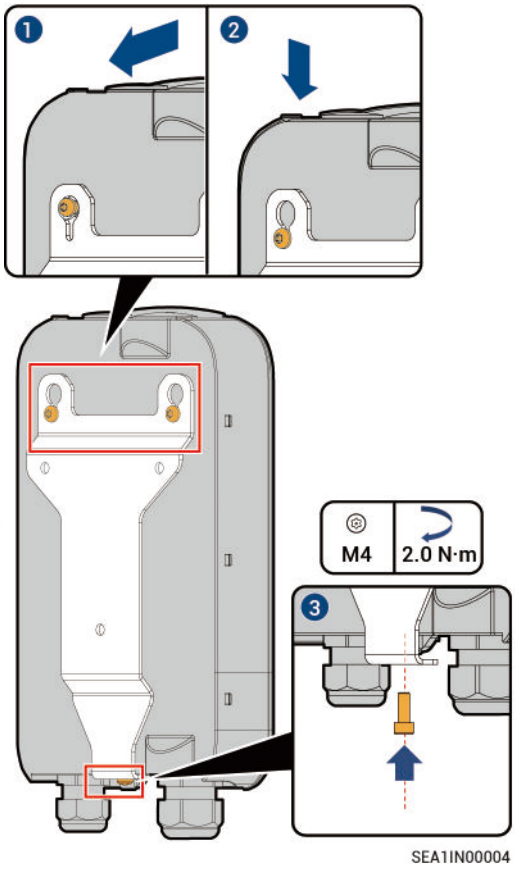
1 Install the wall mounting fittings.



2 Take the equipment from its package and disassemble it.



3 Install and secure the terminal block.



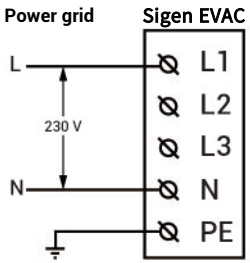
5 Cable Connection

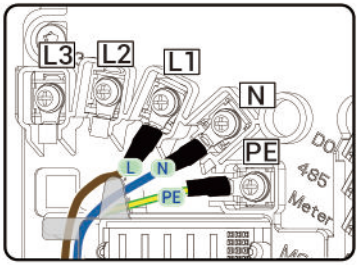
5.1 Description of Grid Power Supply Modes

Danger

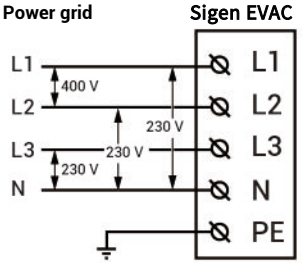
Sigen EVAC supports the grid power supply methods shown in the diagram, please strictly refer to the diagram to connect the AC cable. The device can not operate if the connection is wrong; safety hazard can be caused if the PE wire is wrongly connected.

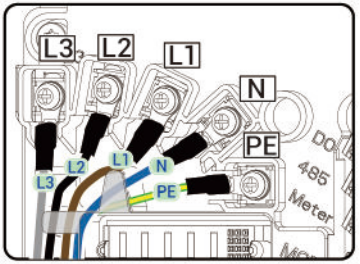
Single-phase three-wire system (L/N/PE)
Phase-to-neutral voltage (L-N): 230 V



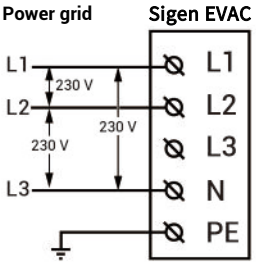


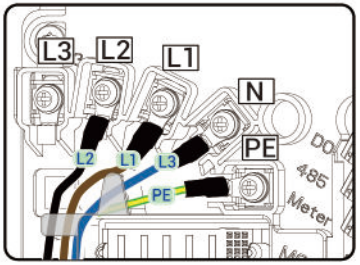
Three-phase five-wire system (L1/L2/L3/N/PE)
Phase-to-phase voltage (L-L): 400 V
Phase-to-neutral voltage (L-N): 230 V



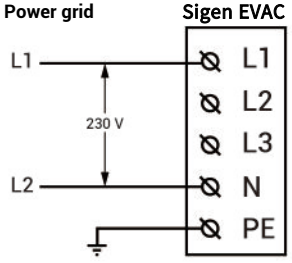


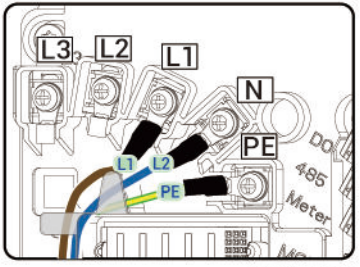
Three-phase four-wire system (L1/L2/L3/PE)
Phase-to-phase voltage (L-L): 230 V





Two phases (L1/L2/PE)
Phase-to-phase voltage (L-L): 230 V





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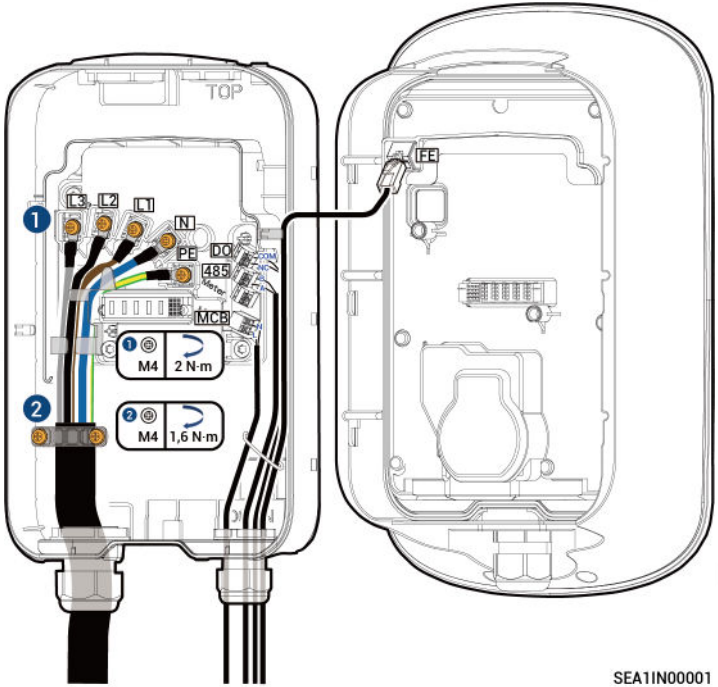
5.2 Routing

Tips

- This section describes the routing method using the three-phase five-wire system.
- You are recommended to place the PE core at the lowest layer during routing.
- Meter is a reserved port.

Bottom Routing (recommended)



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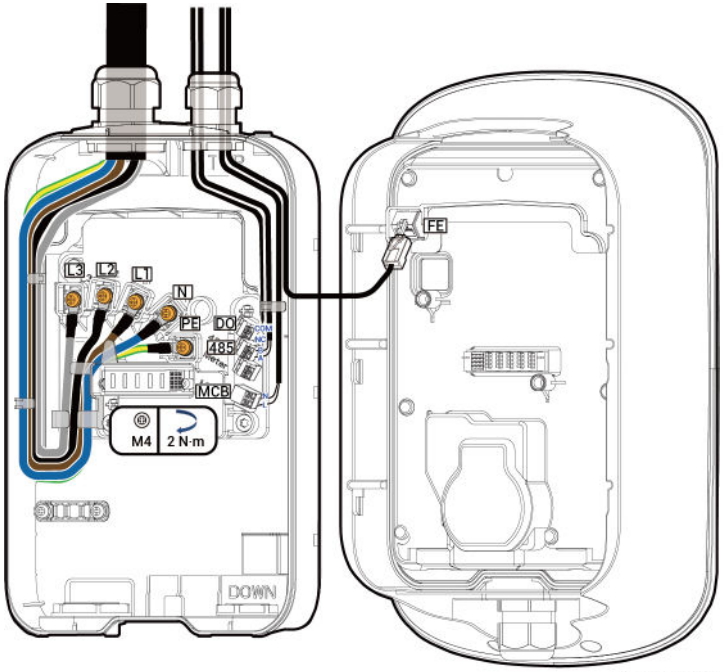
Top Routing

Tips

When top routing is used, the equipment top should be adequately protected to prevent water ingress caused by prolonged water accumulation.



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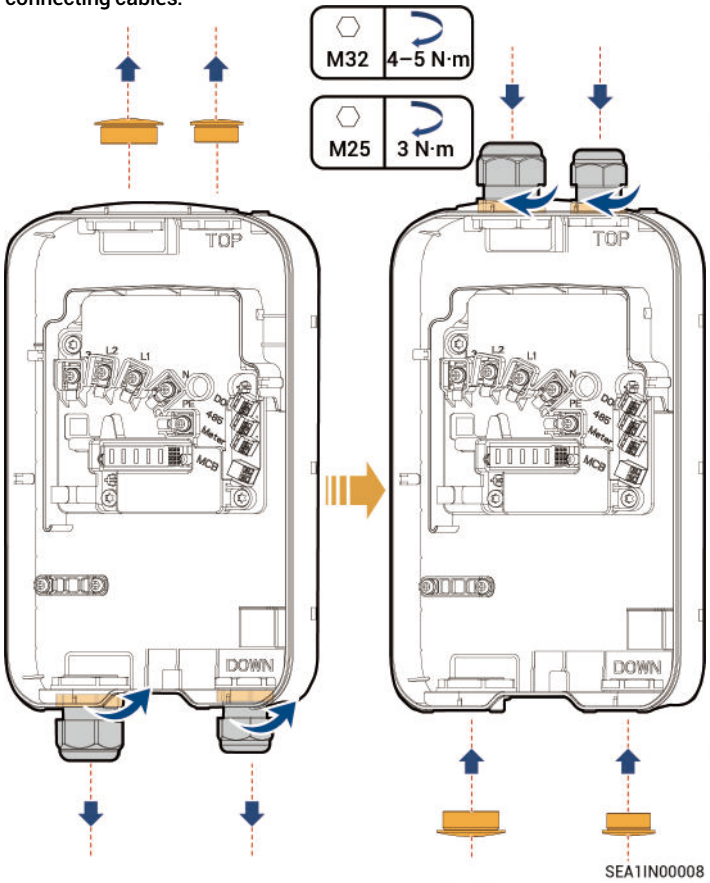
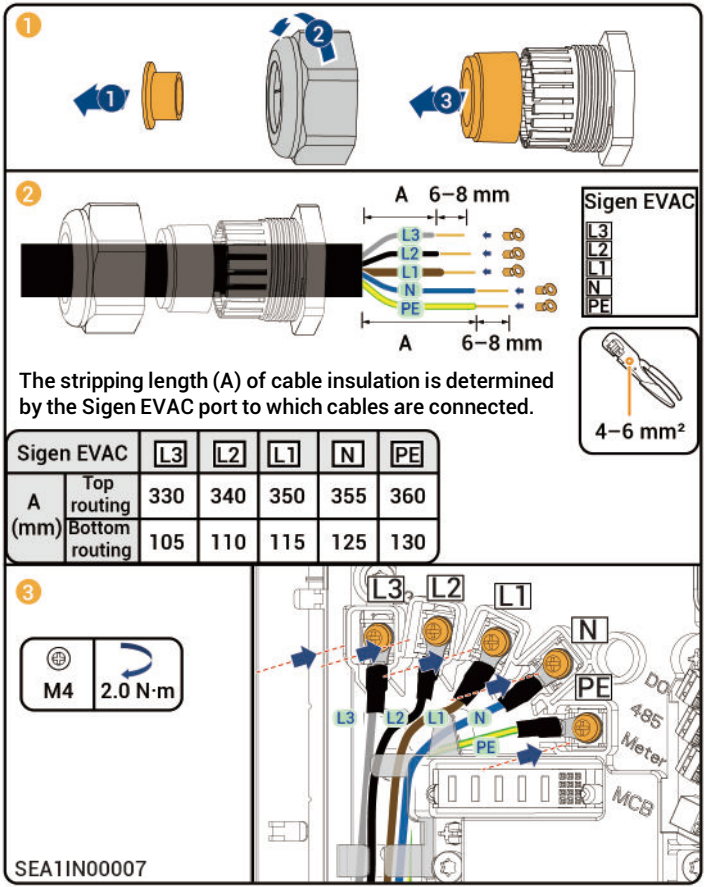
Top Routing

Install the water-proof connector at the bottom to the top before connecting cables.



5.3 AC Input Cable Connection

This section will take three-phase five-wire system as an example to introduce the connection procedure.



The stripping length (A) of cable insulation is determined by the Sigen EVAC port to which cables are connected.

Sigen EVAC		L3	L2	L1	N	PE
A (mm)	Top routing	330	340	350	355	360
	Bottom routing	105	110	115	125	130

5.4 RS485/DO Signal Cable Connection

Definitions of RS485 Ports and Connection Relationship with Power Sensor

Connect one end of the RS485 signal cable to Sigen EVAC and the other end to Power Sensor.

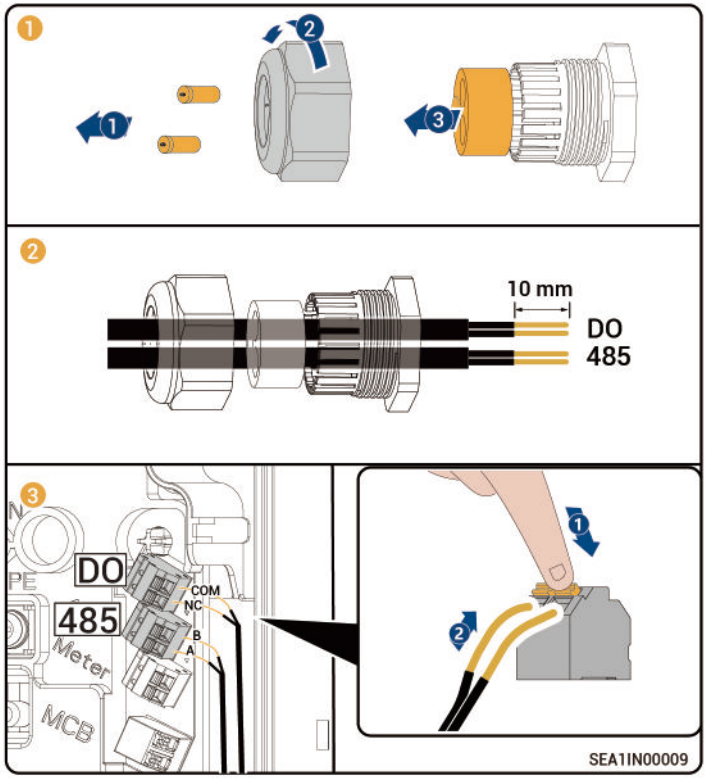
PIN	Definitions	Sigen Sensor TP-CT120-DH (SDM630 MCT 40mA)
RS485_A	RS485 signal_A+	14
RS485_B	RS485 signal_B-	13

Tips

For appearance and connection details of the Power Sensor, refer to the User Manual supplied with the product.

Definitions of DO Port (1 A, 30 Vd.c.)

PIN	Definitions
COM	Output signal COM
NC	Output signal NC

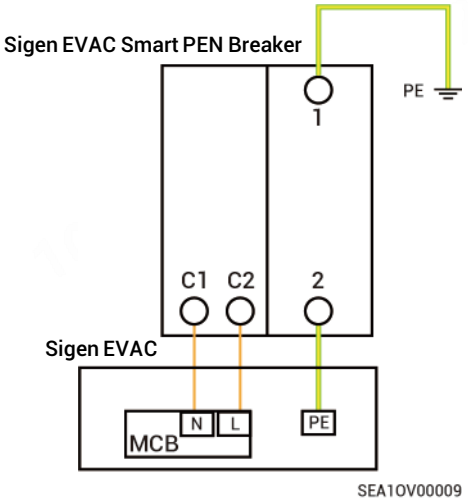


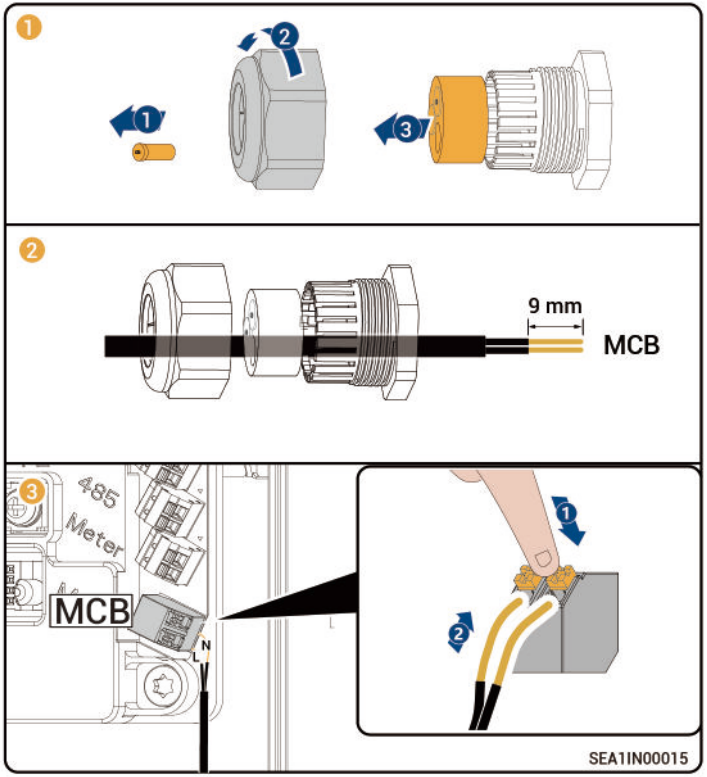
5.5 (Optional) Connection of PEN control lines

Definitions of MCB Ports and Connection Relationship with Sigen EVAC Smart PEN Breaker

PIN	Definitions	Sigen EVAC Smart PEN Breaker[1]
N	Output N level	Terminal C1
L	Output L level	Terminal C2

Note [1]: The corresponding wiring terminal of the Sigen EVAC Smart PEN Breaker



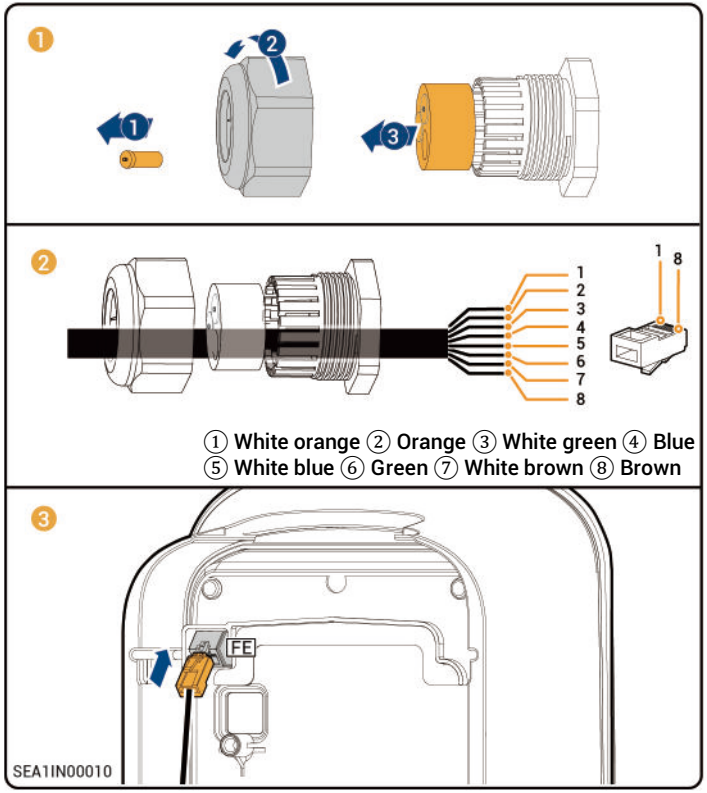


Tips

For the information of appearance, installation, and wiring of Sigen EVAC Smart PEN Breaker, refer to the instructions on the equipment.

5.6 FE Signal Cable Connection

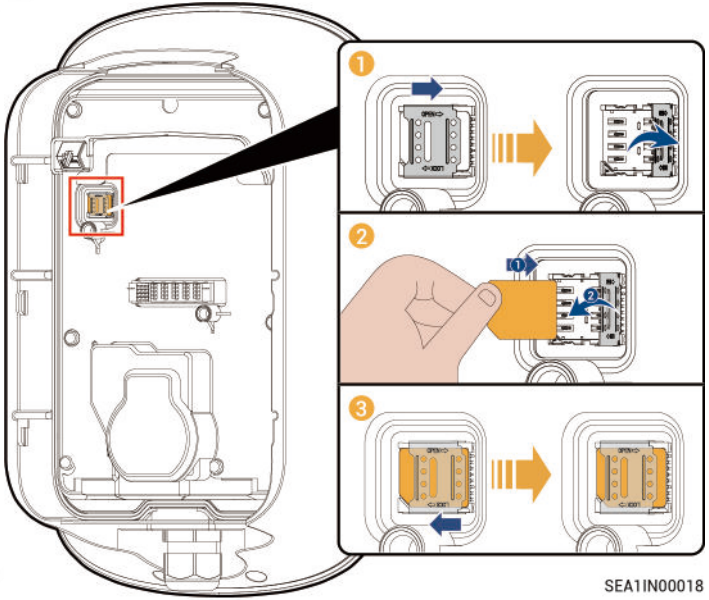
Connect one end of the FE signal cable to Sigen EVAC and the other end to a router.



5.7 Installation of SIM Card

Tips

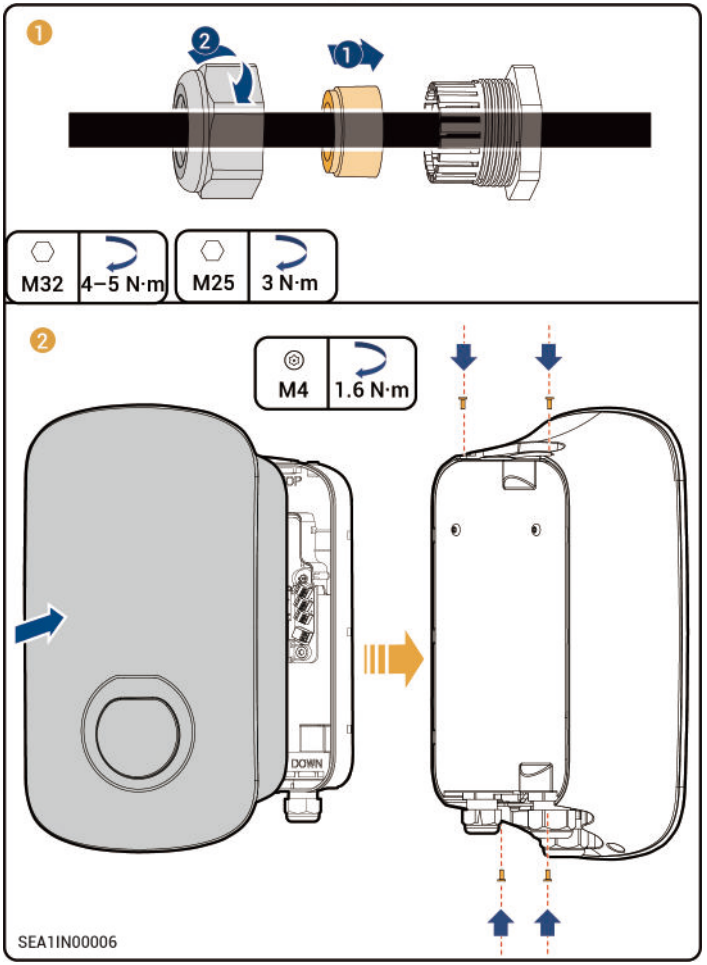
- Install the SIM card when 4G communication is enabled.
- SIM cards are supplied by users and standard SIM cards are recommended (size: 25 mm×15 mm, capacity ≥ 64 KB, traffic ≥ 128 MB/month).



5.8 Installing Panel

Check the following items against the provided table, tighten routing holes, and install the panel.

No.	Check Item
1	The equipment is securely installed.
2	AC cables and signal cables are properly connected without omission.
3	Lock screws or terminals are installed in place without any looseness.
4	Cutouts of cable ties are free of burr or sharp edges.
5	Unused ports are protected with water-proof covers or plugs.
6	No construction residue inside and outside the equipment.

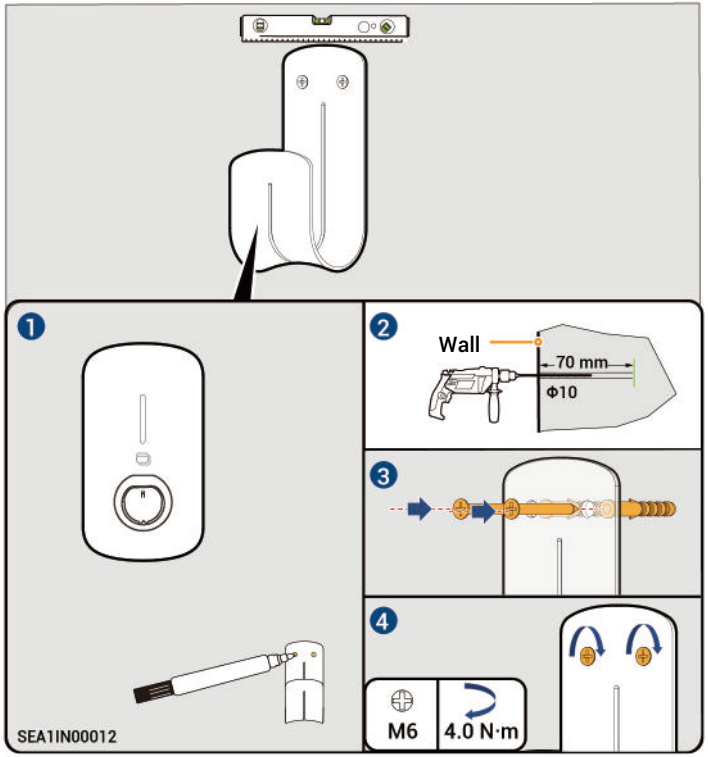


5.9 Installing Cable Holder and Placing Charging Connector

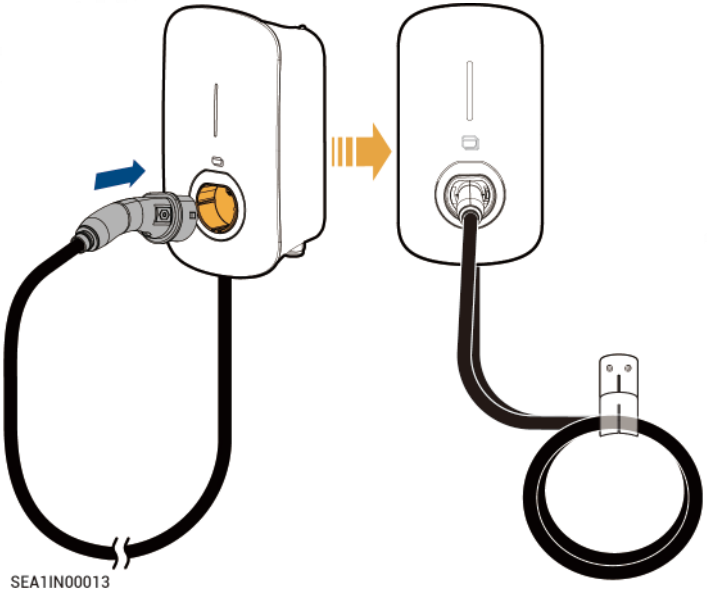
Tips

This section applies only to Sigen EVAC 7/11/22 4G T2 WH.

1 Install the cable holder.

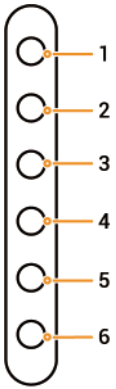


2 Place the charging connector.



6 Power-on and New System Creation

1. Turn on the pre-AC switch.
2. Observe the indicator status on the front panel of Sigen EVAC to understand the operating conditions.
3. When the indicator turns green and is steady on or breathing blinking, create a new system in the mySigen app.



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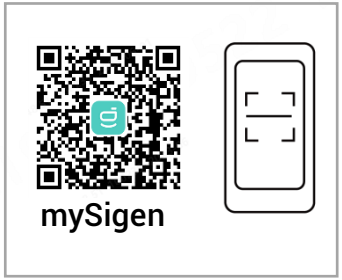
Illuminated Indicator	Color	Status	Meaning
All	Multicolored	Steady on	Starting, initializing configuration.
1		Steady on	In standby mode. Not connected to the internet, charging connector not inserted into the vehicle.
1		Breathing blink	In standby mode. Connected to the internet, charging connector not inserted into the vehicle.
All		Steady on	• RFID card not read. The charging connector is connected to the vehicle. • Charging completed.
All		Breathing blink	You have registered the charging time, and the charging connector has already been connected to your vehicle.
All		Blink	RFID card read. Get ready to charge vehicles.
All		Flowing blink	Charging.
None	-	-	Not powered on or low voltage.
1		Blink	Equipment electrical leakage.
1		Steady on	Relays within the equipment getting stuck.
1, 2		Blink	Overvoltage or undervoltage protection.
1–3		Blink	Overcurrent protection.
1–4		Blink	Overtemperature protection.
1–5		Blink	Grounding fault.
All		Blink	Communication failure between the equipment and the vehicle.
1, 2		Steady on	Other malfunctions.

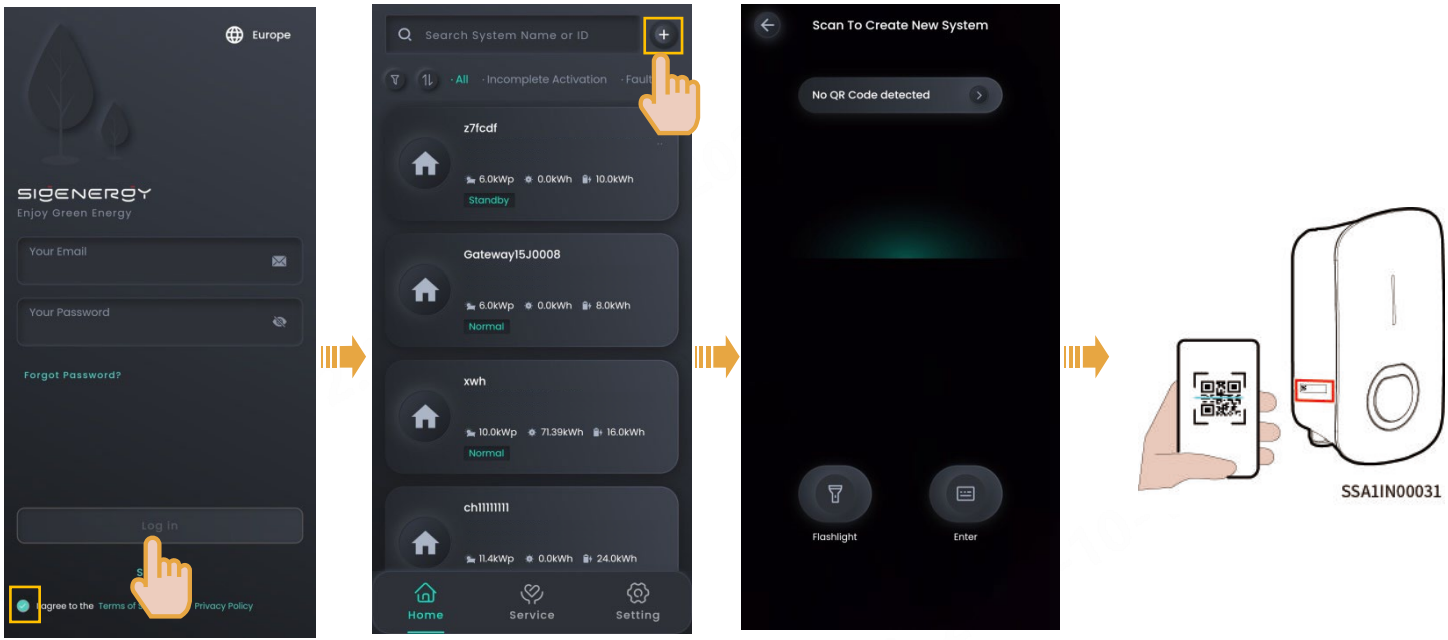
Downloading mySigen App and Creating New System

1 Please visit https://www.sigenergy.com and go to "Partner"→"Register Now" and sign up for your account.

2 Download the mySigen app to initiate the creation of a new system for your equipment.



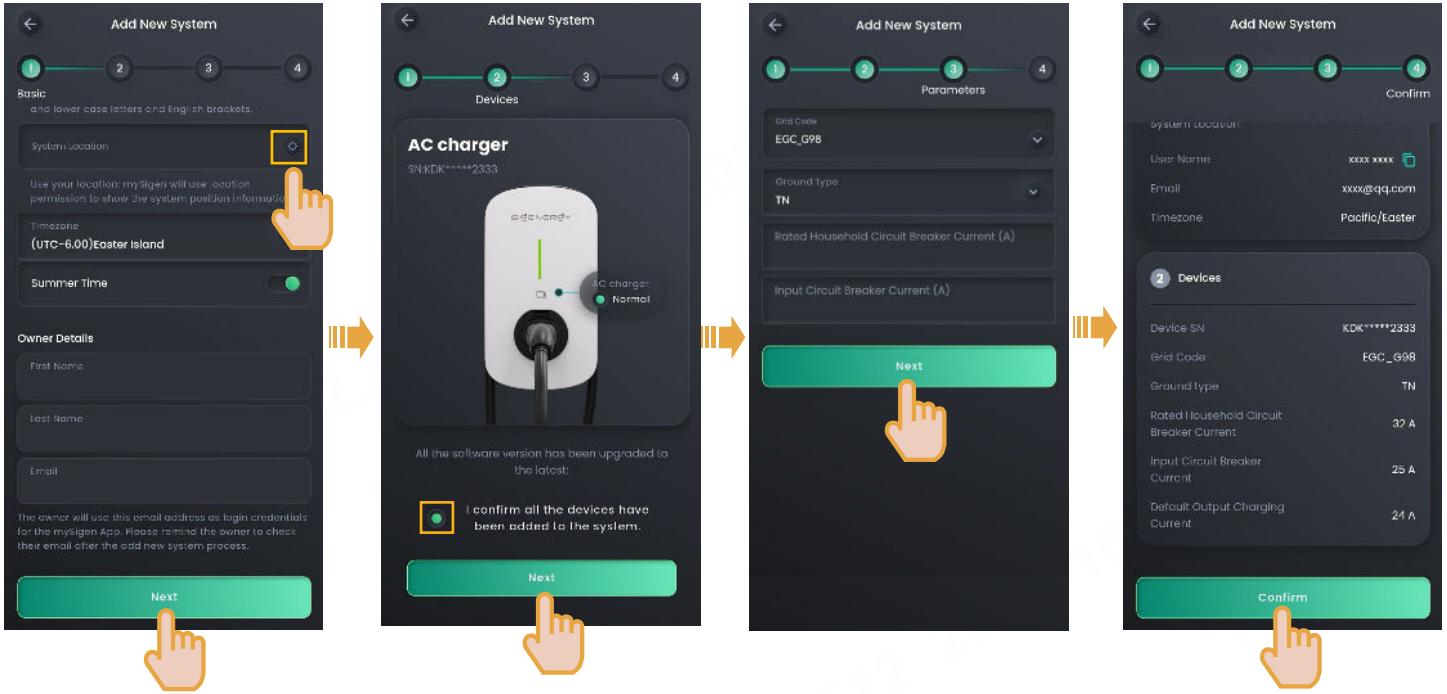
Networking of the Charger



Tips

The following steps are different when the equipment has already been connected or not connected to the internet (that is, FE and 4G communication fault), as described below.

Already connected to the internet:



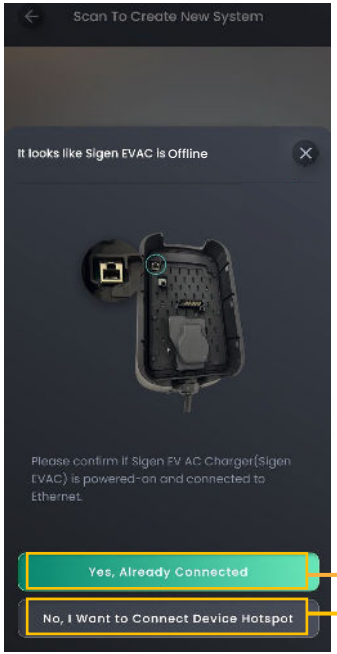
Manually locate the address, set the Timezone, and enter Owner Details.

Perform upgrades where necessary.

Set parameters as needed. Rated Household Circuit Breaker Current > Input Circuit Breaker Current

3 After creating a new system, the installer should ask the owner to check the email sent from "sigencloud" within 24 hours to activate the account, log in to the app, and bind the RFID card.

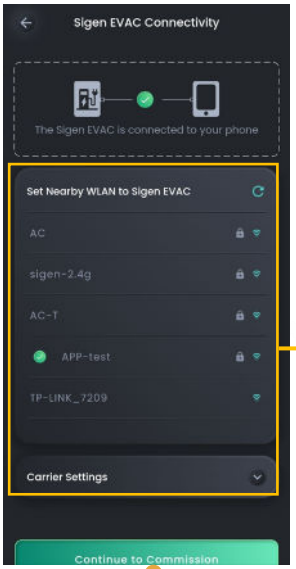
Not connected to the internet (that is, FE and 4G communication fault):



If the equipment has already been connected to the internet, click this button and go to the Create New System page and perform operations by referring to the description in the "already connected to the internet" section.

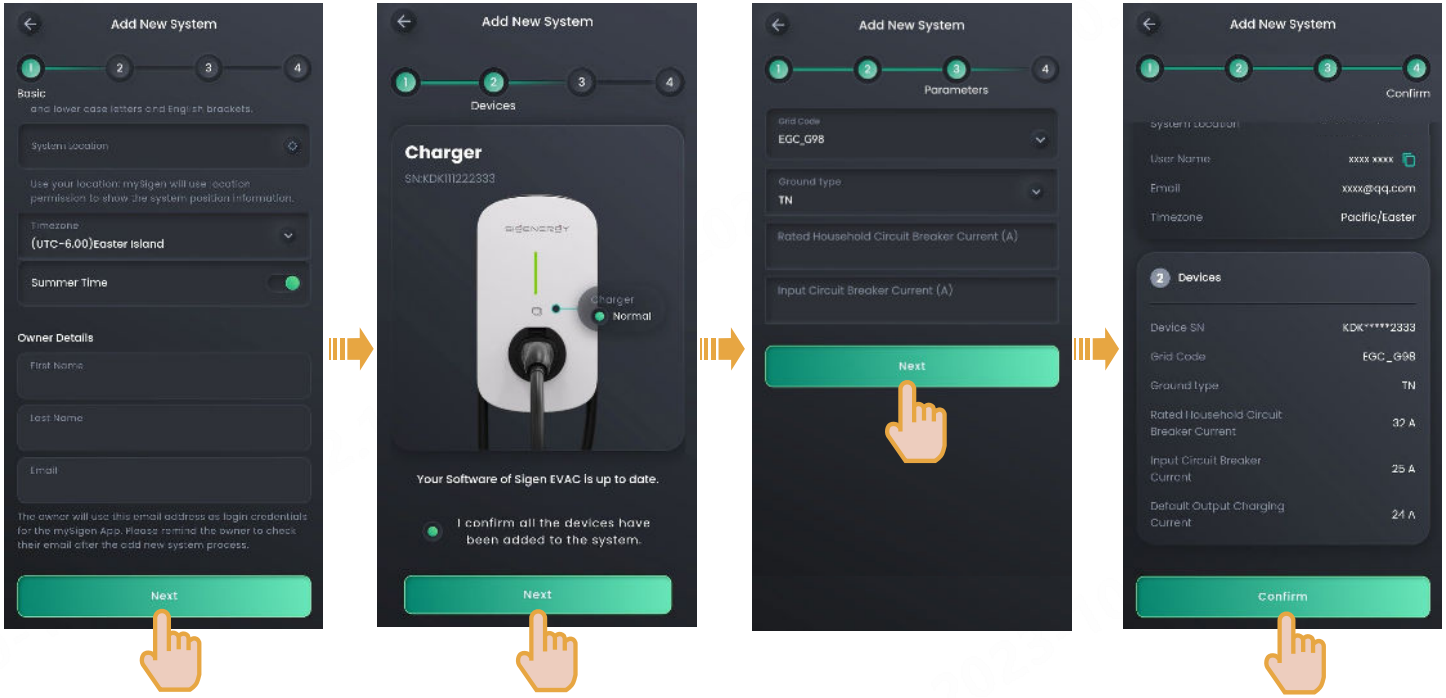
Click this button if the equipment is still not connected to the internet

Connect to the equipment's WLAN hotspot. The hotspot is named as equipment SN and the passcode is given on the UI.



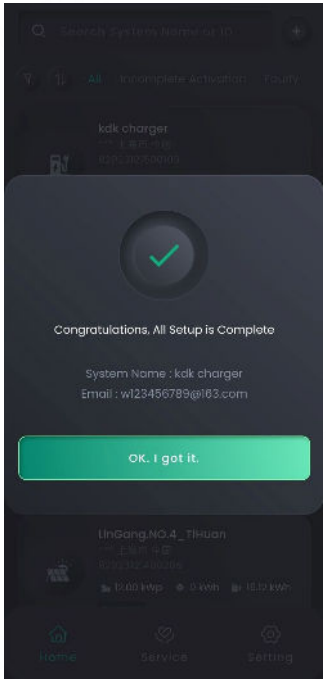
If the WLAN hotspot at the owner's premises is connected or if the SIM card APN is set (the device has a SIM card installed), click "Finished" to go to the page for creating new systems. You can refer to the description in the "already connected to the internet" section

If there is no available WLAN hotspot at the owner's premises, or if the device has no SIM card installed, click "Continue to Commission" and follow the on-screen instructions to proceed



Set the Timezone, and enter Owner Details.

Set parameters as needed.
Rated Household Circuit Breaker Current > Input Circuit Breaker Current

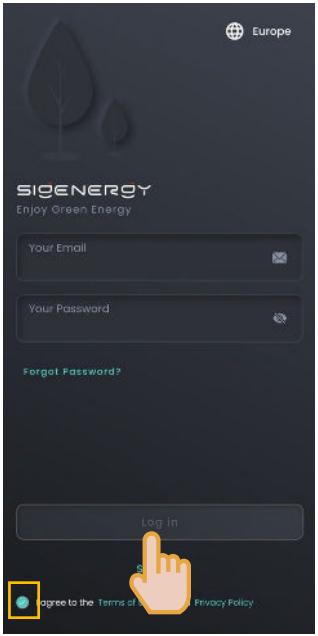


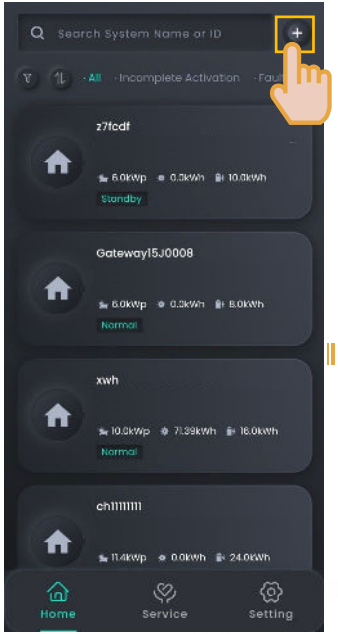
3 After creating a new system, the installer should ask the owner to check the email sent from "sigencloud" within 24 hours to activate the account, log in to the app, and bind the RFID card.

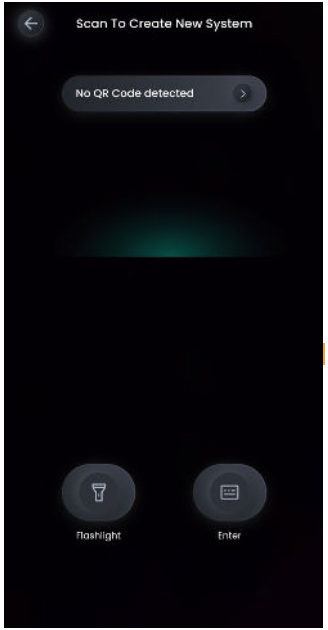
Tips

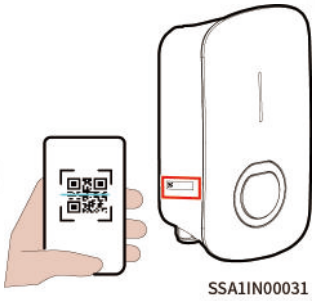
- The screen for creating new systems differs slightly between PV charging and PV storage & charging networking, but the operations are the same. The illustrations here are for reference only. The actual screen display shall prevail.
- Before creating new systems, please check that Sigen EVAC is connected to our inverter with the Fast Ethernet network cable.

Creating New Systems in Both Sigen EVAC and Other Devices

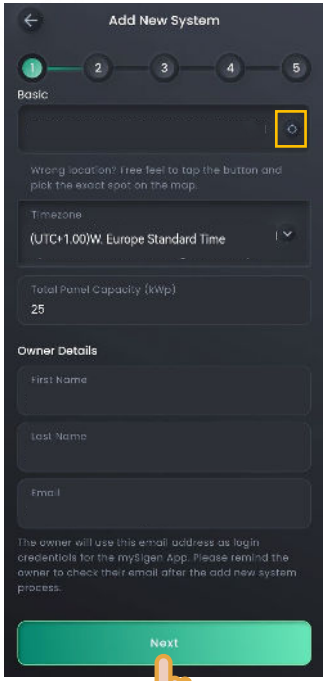






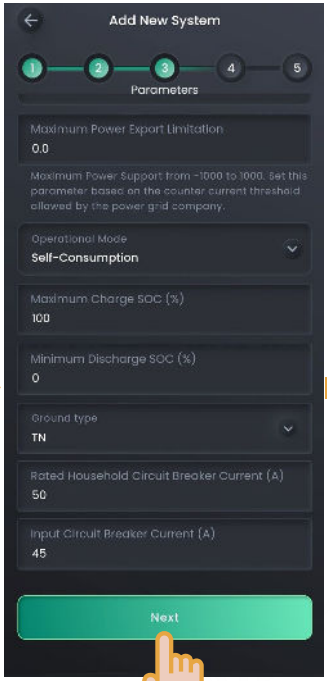


Scan the SN QR code on our inverter or Sigen EVAC in the networking

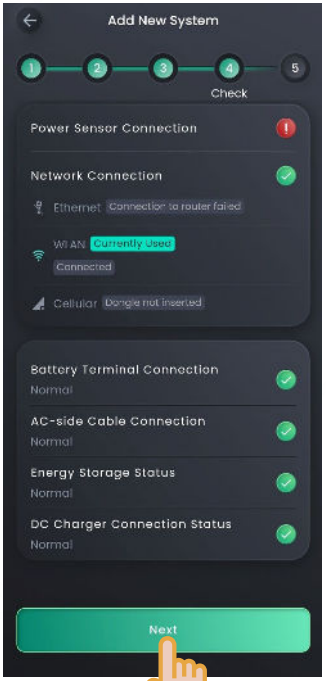


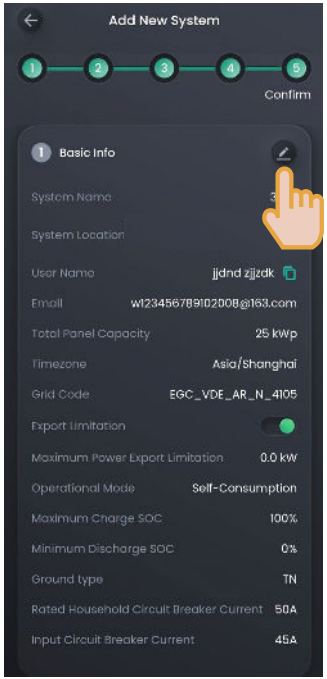
Manually locate the address, set the Timezone, and enter Owner Details.

Perform upgrades where necessary.



Set parameters as needed.
Rated Household Circuit Breaker Current > Input Circuit Breaker Current





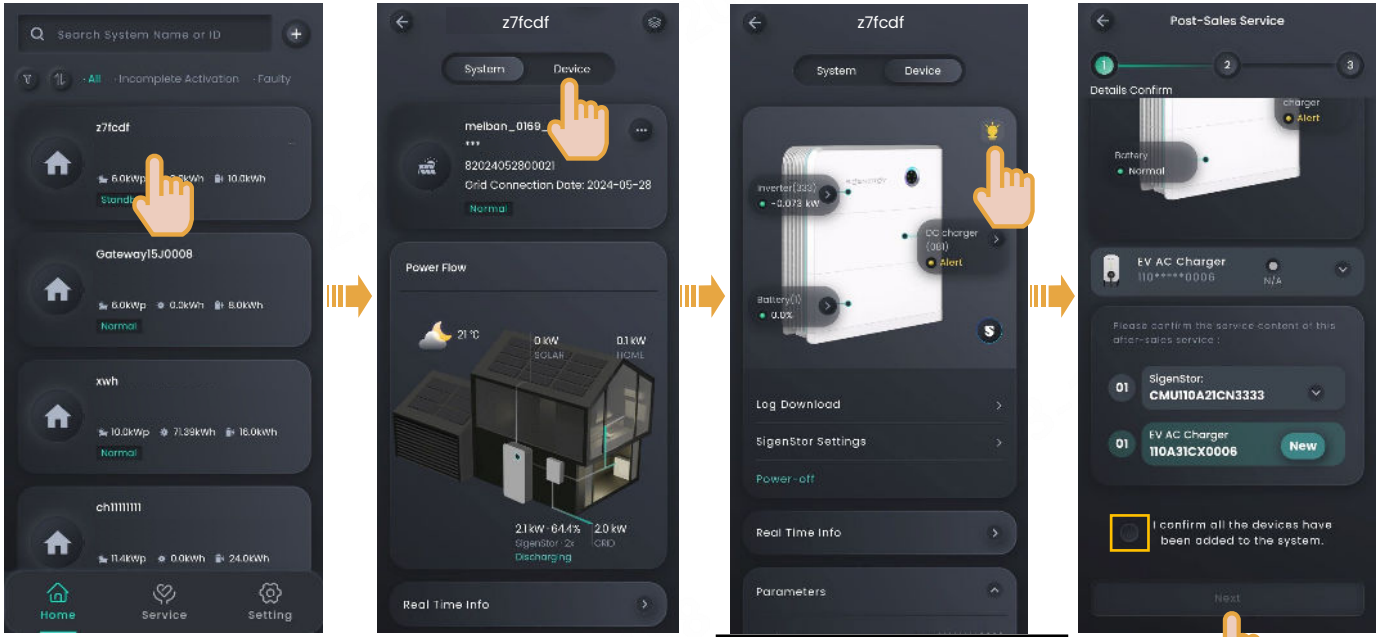
To modify the parameter values you set before, click to confirm the modification and create new systems

3 After creating a new system, the installer should ask the owner to check the email sent from "sigencloud" within 24 hours to activate the account, log in to the app, and bind the RFID card.

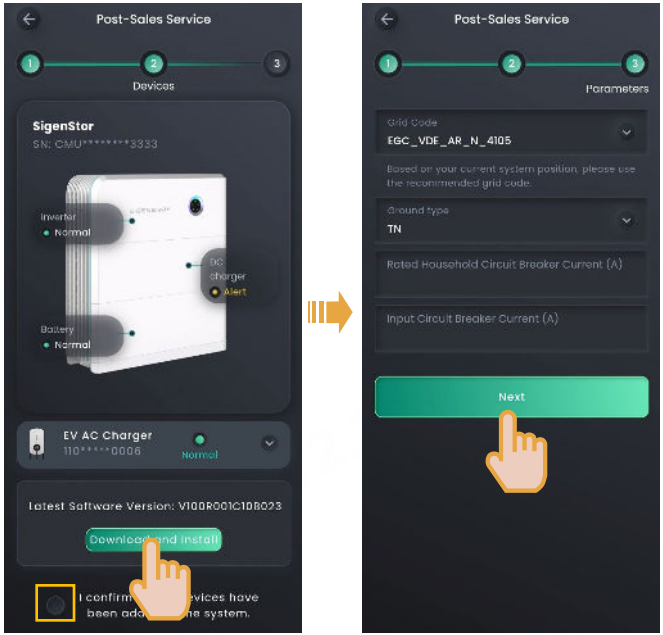
Tips

- The screen for creating new systems differs slightly between PV charging and PV storage & charging networking, but the operations are the same. The illustrations here are for reference only. The actual screen display shall prevail.
- Before creating new systems, please check that Sigen EVAC is connected to our inverter with the Fast Ethernet network cable.

Adding Sigen EVAC to an Existing Power Station



If is not displayed, it may be due to a lower version of the Sigen EVAC, which requires an upgrade. If you have any questions, please contact our technical engineers.



Perform upgrades where necessary.

Set parameters as needed.
Rated Household Circuit Breaker Current > Input Circuit Breaker Current

Sigenergy Technology Co., Ltd.

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