GOODWE



User Manual

AC Charger

HCA Series

(7-22kW) G2

V1.6-2026-07-20

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Note

Due to product version upgrades or other reasons, the document content will be updated from time to time. Unless otherwise specified, the document content cannot replace the safety precautions on the product label. All descriptions in the document are for guidance only.

Preface

This document mainly introduces the product information, installation and wiring, configuration and commissioning, fault troubleshooting, and maintenance of the inverter. Before installing and using this product, please read this manual carefully to under stand the product safety information and familiarize yourself with the functions and features of the product. The document may be updated from time to time. Please obtain the latest version of the materials and more product information from the official website.

Applicable Products

This document applies to the following models of charging piles (hereinafter referred to as "HCA").

- GW7K-HCA-20
- GW11K-HCA-20
- GW22K-HCA-20

Applicable personnel

For use only by professionally trained personnel who are familiar with local codes, standards, and electrical systems and have thorough knowledge of this product.

Symbol Definitions

To better use this manual, the following symbols are used to highlight important information. Please read the symbols and descriptions carefully.

⚠Danger
Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠Warning
Indicates a moderately hazardous situation which, if not avoided, could result in death or serious injury.
⚠Caution
Indicates a low potential hazard which, if not avoided, could result in moderate or minor injury.
Note
The emphasis and supplementary content may also provide tips or tricks for optimal product use, helping you solve a problem or save time.

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1 Safety Precautions

The safety precautions contained in this document must always be strictly observed when operating the equipment.

Note
The charging pile has been strictly designed in accordance with safety regulations and has passed testing. However, as electrical equipment, relevant safety instructions must be followed before any operation. Improper operation may result in serious injury or property damage.

1.1 General Safety

Note
• Due to product version upgrades or other reasons, the document content may be updated from time to time. Unless otherwise specified, the document content shall not replace the safety precautions on the product label. All descriptions in the document are for guidance only. • Before installing the equipment, please read this document carefully to under stand the product and precautions. • All operations of the equipment shall be performed by professional and qualified electrical technicians, who shall be thoroughly familiar with the relevant standards and safety regulations at the project location. • When operating the charging pile, use insulated tools and wear personal protective equipment to ensure personal safety. When to uching electronic components, wear anti-static gloves, anti-static wrist straps, anti-static clothing, etc., for the Protection of the charging pile from electrostatic damage. • Any equipment damage or personal injury caused by failure to install, use, or configure the charging pile in accordance with the requirements of this document or the applicable user manual shall not be with in the scope of responsibility of the equipment manufacturer. For more product warranty information, please visit the official website: https://en. goodwe. com/warranty.

1.2 Charging pile safety

Danger

- Charging pile equipment components must not be disassembled privately, and the charging gun cable must not be extended, otherwise it may lead to a reduction in the Ingress Protection Rating of the charging pile or cause electric shock hazards.
- The charging pile only supports charging electric vehicles. Do not connect other devices.
- After using the charging gun, please put the protective cap back on the gun head, coil the charging cable, and hang it on the protruding hook of the charging pile.
- Avoid over-bending, squeezing, or crushing the charging connector and cable, otherwise equipment damage may occur.
- When performing installation, maintenance, or other operations on the charging pile, the charging pile must be de-energized and the upstream switch disconnected.
- It is strictly prohibited to to uch the charging gun core while the charging pile is energized.

Warning

Please regularly check whether the charging pile enclosure and the charging gun are normal in appearance.

Danger

After installation of the charging pile, the labels and warning signs on the enclosure must be clearly visible and shall not be obscured, altered, or damaged.

The warning label on the charging pile cabinet is as follows:

	DANGER: HIGH VOLTAGE. The charging pile operates with high voltage. Before performing installation or maintenance operations on the charging pile, ensure that the charging pile has been de-energized.		Delayed discharge. After the equipment is de-energized, wait 5 minutes until the equipment is fully discharged.
	Please read the product manual carefully before operating the equipment.		Potential hazards exist after the equipment is in operation. Please take protective measures when operating.
	The surface of the charging pile is at high temperature. Do not to uch while the equipment is in operation, otherwise it may cause burns.		RCM Mark.
	CE marking		The equipment must not be disposed of as household waste. Please dispose of the equipment in accordance with local laws and regulations, or return it to the equipment manufacturer.
	Brazilian ANATEL mark		

1.3 Personnel Requirements

Note

- Personnel responsible for installing and maintaining equipment shall first under go rigorous training, under stand all safety precautions, and master proper operating methods.
- Only qualified professionals or trained personnel are permitted to install, operate, maintain, or replace equipment or components.

1.4 Declaration of Conformity

Europe

Equipment with wireless communication functions that may be sold on the European market shall comply with the requirements of the following directives:

- Radio Equipment Directive 2014/53/EU (RED)
- Restrictions of Hazardous Substances Directive 2011/65/EU and (EU) 2015/863 (RoHS)

UK

Equipment with wireless communication functionality that may be placed on the UK market shall comply with the requirements of the following directives:

- Radio Equipment Regulations 2017
- The Restrictions of the use of Certain Hazardous Substaances in Electrical and Electronic
  Equipment Regulations 2012 (S.I. 2012/3032)

Brazil

Equipment with wireless communication functions that may be sold in the Brazilian market shall meet the following directive requirements:

- Incorpora produto homologado pela Anatel sob número HHHHH-AA-FFFFF.
- Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados. Para maiores

informações, consulte o site da ANATEL www.gov.br/anatel/pt-br.

2 Product Introduction

2.1 Introduction

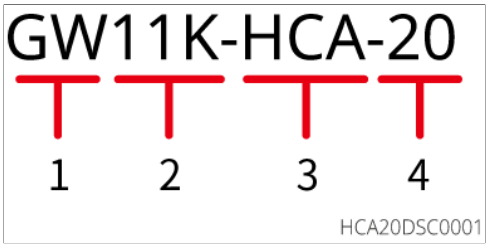
The HCA series charging pile is a residential AC EV charger, mainly used for charging electric vehicles. This product can directly communicate with the inverter and use PV energy for charging; it can obtain smart meter data through the inverter to realize dynamic load management functions; it can directly communicate with the MID meter, providing reimbursable bills.
It supports RFID start, APP start, and can be set for plug-and-charge automatic start via the APP. It also has charging protection, networked monitoring, and other features.

Model Description

This document applies to the following models of charging piles:

- GW7K-HCA-20
- GW11K-HCA-20
- GW22K-HCA-20

Type Designation Meaning

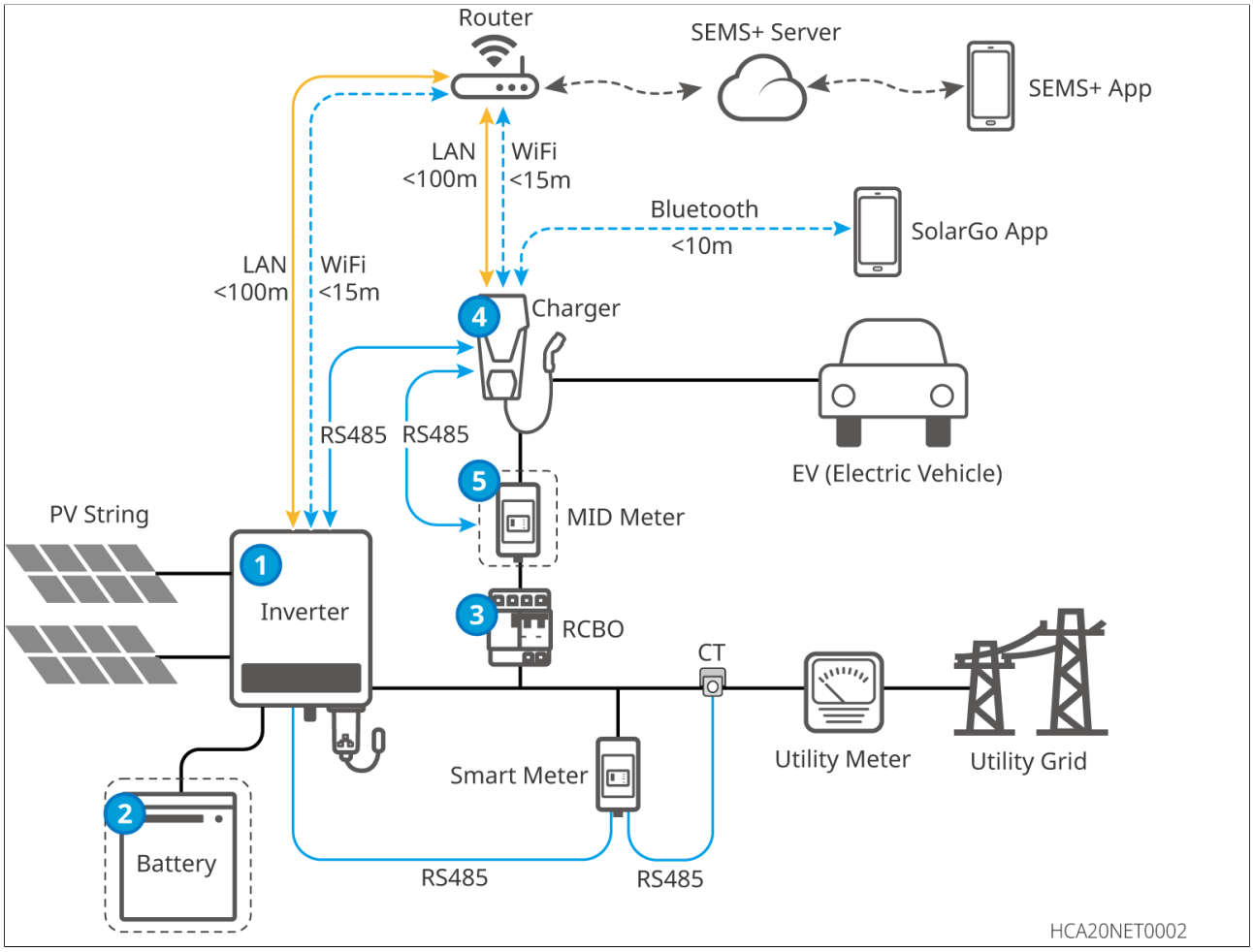


Serial Number	Meaning	Description
1	Brand code	GW: GoodWe

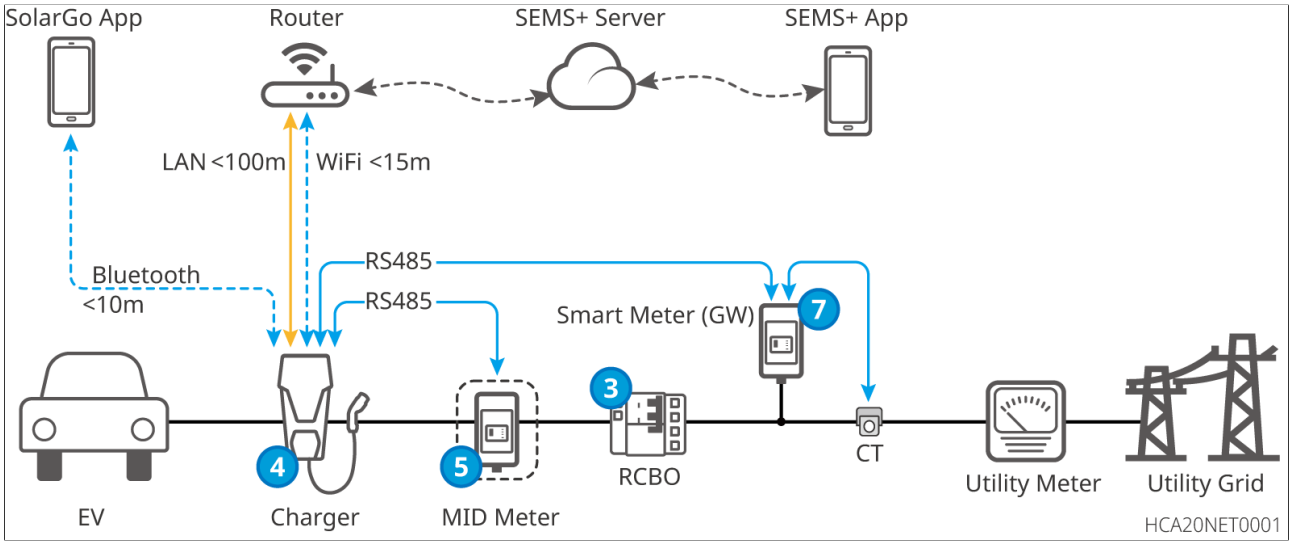
Serial Number	Meaning	Description
2	Rated Power	• 7K: Output power is 7kW • 11K: Output power is 11kW. • 22K: Output power is 22kW.
3	Series Name	HCA: HCA Series
4	Version code	20: second generation

2.2 Application scenarios

Integrated PV-Storage-Charging System



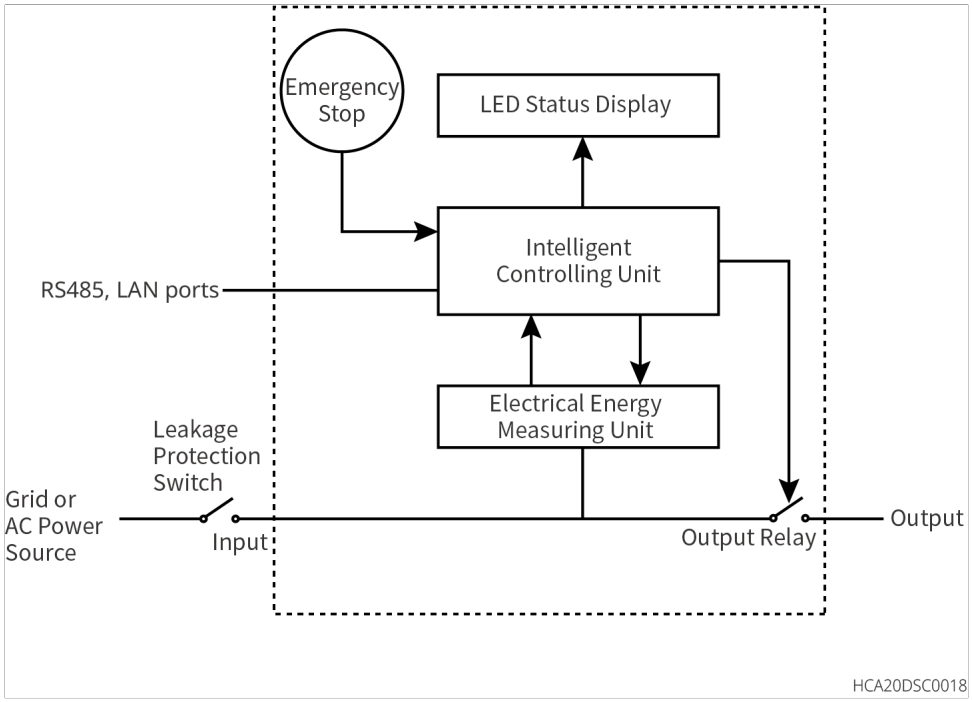
Mains-only connection



Serial Number	component	Description
1	inverter	GoodWe inverter.
2	battery	Batteries compatible with GoodWe inverters are for energy storage systems only.
3	RCBO	Provides residual current protection and over current protection. Contact GoodWe for purchase.
4	charging station	GoodWe HCA Series EV Charger.
5	MID-certified electricity meter	Collect the electricity consumption data of charging piles, which can be used for charging bill reimbursement. **Note** MID meters cannot be used as household energy meters.
6	Smart Meter	Supplied with the inverter or purchased from the inverter manufacturer.
7	electric energy meter	GoodWe smart meter for dynamic load balancing, supported models include GM3000, GM330, GMK110 and GM1000.

circuit block diagram

The circuit block diagram of the charging pile is as follows.

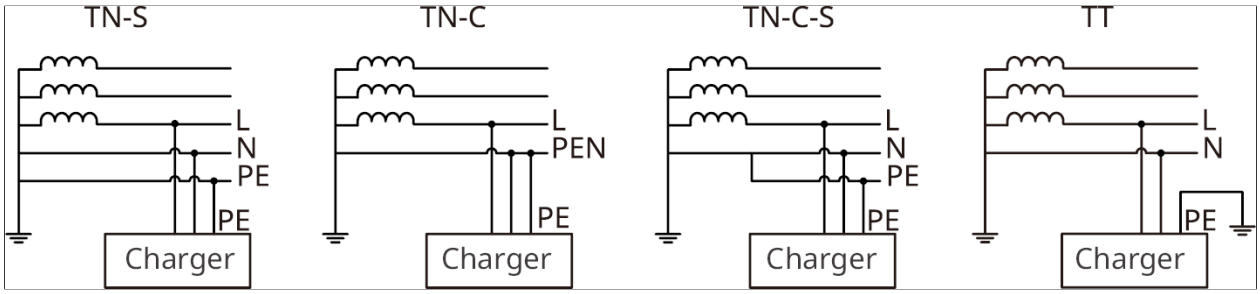


- RS485 communication interface can communicate with photovoltaic inverters or MID meters, etc.
- The LAN communication interface can communicate with the router.
- The input of a single-phase AC charging pile is a single-phase three-wire power cable; the input of a three-phase AC charging pile is a three-phase five-wire power cable.
- Output connects to AC charging gun.
- The EPO switch is an Emergency Stop button.

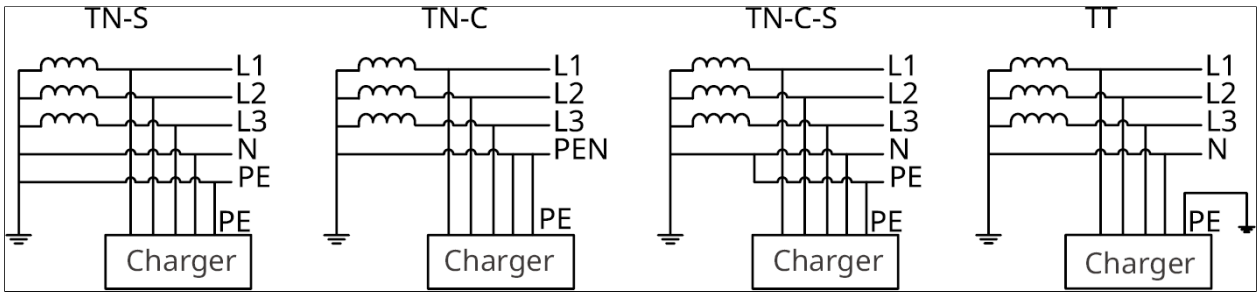
grid for m

Note
Charging piles do not support connection to en power grids.

- Single-phase scenario



- Three-phase scenario



2.3 charging mode

Note
In PV charging and PV + battery charging modes, the EV Charger Power is limited by the inverter's maximum output power.

Fast charging

Charging piles use power from the grid, PV, or battery to charge electric vehicles. The output power of a charging pile defaults to the Rated Power, and users can customize the output power based on actual needs (not exceeding the Rated Power).

PV charging

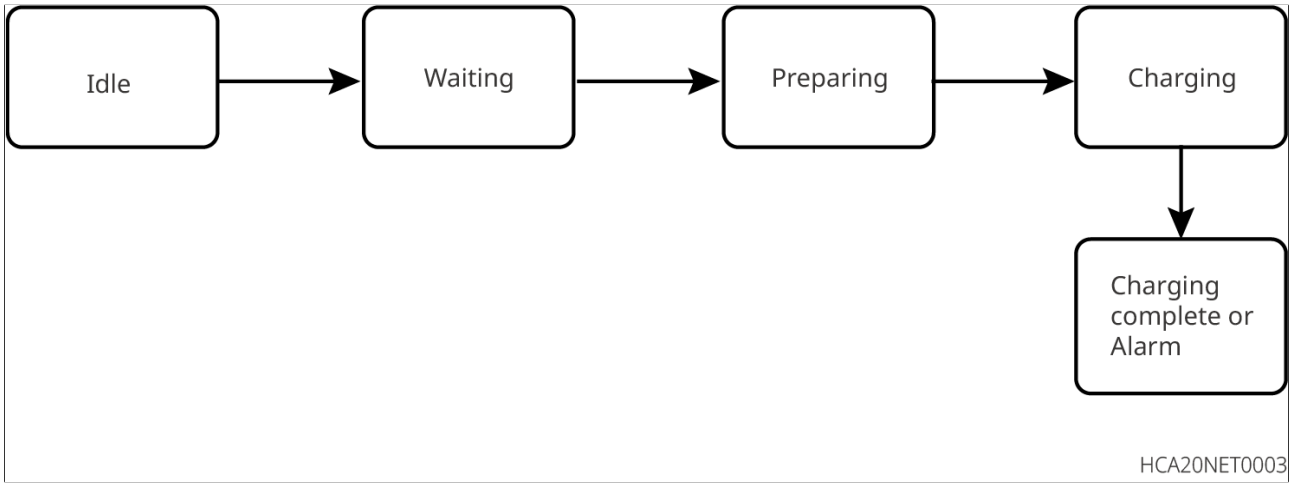
Only PV power is used to charge the electric vehicle; power is prioritized for the load, and the surplus power is used to charge the electric vehicle.

PV+Battery Charging

PV-converted power and battery power are utilized for EV charging. The power is

prioritized for the load, and the surplus is used to charge the EV.

2.4 Operating status of charging pile



2.5 Functional Characteristics

Note

- The actual charging speed depends on the grid-connected available power at the site where the electric vehicle charging station is located, or the power of the vehicle's on-board charger.
- The charging pile has minimum Charging Current and power requirements. The minimum start-up Charging Current per phase is 6A. The refore, for single-phase charging, the minimum charging power is 1.4kW, and for three-phase charging, the minimum charging power is 4.2kW.
- A three-phase charging pile supports single-phase, two-phase, and three-phase charging, but the actual charging power is affected by the vehicle's onboard charging system. When a three-phase charging pile charges a vehicle that only supports single-phase charging, its Max. Charging Power is 1/3 of the Rated Power of the charging pile. When a three-phase charging pile charges a vehicle that only supports two-phase charging, its Max. Charging Power is 2/3 of the Rated Power of the charging pile.

Dynamic Load Management

After Dynamic Load Management is enabled, the charging pile can adjust its charging power (or even suspend charging) based on the acquired household meter data and the user-set incoming circuit breaker current, so as to prevent the incoming circuit breaker from tripping. When the actual incoming current approaches the user-set incoming circuit breaker current, to avoid tripping accidents, the charging power of the charging pile will be gradually reduced until it shuts down. After the charging pile shuts down, it will wait for a period of time, and once it confirms that the remaining current of the incoming circuit breaker meets the conditions for starting the charging pile, it will automatically start up.

Ensure Minimum Charging Power

In PV charging and PV + battery charging modes, after the charging pile is started, when the energy from PV or the battery is insufficient, enabling the "Ensure Minimum Charging Power" function allows support from the grid or the battery to maintain the required power output. Users can enable this function via the SolarGoApp or SEMS+.

Functional Status	Description
Enable	With the support of the grid or the battery, the charging pile continues to charge to ensure the minimum power required for charging (1.4kW for the 7kW module, 4.2kW for the 11/22kW module).
Shutdown	If the surplus power is less than the minimum charging power, the charging pile will stop charging.

single-phase/three-phase switching

Note
Only three-phase charging piles support the single/three-phase switching function.

- ON: When input power is below 4.2, the charging pile automatically switches to single-phase charging mode to avoid purchasing electricity from the grid or shutdown. In single-phase charging mode, the charging power is 1.4 kW. (The switching time between single-phase and three-phase is approximately 3 minutes)

- OFF: The EV charger is in three-phase charging state.

safe and reliable

- The Ingress Protection Rating of the charging pile body is IP66, and the Ingress Protection Rating of the charging gun head is IP55. The charging pile has good dust-proof and waterproof performance, and can be operated and maintained outdoors.
- The charging pile is equipped with over/under voltage protection, over load protection, short-circuit protection, residual current protection, grounding protection, over temperature protection, EPO protection, and lightning protection, ensuring safe and reliable operation of the equipment.

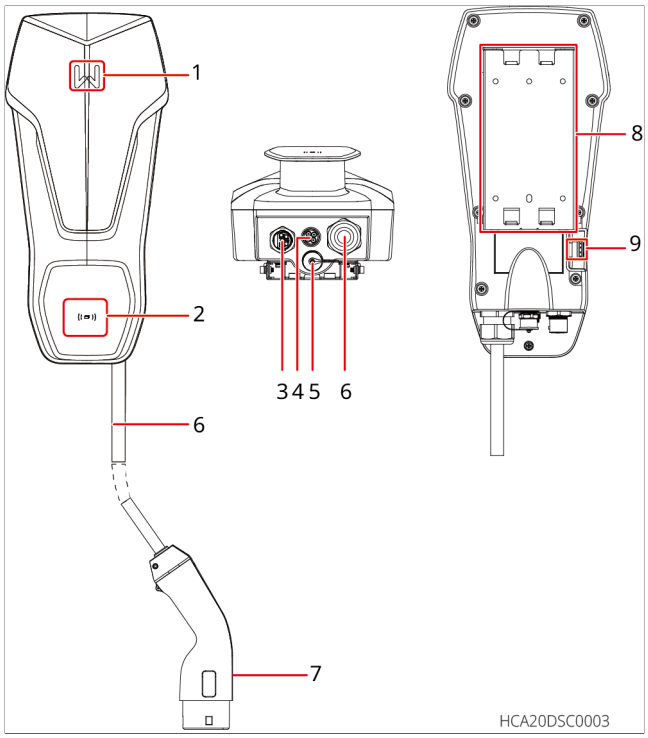
Note
• 2.4G WiFi, Operating frequency :2412-2472MHz, max e.i.r.p :183.99dBm • BLE 1M&2M, Operating frequency :2402-2480MHz, max e.i.r.p:2.99dBm • RFID 13.56MHz, max e.r.p: -47.50dBm

2.6 Appearance Description

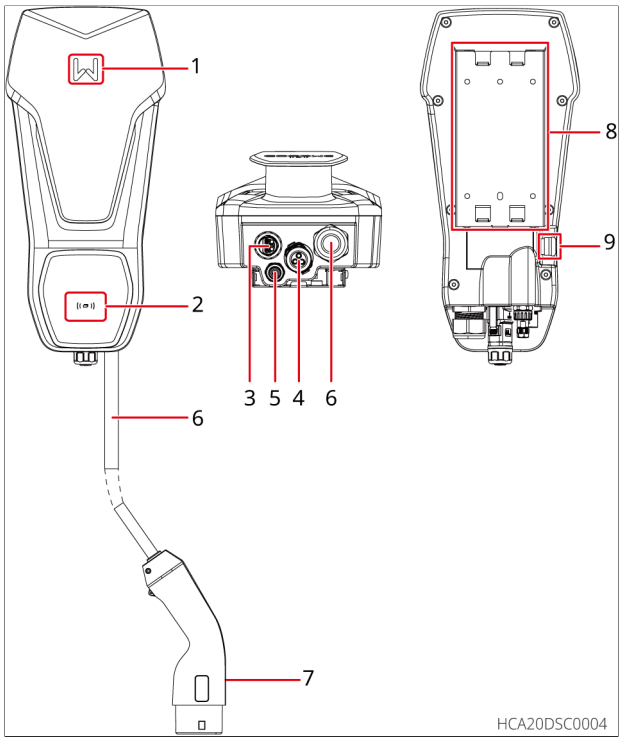
2.6.1 Appearance Introduction

charging station

- Type 1



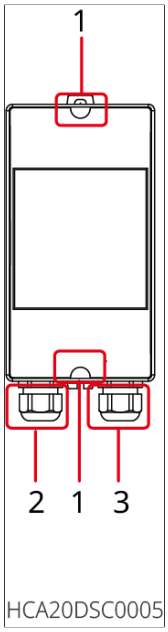
- Type 2



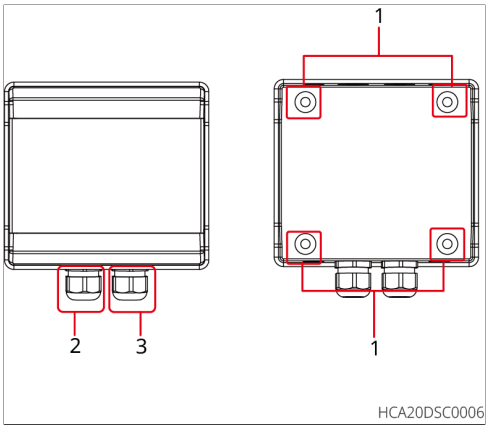
Serial Number	component	Description
1	indicator light	Indicate the operating status of the charging pile.
2	RFID Card Swipe Area	For initiating charging by card swipe.
3	AC cable entry	Connect the single-phase or three-phase AC input lines.
4	RS485 communication port	RS485 cable for communication with the inverter or meter.
5	LAN communication port	Cable for connection and communication with the router.
6	Charging Gun Cable	-
7	charging gun head	Used to connect to the electric vehicle charging port.
8	Mounting bracket	Secure the charging pile onto the carrier.
9	EPO switch	Use this switch for EPO Protection.

Optional RCBO distribution box

- **GW7K-HCA-20**



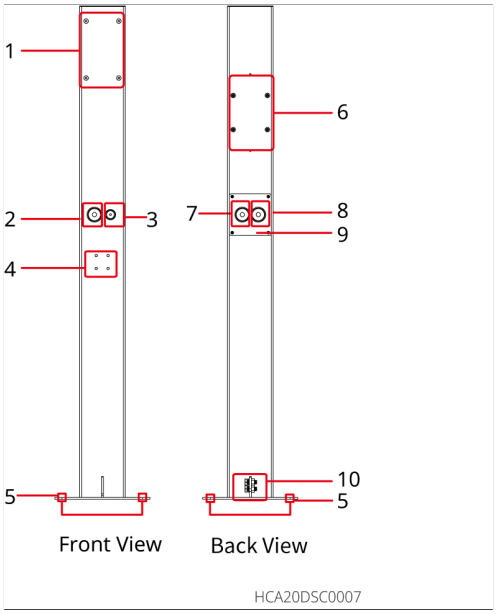
- **GW11K-HCA-20**、GW22K-HCA-20



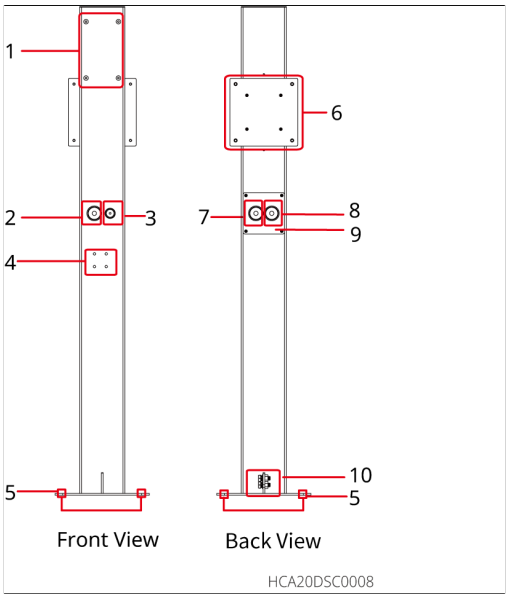
1 Mounting hole positions	2 AC Cable Entries	3 AC cable outlet

Optional Column

- **GW7K-HCA-20**



- **GW11K-HCA-20**、GW22K-HCA-20

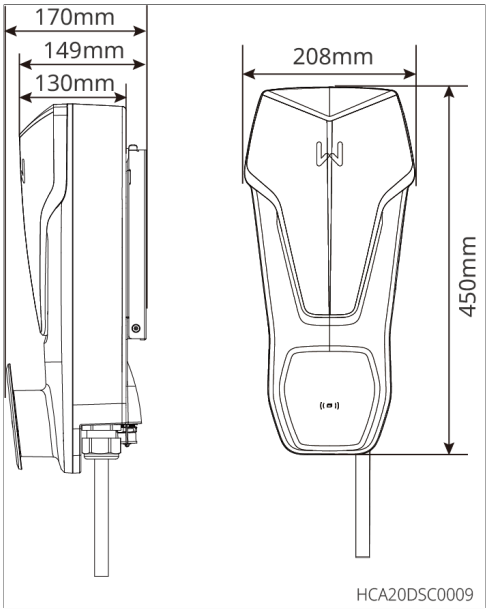


1. Wall-mounted installation position of charging pile	2. AC line connection port of the charging pile	3. Communication line terminal	4. Fixing holes for AC charging connector holster
5. Base Fixing Hole Positions	6. RCBO installation position	7. AC line inlet of RCBO	8. RCBO AC wire outlet

9. Operating window cover plate	10. Protection Grounding Port

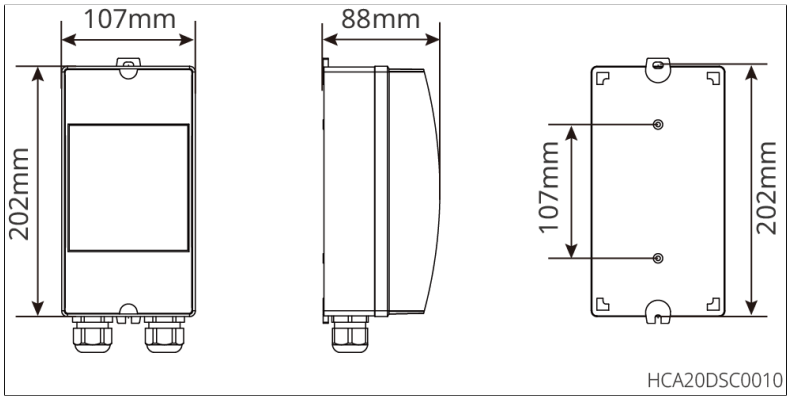
2.6.2 Dimensions

charging station

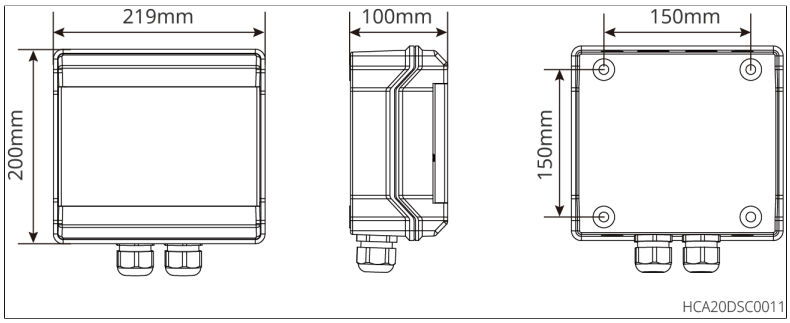


Optional RCBO distribution box

- GW7K-HCA-20

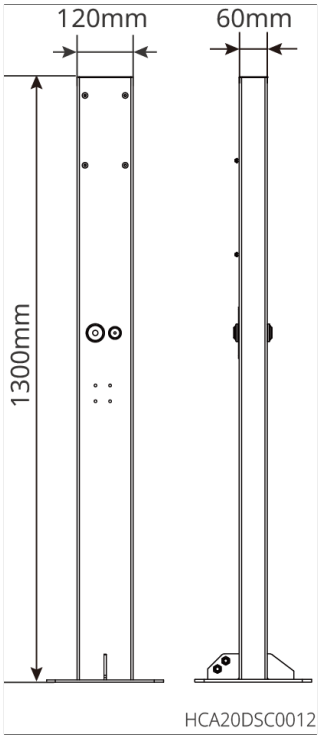


- GW11K-HCA-20、GW22K-HCA-20



Optional Column

- GW7K-HCA-20



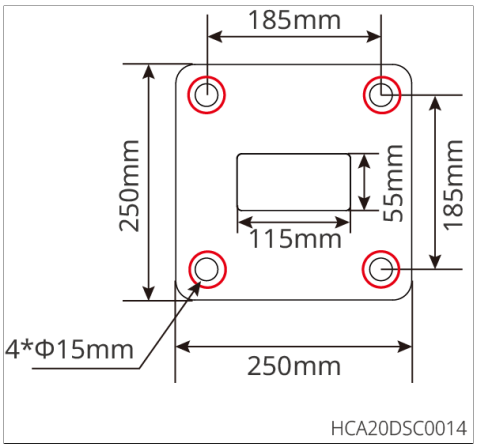
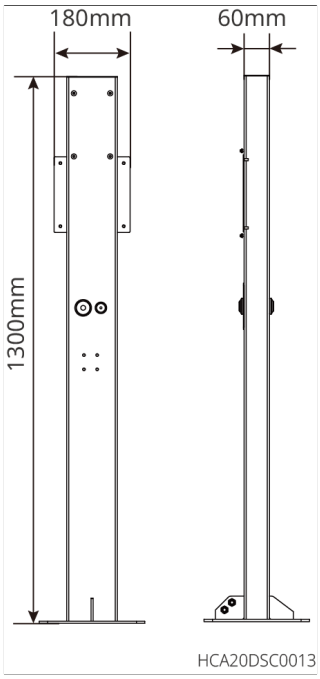


Figure1 Charging pile base

- GW11K-HCA-20、GW22K-HCA-20



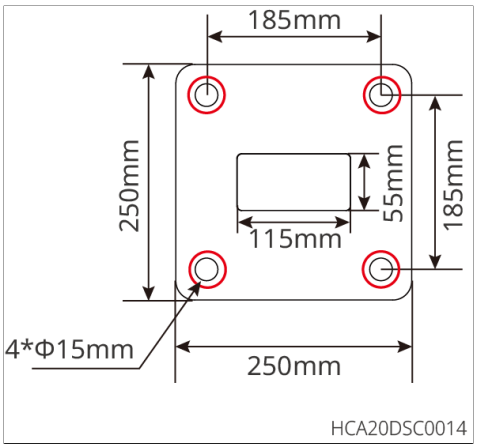


Figure2 Charging pile base

Optional MID meter

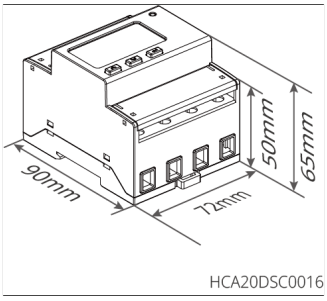


Figure3 Three-phase watt-hour meter

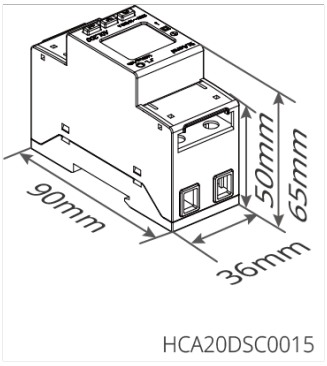


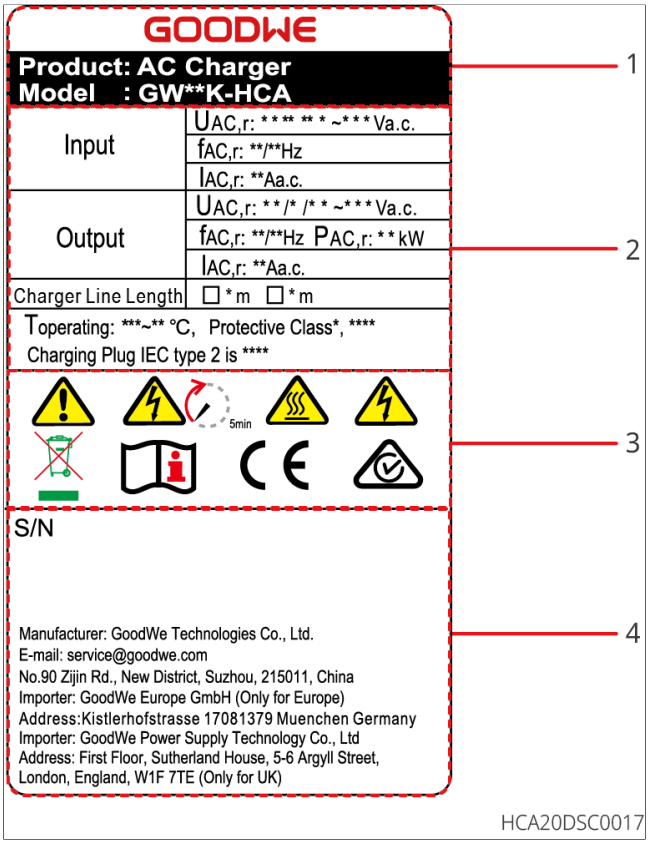
Figure4 single-phase meter

2.6.3 Indicator Light Description

indicator light	color	Description
	Solid green	Charging pile is in standby mode.
	green blinking	The charging pile system is being upgraded.
	Solid blue	Charging the electric vehicle.
	Solid red	Charging pile fault.
	Indicator lamp status when card swiping is abnormal.	
	Red light on for 2s	Swipe card in the state where the charging gun is not inserted.
	Flashes red twice.	Charging pile mismatch.

2.6.4 Nameplate Description

Note
The nameplate is for reference only; the actual product shall prevail.



1. GoodWe trademark and product types and models

2. Product Technical Parameters

3. Product Safety Symbols and Certification Marks

4. Contact Information, Serial Number Information

3 Equipment Inspection and Storage

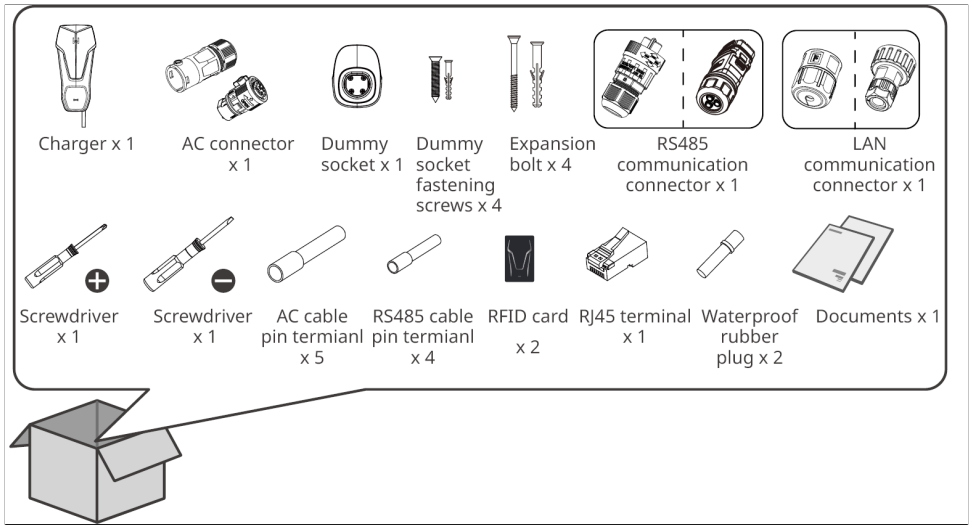
3.1 Pre-acceptance inspection

Before signing for receipt of the product, please carefully inspect the following items:

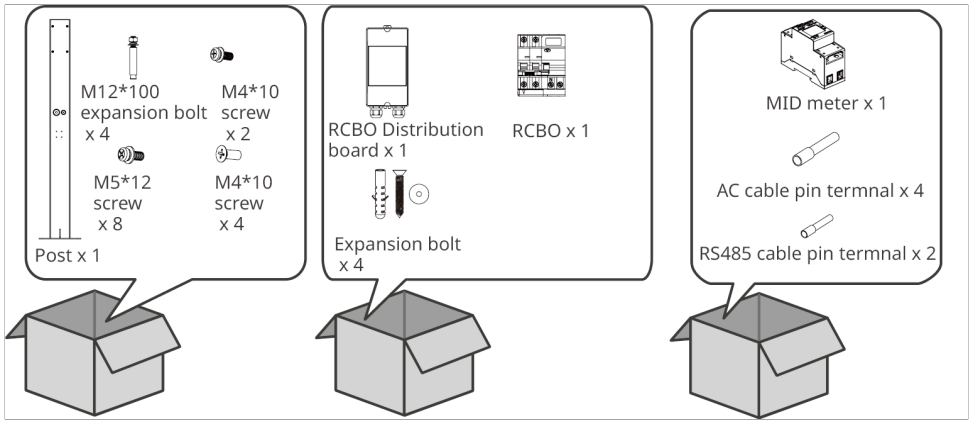
1. Inspect the outer packaging for any damage, such as deformation, punctures, cracks, or other signs that could cause damage to the equipment inside the carton. If damaged, do not open the packaging and contact your dealer.
2. Check whether the charging pile model is correct. If the re is any discrepancy, do not open the packaging and contact your dealer.
3. Check that the delivered items are correct in type and quantity, and inspect the appearance for any damage. If damaged, please contact your dealer.

3.2 deliverable

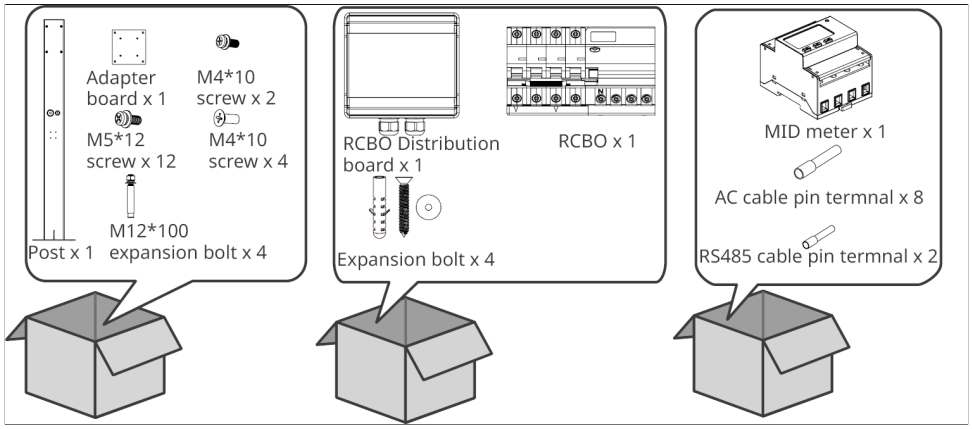
Warning
When performing electrical connections, please use the terminal blocks supplied with the unit. Equipment damage caused by the use of connectors of incompatible models will not be covered by the warranty.



GW7K-HCA-20 (optional)



GW11K-HCA-20 and GW22K-HCA-20 (optional)



3.3 Equipment storage

If the charging pile is not put into use immediately, please store it according to the following requirements:

1. Ensure that the outer packaging box has not been removed and the desiccant inside has not been lost.
2. Ensure the storage environment is clean, with appropriate temperature and humidity ranges, and free from condensation.
3. Ensure that the stacking height and orientation of the charging piles comply with the label instructions on the packaging.
4. Ensure that the charging piles have no risk of toppling over after stacking.
5. After long-term storage, the charging pile must be inspected and confirmed by

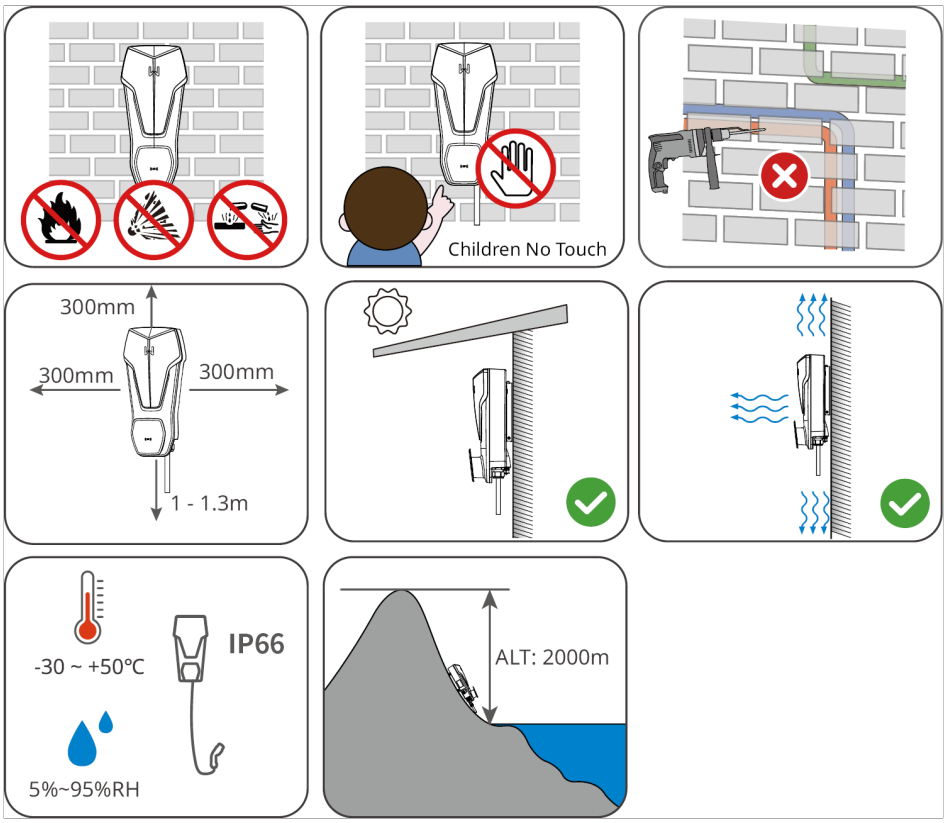
professionals before it can be put back into service.

4 installation

4.1 Installation Requirements

Installation Environmental Requirements

- The equipment shall not be installed in flammable, explosive, corrosive or other hazardous environments.
- The installation location shall be inaccessible to children. The equipment surface may reach high temperatures during operation; precautions must be taken to prevent burns.
- Keep the installation location clear of water pipes, cables, etc. inside the wall to avoid danger during drilling.
- Charging piles are recommended to be installed in sheltered locations.
- The installation space shall meet the equipment ventilation, heat dissipation, and operation space requirements.
- The equipment's Ingress Protection Rating is suitable for both indoor and outdoor installation, and the temperature and humidity of the installation environment must be with in the appropriate range.
- The installation height of equipment shall facilitate operation and maintenance, ensuring that indicator lights and all labels are clearly visible, and wiring terminals are easy to access.
- The installation altitude of the charging pile shall be lower than the Max. Operating Altitude of 2000m.
- Keep away from strong magnetic field environments to avoid electromagnetic interference.

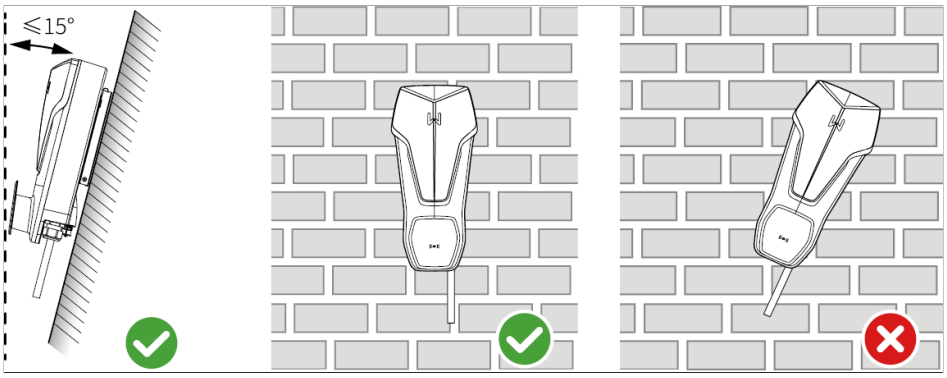


Mounting surface requirements

- The installation carrier shall not be made of flammable materials and shall possess fire-resistant properties.
- Please ensure that the installation carrier is sturdy and reliable, capable of bearing the Weight of the charging pile.

Installation Angle Requirements

- Recommended charging pile installation angle: vertical.
- The charging pile must not be inverted, tilted for ward, tilted backward beyond the specified angle, or installed horizontally.



Installation Tool Requirements

During installation, the following installation tools are recommended. If necessary, other auxiliary tools may be used on site.



4.2 Install charging piles

4.2.1 Charging pile handling

Caution

Prior to installation, the charging pile shall be transported to the installation site. During transportation, to avoid personal injury or equipment damage, please note the following:

- Please deploy corresponding personnel based on the equipment Weight to prevent the equipment from exceeding the Weight range that can be manually carried by people, which could cause it to fall and injure personnel.
- Please wear safety gloves to avoid injury.
- Ensure that the equipment is kept balanced during handling to prevent it from falling.

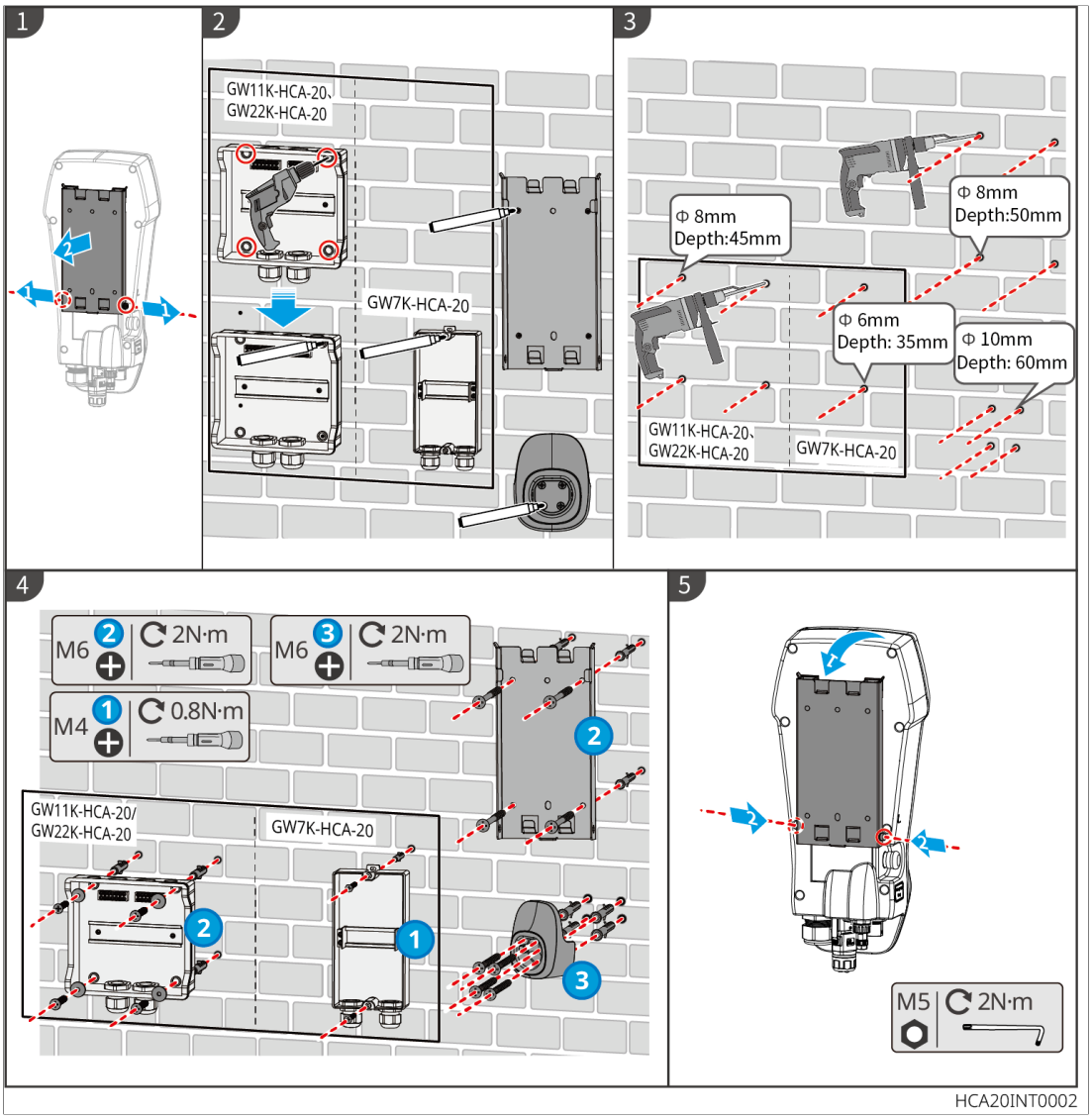
Note

- When drilling, ensure the hole position avoids water pipes, cables, etc. inside the wall to prevent danger.
- When drilling, wear safety goggles and a dust mask to prevent dust from being inhaled into the respiratory tract or falling into the eyes.
- Ensure the charging pile is securely installed to prevent it from falling and injuring personnel.

4.2.2 Wall-mounted charging station

Install charging piles

1. Remove the backplate from the charging station.
2. Place the backplate, RCBO box, and charging gun holder on the wall, and use a marker pen to mark the drilling positions.
3. Use an impact drill to drill holes.
4. Use expansion bolts to secure the charging station, RCBO enclosure, charging gun holder, and backplate to the wall.
5. Mount the charging pile onto the back plate, and secure the back plate and the charging pile.

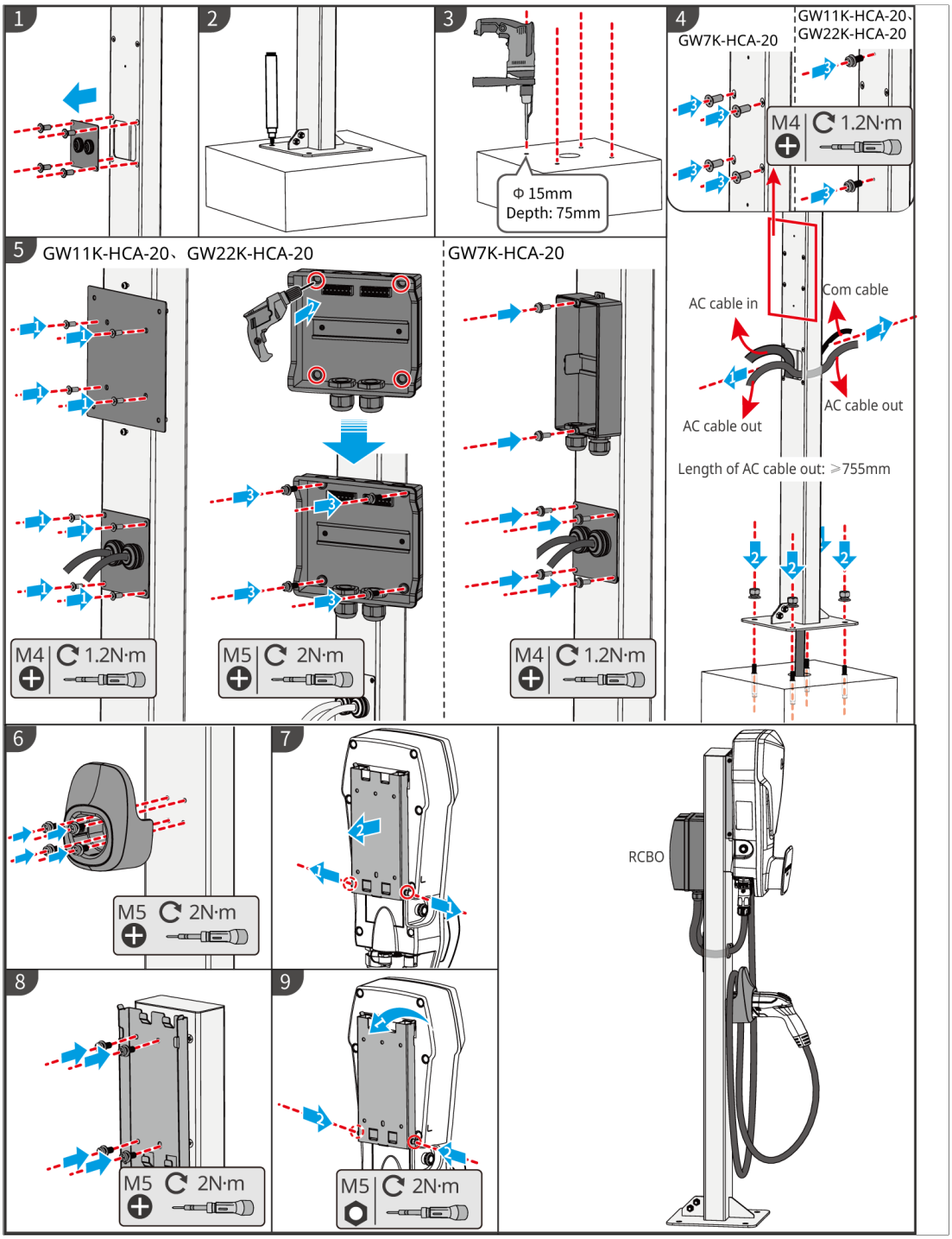


4.2.3 Pole-mounted charging pile

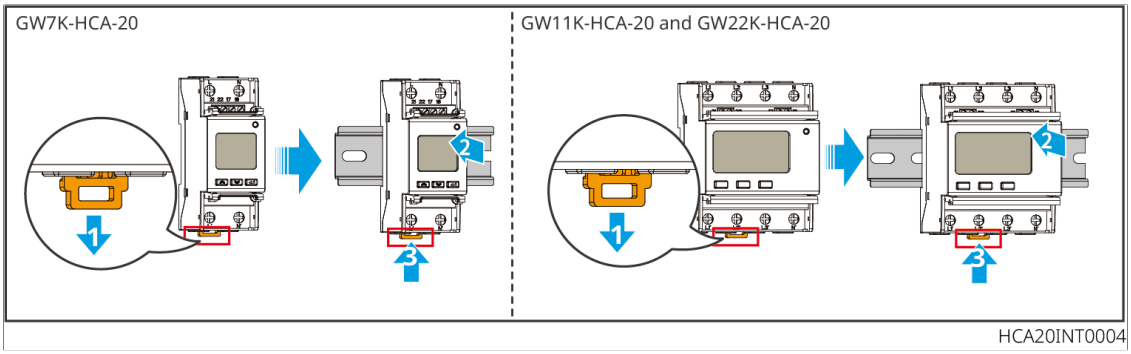
1. Remove the cable baffle from the post.
2. Place the column vertically on the concrete floor, and use a marker pen to mark the drilling position. A cable conduit with a diameter of about 60 mm shall be pre-embedded beneath the concrete floor.
3. Drill a hole using a hammer drill with a drill bit diameter of 15 mm, to a depth of approximately 75 mm.
4. Thread the pre-buried cables through the column, secure the charging pile column to the concrete ground with expansion bolts, and plug the spare fixing holes with

screws.

5. Mount the RCBO box and adapter plate onto the column.
6. Mount the charging gun holder onto the column.
7. Remove the backplate from the charging station.
8. Mount the back panel on the column.
9. Mount the charging pile on the back plate.



4.2.4 Install MID meter (optional)


GW7K-HCA-20
GW11K-HCA-20 and GW22K-HCA-20
1
2
3
1
2
3
HCA20INT0004

5 Electrical connection

5.1 Safety Precautions

Danger

- All operations during electrical connection, as well as the specifications of cables and components used, shall comply with applicable local laws and regulations.
- Before making electrical connections, disconnect the upstream switch. Live work is strictly prohibited; otherwise, electric shock and other hazards may occur.
- Cables of the same type shall be bundled together and arranged separately from cables of different types. Intertwining or crossing is prohibited.
- If the cable is subjected to excessive tensile for ce, it may lead to poor electrical connections. When wiring, reserve a certain length of cable before connecting it to the charging pile's terminal.
- When crimping wire terminals, ensure that the conductor part of the cable is in full contact with the terminal. Do not crimp the cable insulation together with the terminal. Otherwise, the equipment may fail to operate, or after operation, heating caused by unreliable connection may damage the terminal block of the charging pile.
- The AC line needs to be connected to the RCBO before connecting to the charging pile. The RCBO can provide over current Protection for the charging pile circuit.

Warning

- When wiring, the AC input wires must exactly match the "L1", "L2", "L3", "N", and "PE" ports of the AC terminal. Incorrect cable connections will cause damage to the charging pile.
- Please ensure that the conductor is fully inserted into the AC terminal wiring hole with out any exposed part.
- Ensure that cable connections are secure; otherwise, the terminals may over heat during operation and cause damage to the charging pile.

Note

- When making electrical connections, wear personal protective equipment such as safety shoes, protective gloves, and insulating gloves as required.
- Electrical connection work shall only be carried out by qualified personnel.
- The cable colors in the diagrams in this document are for reference only. Specific cable specifications must comply with local regulatory requirements.

Cable Specification Requirements

<table>
<tr><th>Model</th><th>cable</th><th>Cable specification</th></tr>
<tr><td>GW7K-HCA-20</td><td>AC cable (stranded three-core outdoor cable)</td><td>• Copper wire, 105°C, 1000V
• Cable outer diameter: 13-14mm
• 线缆导体横截面积：6mm^2</td></tr>
<tr><td>GW11K-HCA-20</td><td rowspan="2">AC cable (stranded five-core outdoor cable)</td><td>• Copper wire, 105°C, 1000V
• Cable outer diameter: 12.6-17.3mm
• 线缆导体横截面积：4-6mm^2</td></tr>
<tr><td>GW22K-HCA-20</td><td>• Copper wire, 105°C, 1000V
• Cable outer diameter (O. D.): 16.3-17.3mm
• Cable conductor cross-sectional area: 6mm^2[1]</td></tr>
<tr><td colspan="3">[1]: It is recommended that the distance between the distribution box and the charging pile should not exceed 15m.</td></tr>
</table>

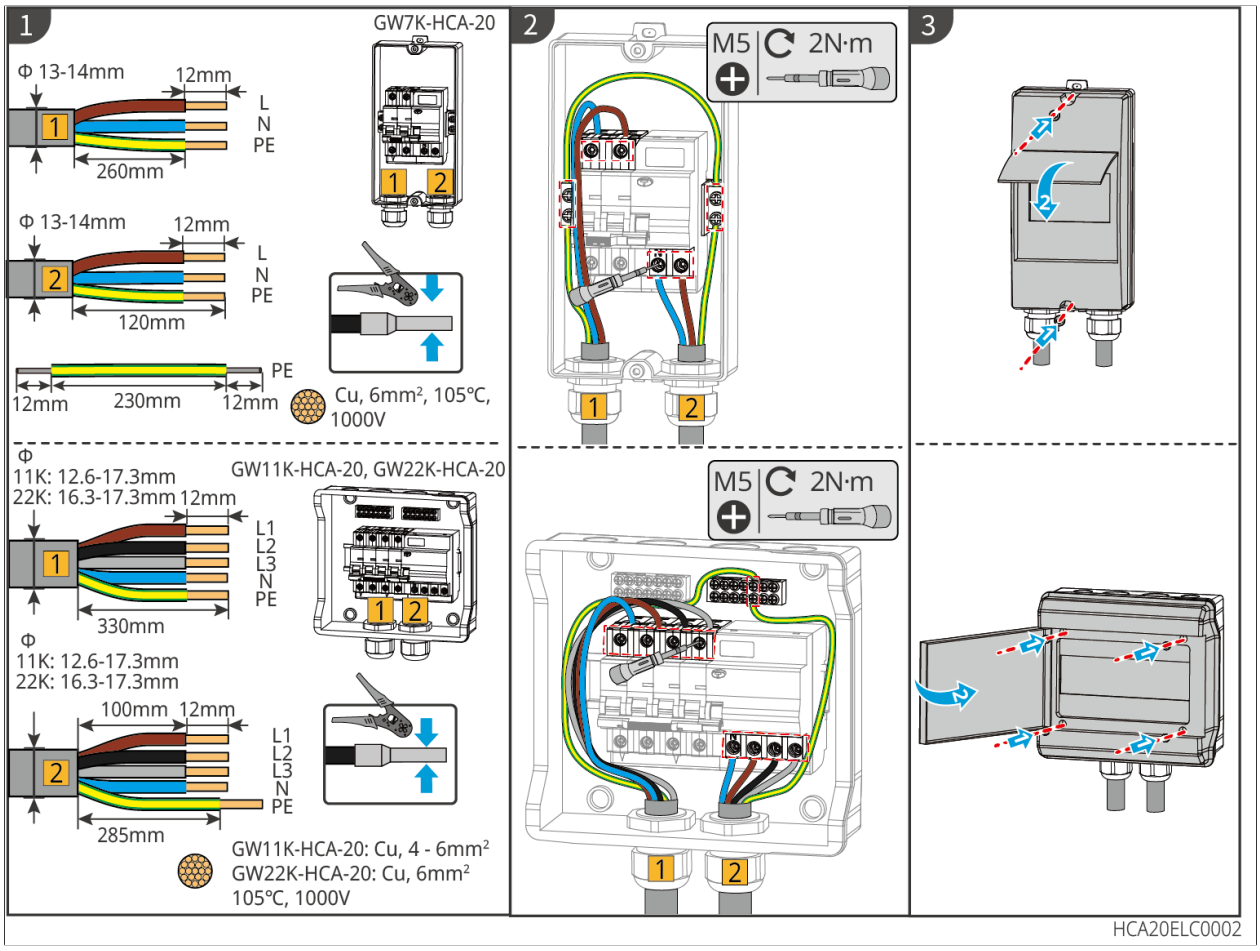
RCBO specification requirements

Note
The specifications of RCBOs may vary depending on international regulations and standards.

5.2 RCBO Connection

Note
• The following RCBO cable connection steps are applicable only to RCBO models purchased from the charging pile manufacturer. For other types of RCBO connections, please refer to their guide document. • AC line 1 connects to the AC output terminal of the mains or inverter, and line 2 connects to the AC input terminal of the charging pile.

1. Fabricate and crimp AC cables.
2. Thread the AC terminals into the RCBO distribution box and secure the m to the RCBO in the correct wiring sequence.
3. Install the top cover of the RCBO distribution box and close it securely to prevent water ingress and other for eign objects.



5.3 Connect the AC line of the charging pile.

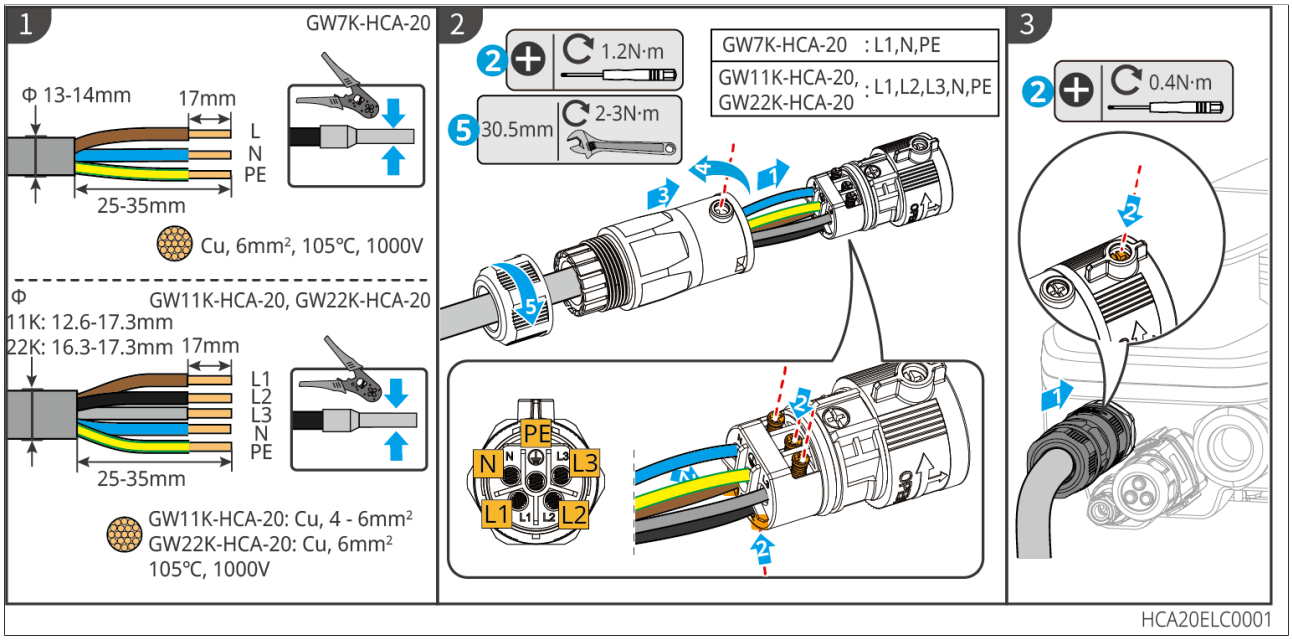
Danger

GW7K-HCA-20: Connect the single-phase AC input line; GW11K-HCA-20 and GW22K-HCA-20: Connect the three-phase AC input line.

- **GW7K-HCA-20:**Voltage: 230Vac,L/N/PE; Current: 32A; Frequency: 50/60Hz.
- **GW11K-HCA-20:**Voltage: 400Vac, 3L/N/PE; Current: 16A; Frequency: 50/60Hz.
- **GW22K-HCA-20:** Voltage: 400Vac,3L/N/PE; Current: 32A; Frequency: 50/60Hz.

The following takes three-phase AC input lines L1, L2, L3, N, PE as an example to explain how to make connections. For single-phase AC input, the lines are L, N, PE.

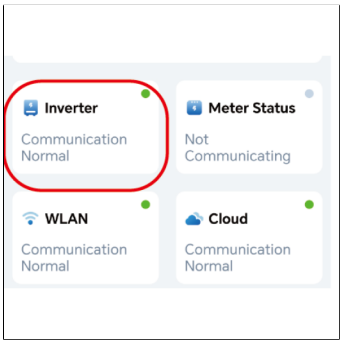
1. Manufacture AC cables.
2. Secure the AC input cable to the AC terminal and tighten the AC terminal.
3. Secure the AC input terminals to the charging pile.



5.4 Connect the communication cable of the charging pile.

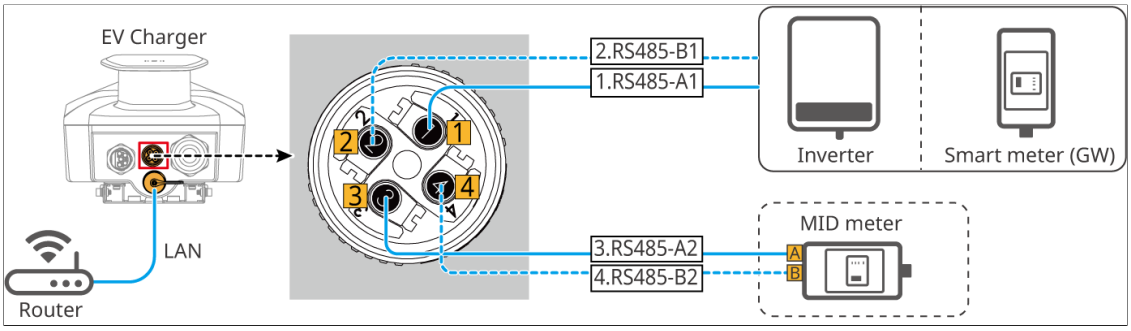
Note

- When connecting communication cables, ensure that the wiring port definitions fully match the device, and the cable routing path should avoid interference sources, power cables, etc., so as not to affect signal reception.
- The RS485_A1/B1 port of the charging pile connects to the communication port of the inverter. For the specific RS485 port on the inverter, please refer to the corresponding inverter manual.
- After the device is powered on, please confirm in SolarGo that the inverter connection status is a steady green light; otherwise, the inverter connection has failed.

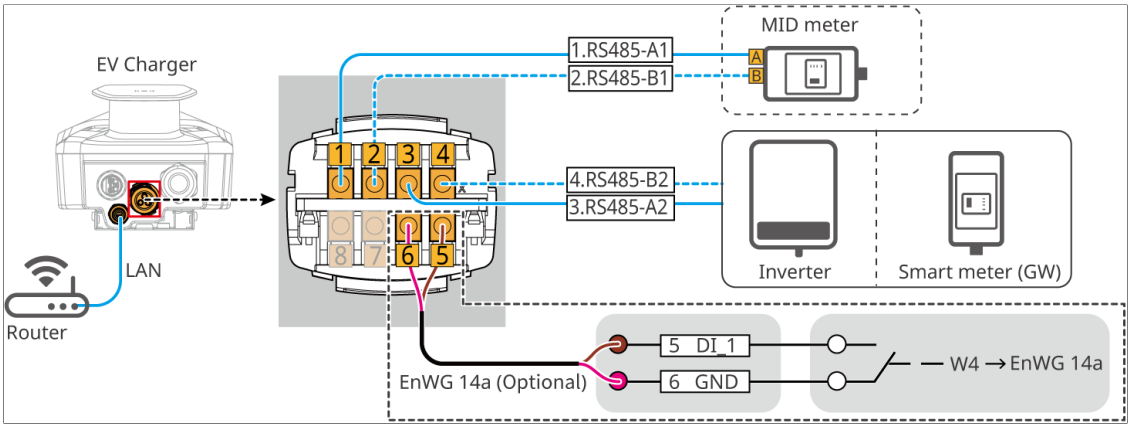


- The matching relationship and communication wiring between the charging pile and the inverter can be referred to: https://en.goodwe.com/Ftp/EN/Downloads/User%20Manual/GW_HCA-G2-Inverter-Compatibility-and-Communication-Wiring-EN.pdf
- Choose either the inverter or the GoodWe meter. If the inverter is already installed, the re is no need to connect the GoodWe meter.

Type 1



Type 2



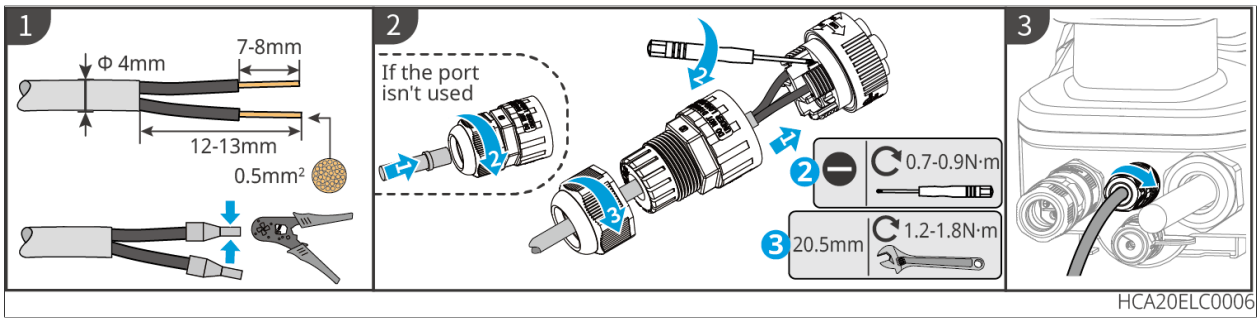
5.4.1 Connect the RS485 communication cable

Note

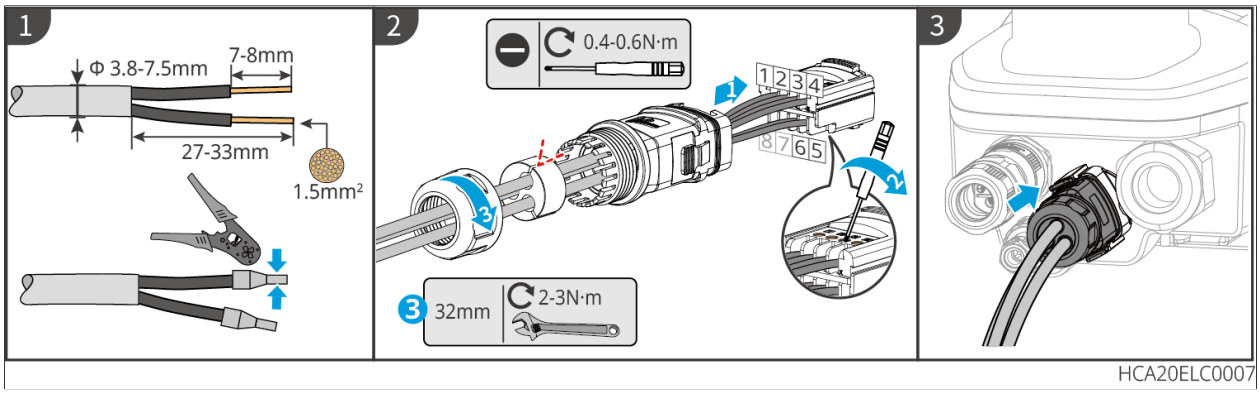
- Please provide your own outdoor twisted pair cable that meets local standards.
- When the RS485 port is not in use, seal the connector with the waterproof rubber plug supplied with the box.

1. Manufacturing communication cables.
2. Secure the communication cable to the communication terminal.
3. Secure the connector to the charging pile.

- Type 1



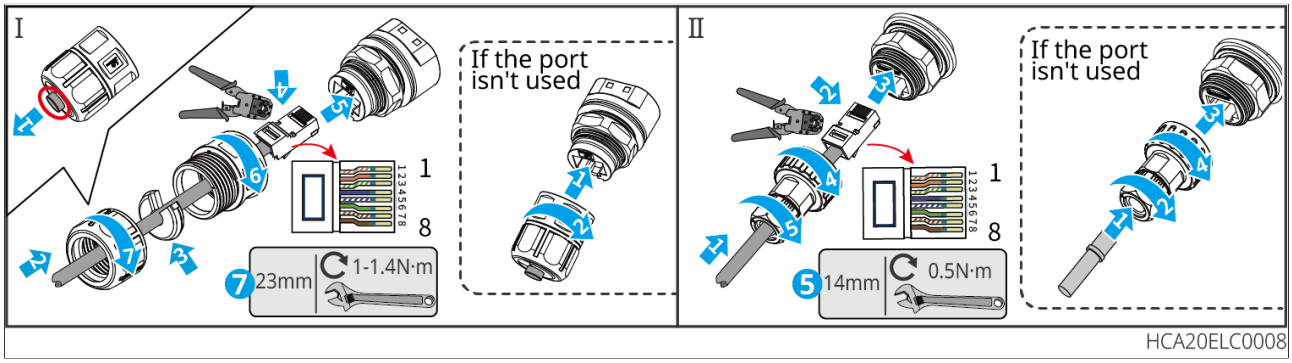
- Type 2



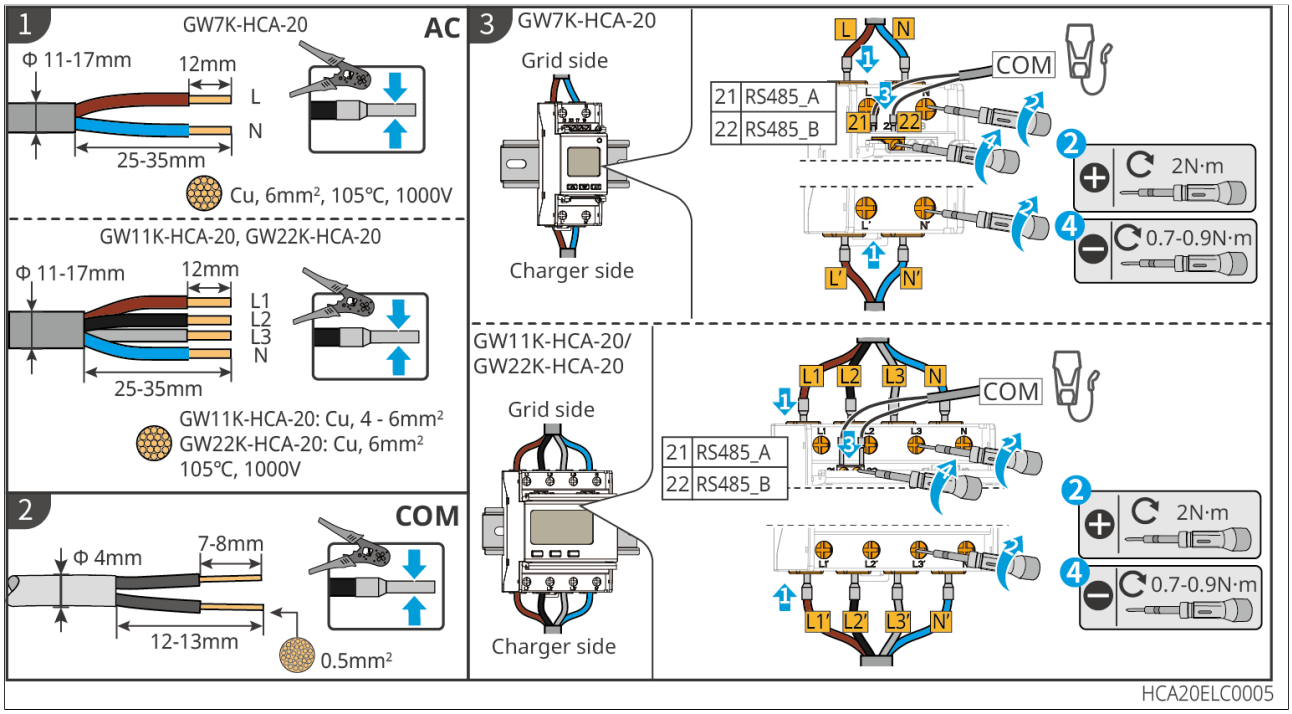
5.4.2 Connect the Ethernet cable.

Note

For LAN-2, when the LAN port is left unused, use the waterproof rubber plug supplied in the box to seal the connector.



5.5 Connect MID meter (optional)



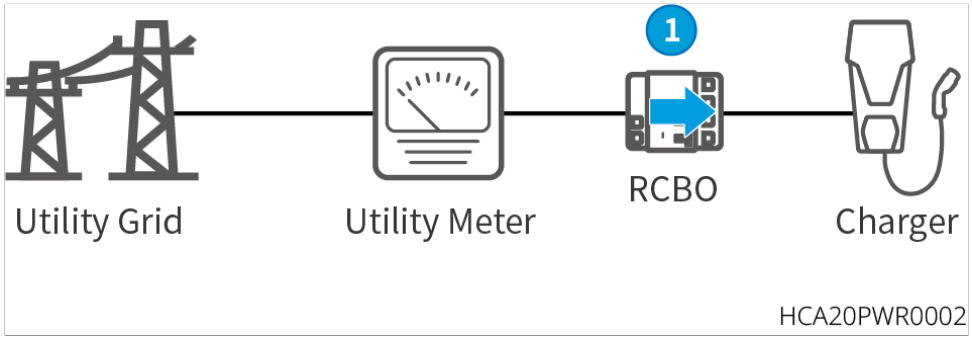
6 Commissioning

6.1 Pre-energization check

Serial Number	Inspection Item
1	The charging pile is installed firmly, the installation location is convenient for operation and maintenance, the installation space facilitates ventilation and heat dissipation, and the installation environment is clean and tidy.
2	AC input line and communication line are connected correctly and securely.
3	Cable binding complies with routing requirements, is reasonably distributed, and is free from damage.
4	Unused ports have been sealed.
5	The grid voltage, frequency, etc. comply with the operating requirements of the charging pile.

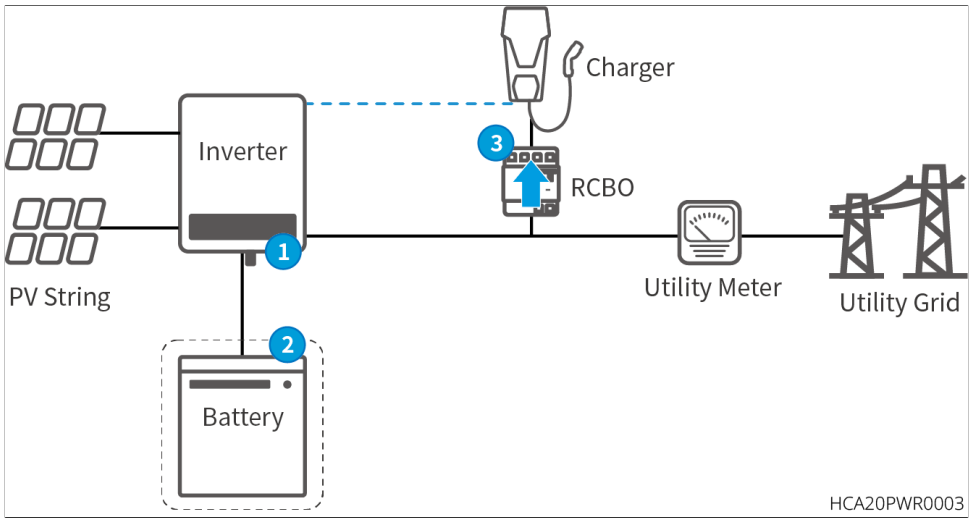
6.2 Energize the equipment

Grid-Connected Scenario



Close the RCBO switch between the charging pile and the power grid.

Photovoltaic-energy storage-charging scenario



1. Close the inverter-side AC Switch and DC Switch.
2. (Optional) Close the Battery Side switch.
3. Close the RCBO switch.

6.3 Charge an electric vehicle.

Danger

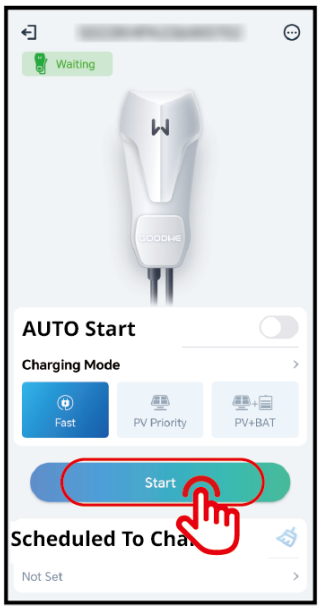
- While the charging pile is charging the electric vehicle, the electric vehicle must not be moved.
- During charging, if an abnormal situation occurs, use the EPO button to cut off the power supply.
- Please avoid charging electric vehicles during thunderstorms. If charging during thunderstorm weather is necessary, ensure that the charging gun and the electric vehicle's charging port are dry.
- Children are prohibited from approaching and using the charging pile.
- Charging of electric vehicles is prohibited under abnormal conditions such as charging pile malfunction or cable damage.

Note

- Before charging, first insert the charging gun into the electric vehicle charging port.
- After charging, unplug the charging gun, wind the cable around the cable winding area on the charging pile socket or the charging pile body, and put the cap on the charging gun nozzle or insert it into the charging pile socket.
- If the electric vehicle does not support Automatic Charging, after the charging pile resumes from the interrupted charging state, it is necessary to re-insert and unplug the charging gun to start charging:
  - Plug and Charge mode, enabling Automatic Charging;
  - In non-Plug and Charge mode, it can be started by swiping a card or via the APP.

6.3.1 Start charging via the App (SolarGo & SEMS+).

- **SolarGo**

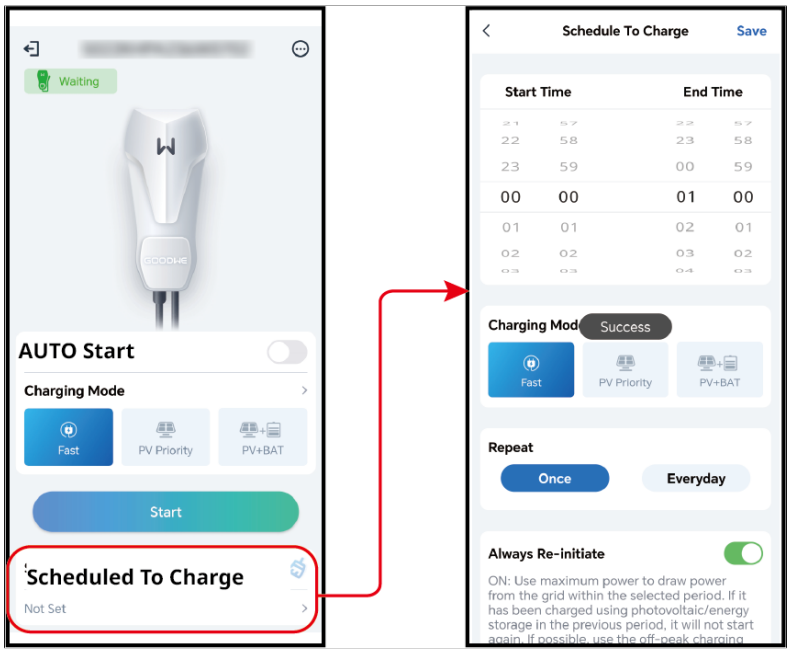


- **SEMS+**

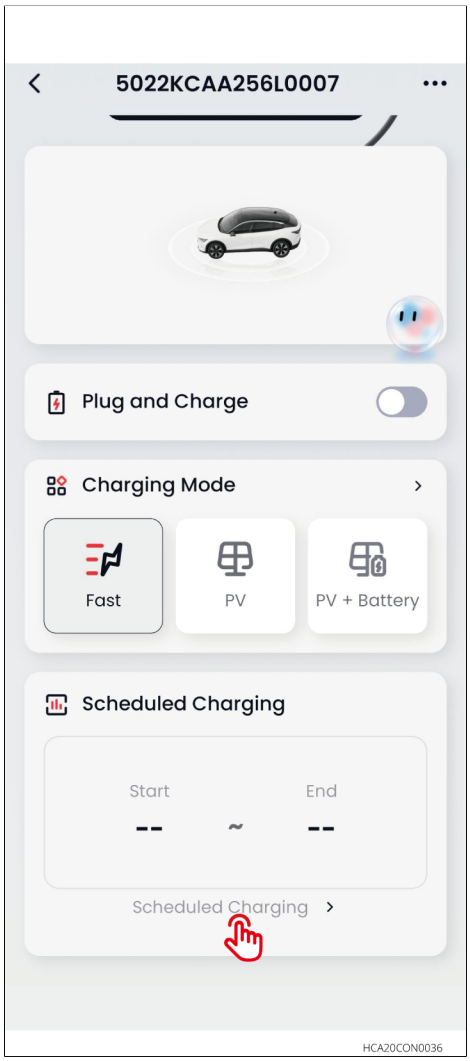


6.3.2 Schedule charging in the App (SolarGo&SEMS+)

- **SolarGo**


Waiting
AUTO Start
Charging Mode
Fast
PV Priority
PV+BAT
Start
Scheduled To Charge
Not Set
Schedule To Charge
Save
Start Time
End Time
Charging Mod
Success
Repeat
Once
Everyday
Always Re-initiate
ON: Use maximum power to draw power from the grid within the selected period. If it has been charged using photovoltaic/energy storage in the previous period, it will not start again. If possible, use the off-peak charging

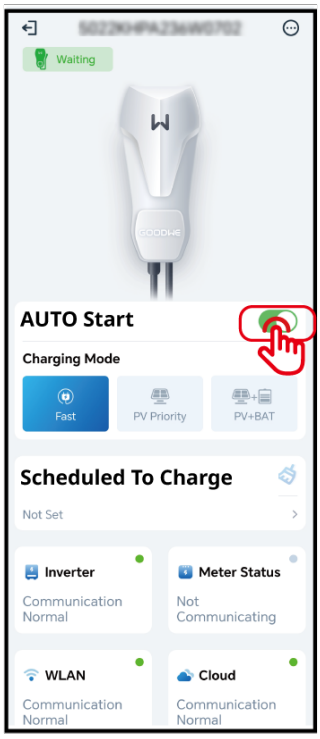
- **SEMS+**



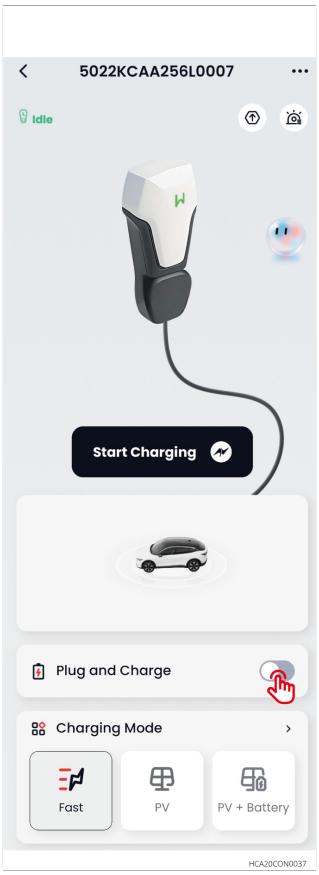
6.3.3 plug-and-play mode charging

After selecting plug-and-play on the APP, with out setting scheduled charging, the re is no need to swipe the RFID card; inserting the charging connector can directly start charging the electric vehicle.

- **SolarGo**


Waiting
AUTO Start
Charging Mode
Fast
PV Priority
PV+BAT
Scheduled To Charge
Not Set
Inverter
Communication Normal
Meter Status
Not Communicating
WLAN
Communication Normal
Cloud
Communication Normal

- **SEMS+**



6.3.4 RFID card-based charging

Note
The RFID card needs to be bound with the charger in advance. Please refer to7.2.6.More Settings(Page 68)。

If Plug and Charge is not activated, after swiping the card, the charging pile will start charging the electric vehicle.

7 System Commissioning

7.1 Introduction to Indicator Lights

indicator light	color	Description
	Solid green	Charging pile is in standby mode.
	green blinking	The charging pile system is being upgraded.
	Solid blue	Charging the electric vehicle.
	Solid red	Charging pile fault.
	Indicator lamp status when card swiping is abnormal.	
	Red light on for 2s	Swipe card in the state where the charging gun is not inserted.
	Flashes red twice.	Charging pile mismatch.

7.2 Configure and view charging pile information via the SolarGo App.

Note
This document is based on the content demo of SolarGo version 6.5.0. Content may differ across different SolarGo versions.

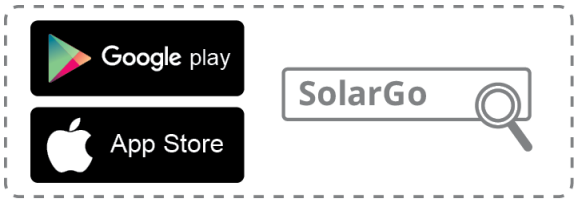
7.2.1 Download and Install SolarGo App

Mobile phone requirements:

- Phone operating system requirements: And roid 5.0 and above, iOS 13.0 and above.
- The mobile phone supports a web browser and connects to the Internet.
- The mobile phone supports WLAN/Bluetooth functions.

Note
After the SolarGo App is installed, it will automatically prompt for software updates when a new version is available.

Method 1: Search for SolarGo on Google Play (And roid) or App Store (iOS), the n download and install it.



SolarGo App
SLG00CON0135

Method 2: Scan the QR code below to download and install.



SolarGo App
SLG00CON0136

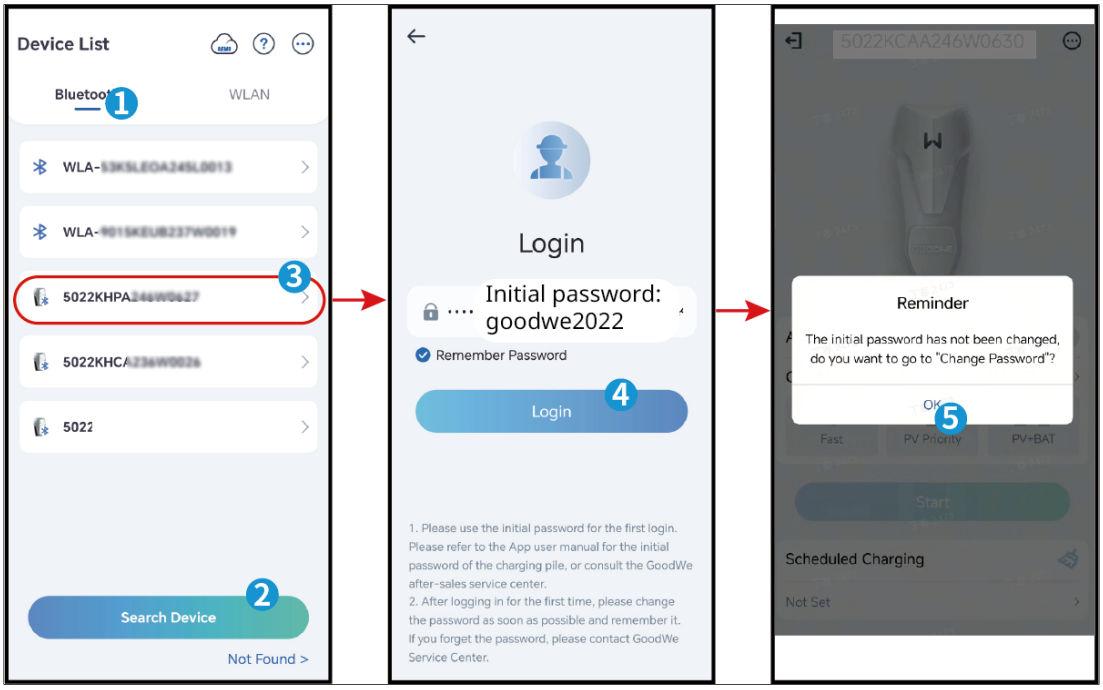
7.2.2 Login charging pile

Note
• On first login, use the initial password and change it; keep the password in mind. To ensure account security, it is recommended to change the password periodically. • After 3 incorrect password attempts, the account will be locked. You can contact GoodWe after-sales service to obtain a super password. Please change the login password after logging in.

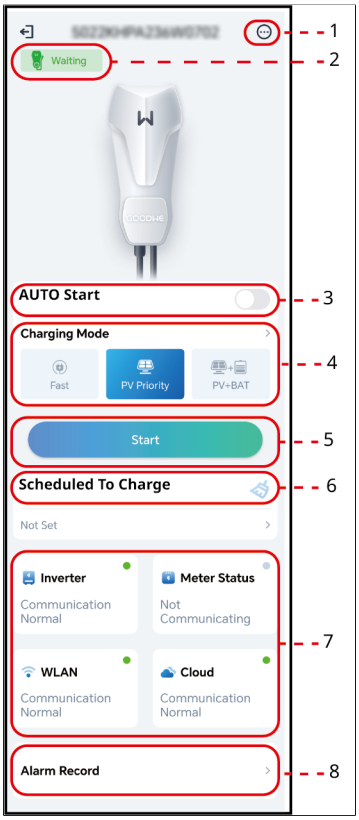
1. Confirm that the charging pile is energized and operating normally.
2. In the SolarGo app home interface, select the **Bluetooth** tab.
3. Pull down or click **Search Device** to refresh the device list. Confirm the EV charger signal name based on the EV charger serial number, then click the EV charger signal name to enter the login screen.
4. Enter the login password to access the device details page. Initial login password:

gooddwe2022.

5. Change the initial password.



7.2.3 Introduction to Charging Pile Interface



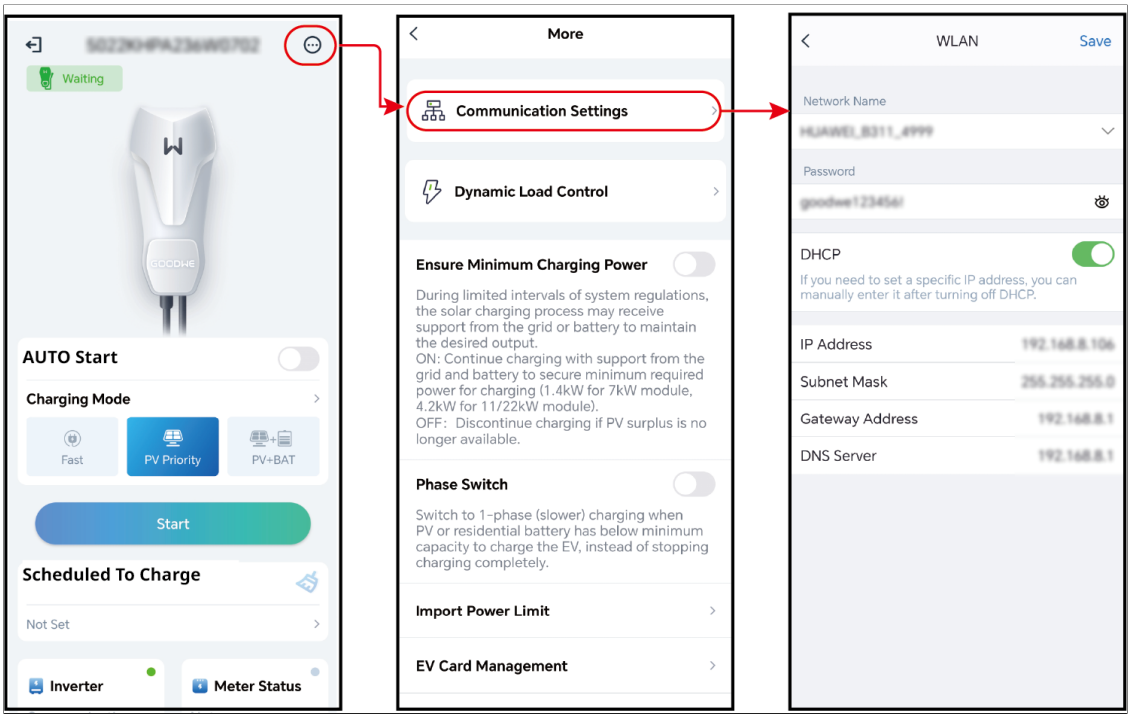
Serial Number	Name/Icon	Description
1	More	Set charging pile related configuration.
2	Equipment Status	Display the charging pile working status, such as **Idle (Plugged)**, **Charging**, etc.
3	Plug and Charge	Start Charging is initiated immediately after the charging gun is plugged in.
4	Charging Mode	Set the mode for the charging pile to charge electric vehicles.
5	Start/End Charging	• **Start Charging**: Start the charging pile to charge the electric vehicle. • **End Charging**: Pause the charging pile from charging the electric vehicle.

Serial Number	Name/Icon	Description
6	Scheduled charging	Select the time for single charging and the time for multiple-cycle charging according to actual needs.
7	Communication Status	• **Inverter**: Check whether the EV charger and the inverter communicate normally. • **Meter**: Check whether the EV charger and the meter communicate properly. • **WiFi**: Check whether the charging pile is connected to the router. • **Cloud**: Check whether the charging pile is connected to the SEMS Portal server.
8	Alarm Record	Query alarm records.

7.2.4 Configure the Wi-Fi network of the charging pile.

If you need to connect the charging pile to the cloud, please first configure the information of the router or switch that communicates with the charging pile, and ensure normal communication between the charging pile and the router or switch.

1. Enter the configuration interface via **Settings** > **Wi-en Configuration**.
2. Click the **Network Name** dropdown list, select the network to connect to, and enter the corresponding network password.
3. Enable or disable **DHCP** based on actual needs.
4. When the **DHCP** function is turned off, configure the **IP address**, **subnet mask**, **gateway address**, and **DNS server** information based on the router or switch information.
5. Click **Save** to complete the settings.



Serial Number	parameter name	Description
1	Network Name	If the charging pile needs to connect to the cloud, it must first communicate with a router or switch. Please select the corresponding network based on actual conditions.
2	password	Enter the password of the actually selected network.
3	DHCP	• When the router is in dynamic IP mode, enable the DHCP function. • When using a router in static IP mode or when using a switch, disable the DHCP function.
4	IP address	
5	Subnet Mask	
6	gateway address	

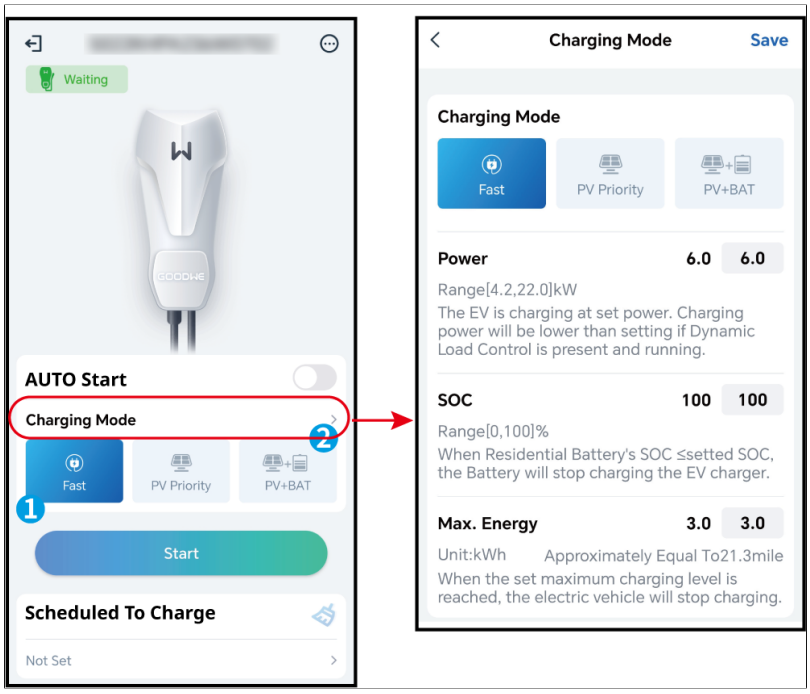
Serial Number	parameter name	Description
7	DNS server	• When DHCP is enabled, this parameter does not need to be configured. • When DHCP is disabled, please configure this parameter based on the router or switch information.

7.2.5 Set charging mode.

The charging pile has three advanced charging modes: fast charging, PV charging, and PV + battery charging.

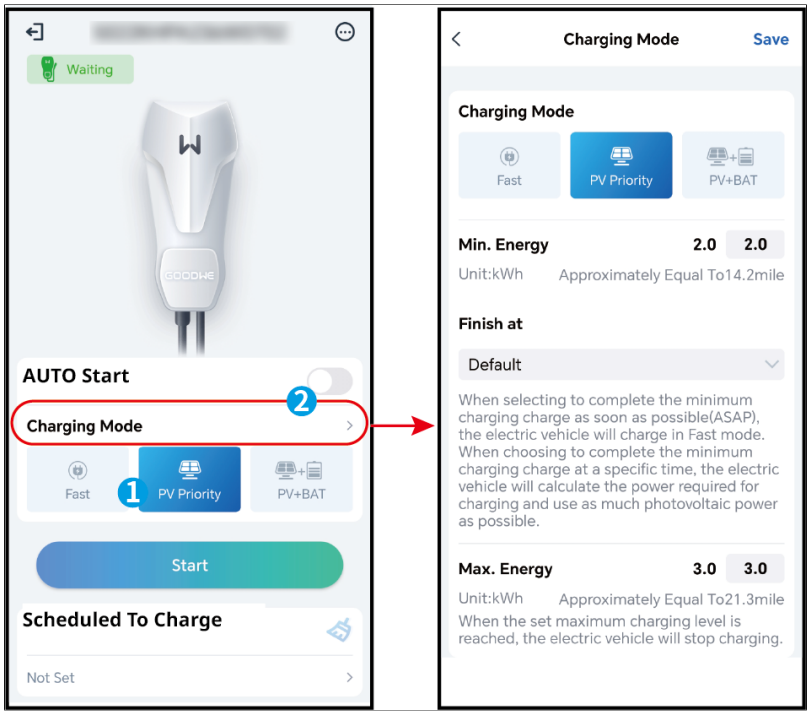
Fast charging

The charging pile can charge electric vehicles using power from the grid, PV, or batteries. The output power of the charging pile defaults to the Rated Power, and users can customize the output power according to actual needs (not exceeding the Rated Power).



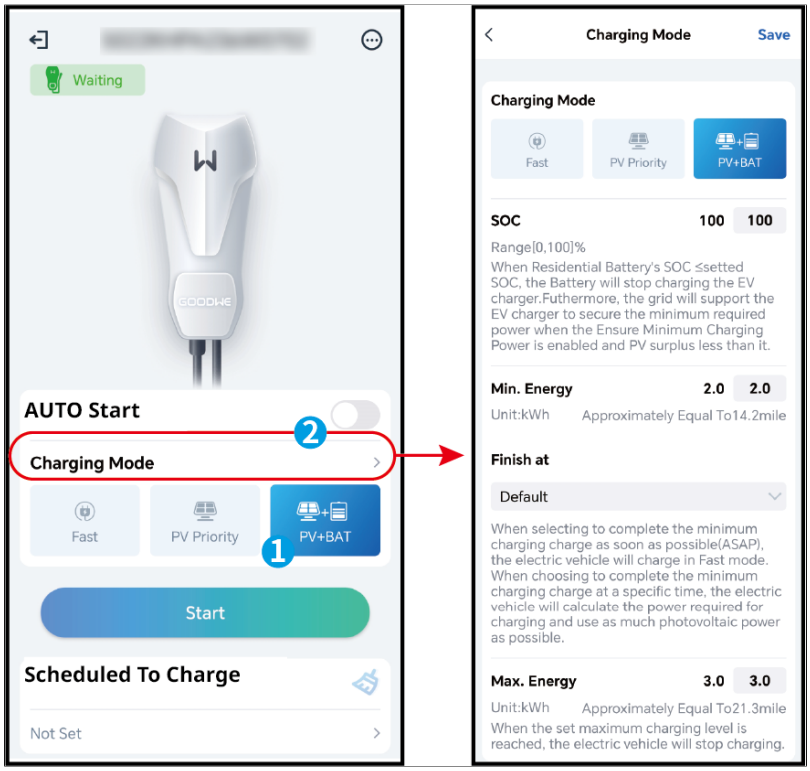
PV charging

Only PV power is used to charge the electric vehicle. PV power supplies the load first, and the remaining power is used to charge the electric vehicle.



PV+Battery Charging

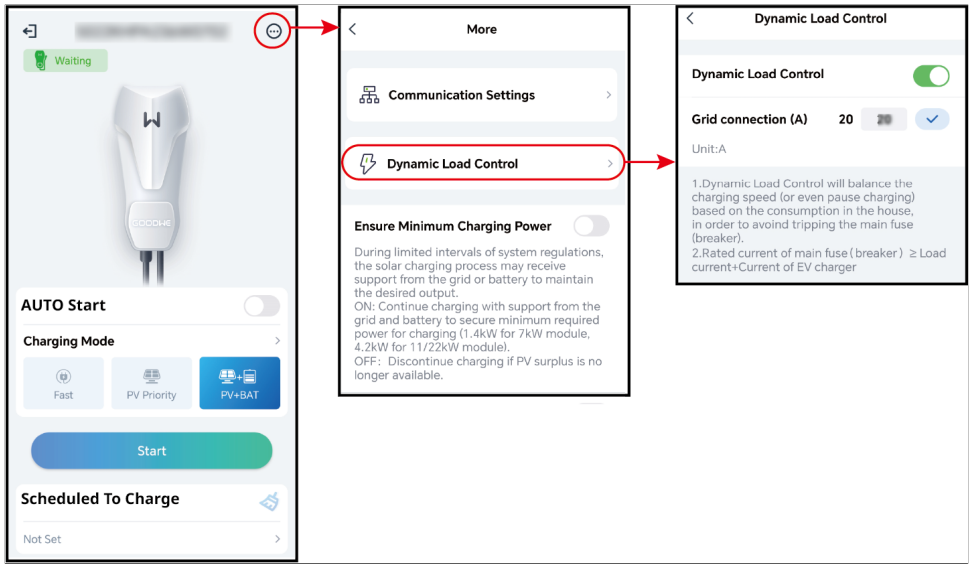
Use PV power and battery power to charge the electric vehicle. The power from PV or battery is preferentially supplied to the load, and the remaining power charges the electric vehicle.



7.2.6 More Settings

Dynamic Load Management

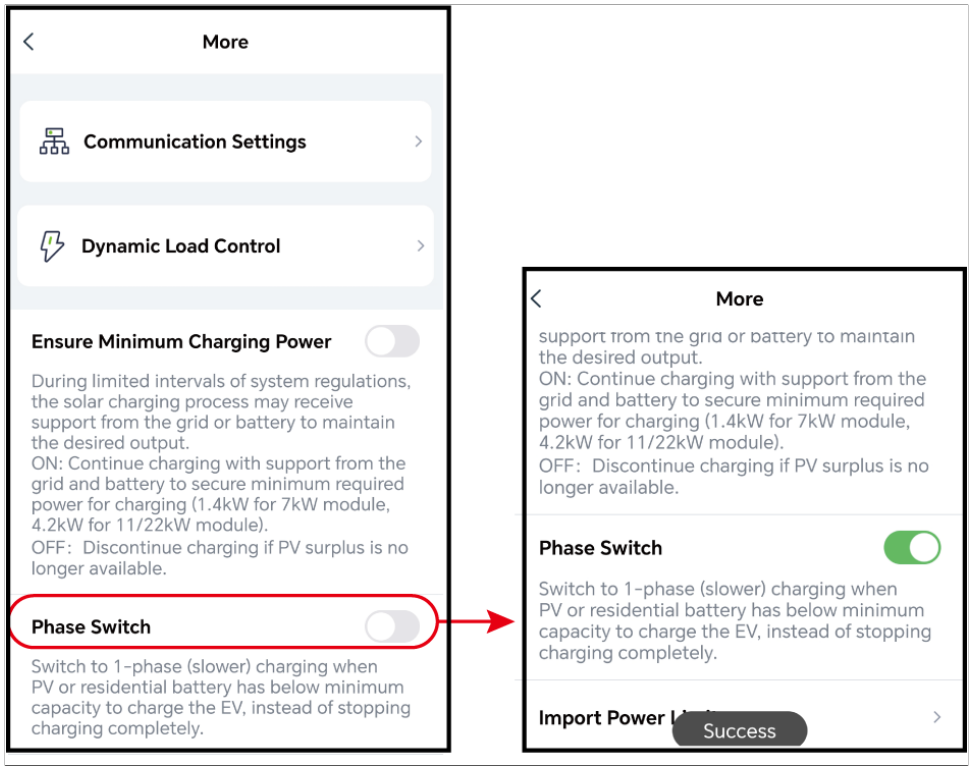
After Dynamic Load Management is enabled, the charging pile can adjust its charging power (or even suspend charging) based on the acquired household meter data and the user-set incoming circuit breaker current, so as to prevent the incoming circuit breaker from tripping. When the actual incoming current approaches the user-set incoming circuit breaker current, to avoid tripping accidents, the charging power of the charging pile will be gradually reduced until it shuts down. After the charging pile shuts down, it will wait for a period of time, and once it confirms that the remaining current of the incoming circuit breaker meets the conditions for starting the charging pile, it will automatically start up.



single-phase/three-phase switching

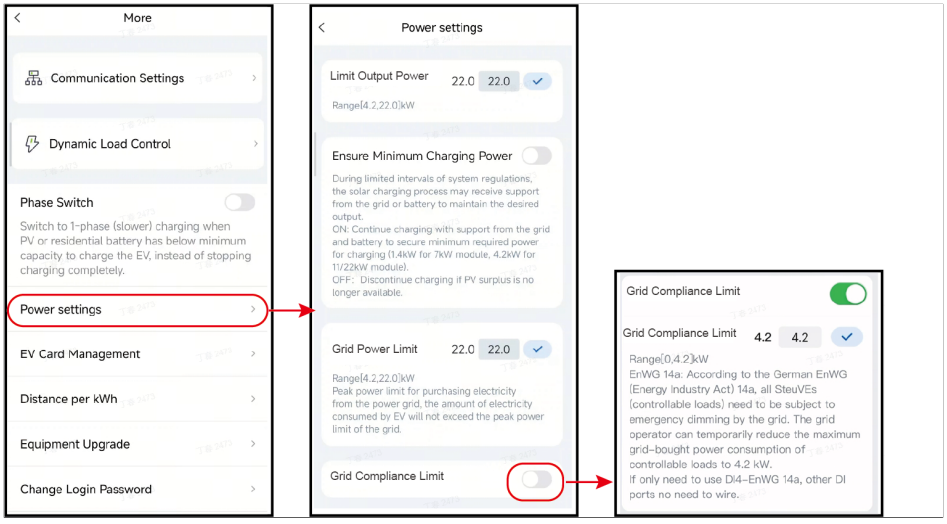
Note
Only three-phase charging piles support the single/three-phase switching function.

ON: When the total input power is lower than 4.2KW, the charging power automatically switches to single-phase charging mode, avoiding the charging pile from purchasing power from the grid or shutting down. In single-phase charging mode, the minimum charging power is 1.4KW. (The switching time between single-phase and three-phase is approximately 3 minutes.)
OFF: The EV charger is in three-phase charging mode.



Set power parameters

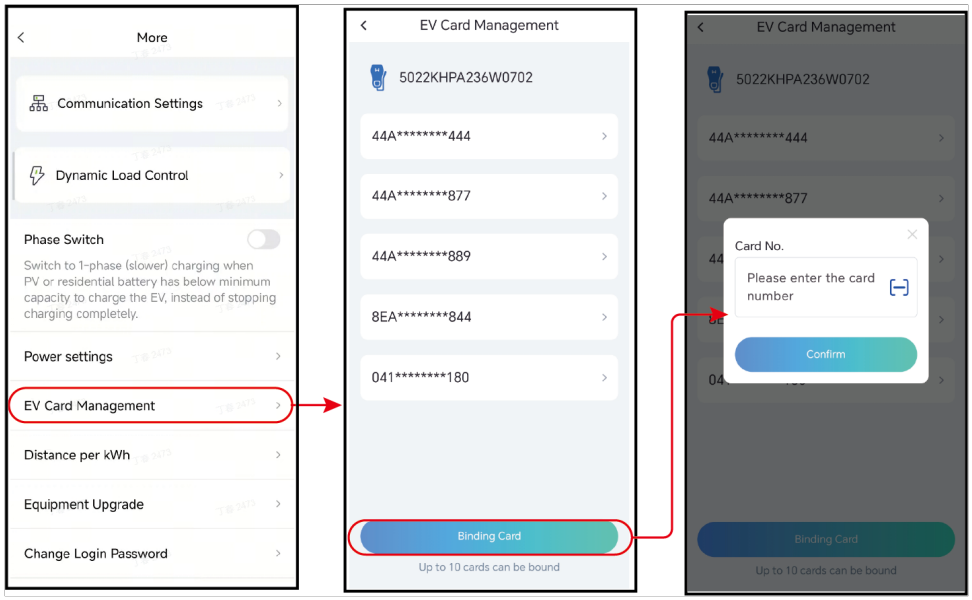
1. Enter the settings interface via .
2. Set power-related parameters according to actual requirements.



Serial Number	Name/Icon	Description
1	Output Power Limit	Set the charging power of the charging pile. If not set, the default charging power is the Rated Power.
2	Ensure minimum charging power	In PV charging and PV+battery charging modes, after the charging pile starts up, if the PV or battery energy is insufficient, when the minimum charging power guarantee is enabled, the grid or battery will supplement the energy to maintain the minimum power required for charging.
3	Grid import power limit	After the setpoint is reached, stop charging the electric vehicle.
4	Grid dispatch limit	According to grid standard requirements in certain countries or regions, the EnWG 14a function needs to be enabled to ensure that the power purchased by a single device from the grid does not exceed 4.2 kW. Please set the power purchase limit value based on actual requirements.

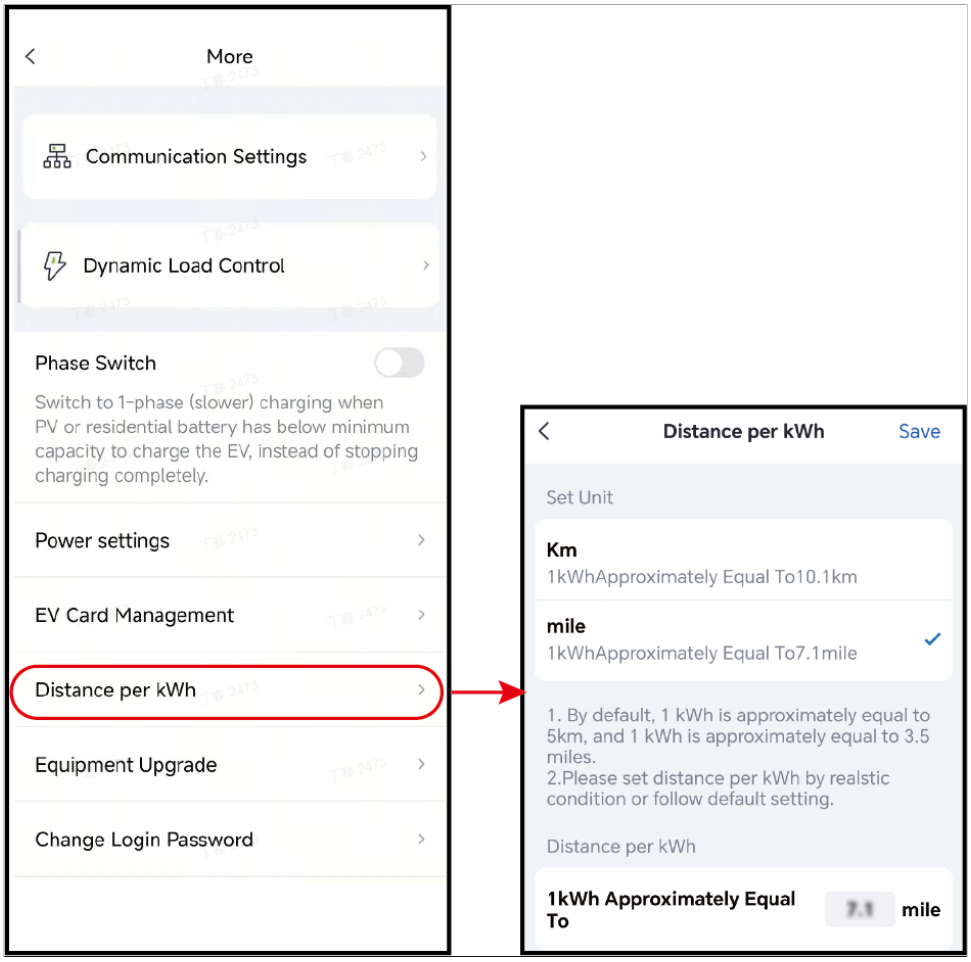
Card management

RFID cards can be added and deleted, and each charging pile can bind up to 10 cards.



Conversion settings

The energy-to-mileage conversion ratio can be configured, or the default settings can be followed.



View Firmware Information / Firmware Upgrade

Through the firmware information, the firmware version of the charging pile can be viewed or upgraded.

1. Enter the settings interface via .
2. (Optional) Click Check for Updates to confirm whether a newer firmware version is available. If so, follow the on-screen prompts to complete the upgrade.

Change login password

1. Enter the settings interface via .
2. According to the interface prompt, enter the current password and the new password.

Factory Reset

Note
After factory reset, the password will revert to the initial password goodwe2022.

1. Enter the settings interface via .
2. Perform a factory reset according to the interface prompts.

7.3 Set and view charging pile information through the SEMS+ App (end user)

SEMS+ is a cloud platform capable of remote unified dispatch and monitoring of charging piles and inverters.

7.3.1 Download and install the app

Mobile phone requirements

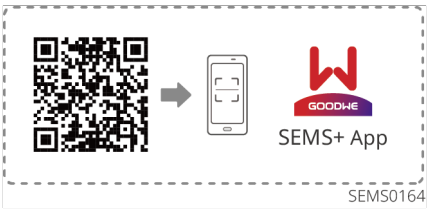
- Mobile OS Requirements: Android 7.0 and above, iOS 15.1 and above.
- The phone supports a web browser and connects to the Internet.
- Mobile phones support WLAN/Bluetooth functions.

Download Method

- Method 1: Search for SEMS+ in Google Play (And roid) or App Store (iOS), the n download and install it.

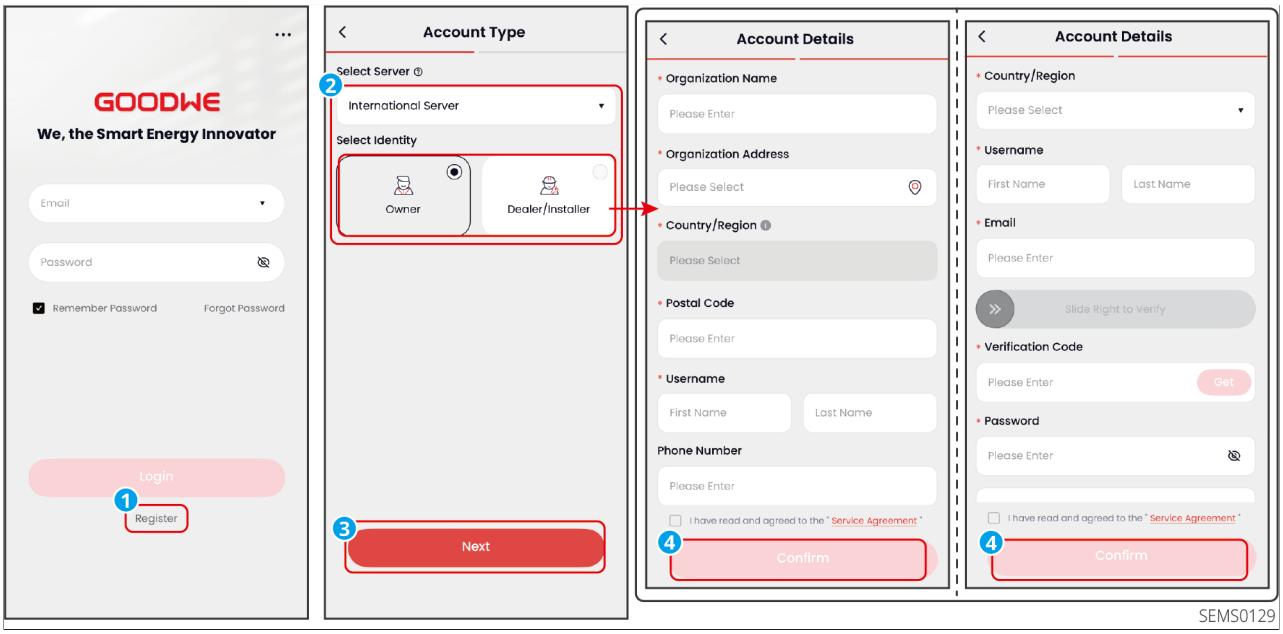


- Method 2: Scan the QR code below to download and install.



7.3.2 Account Registration (End User)

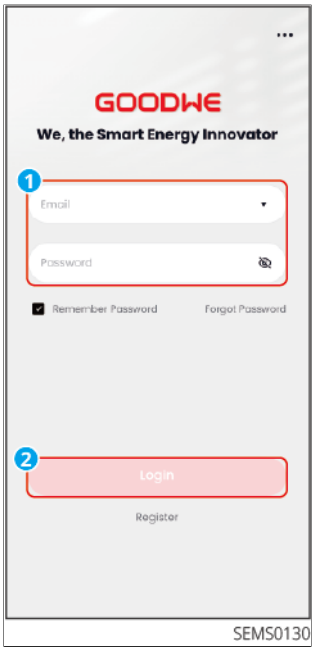
Please read the Data Protection Statement carefully, the n fill in the registration information according to the actual situation to complete the registration.



7.3.3 Log in to the app.

Note
Credentials obtained.

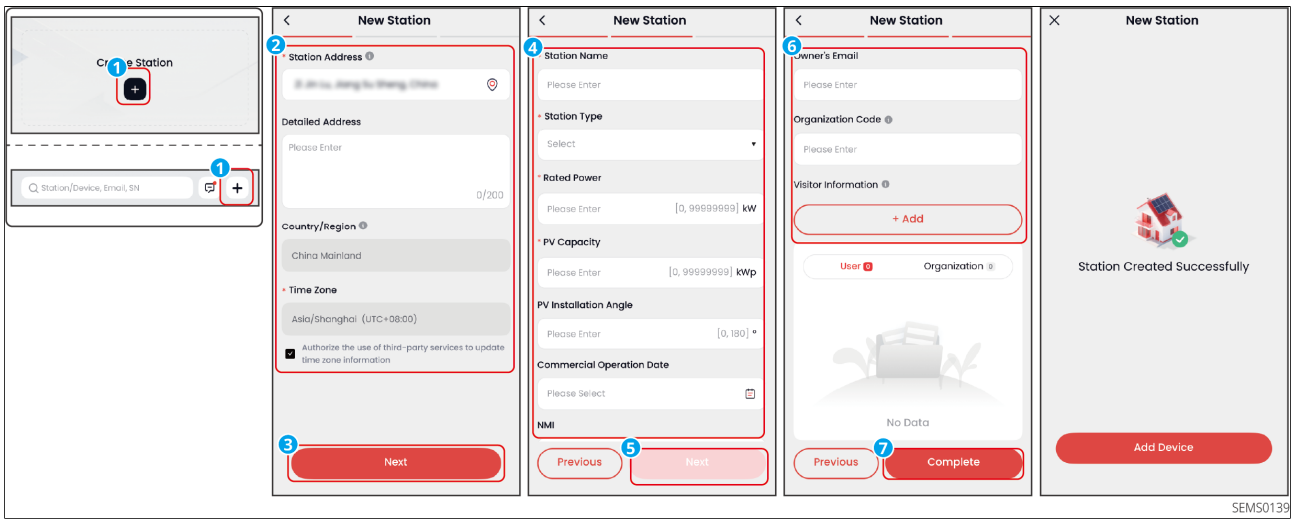
Enter your account and password to log in to the SEMS+ App.



7.3.4 Create Plant

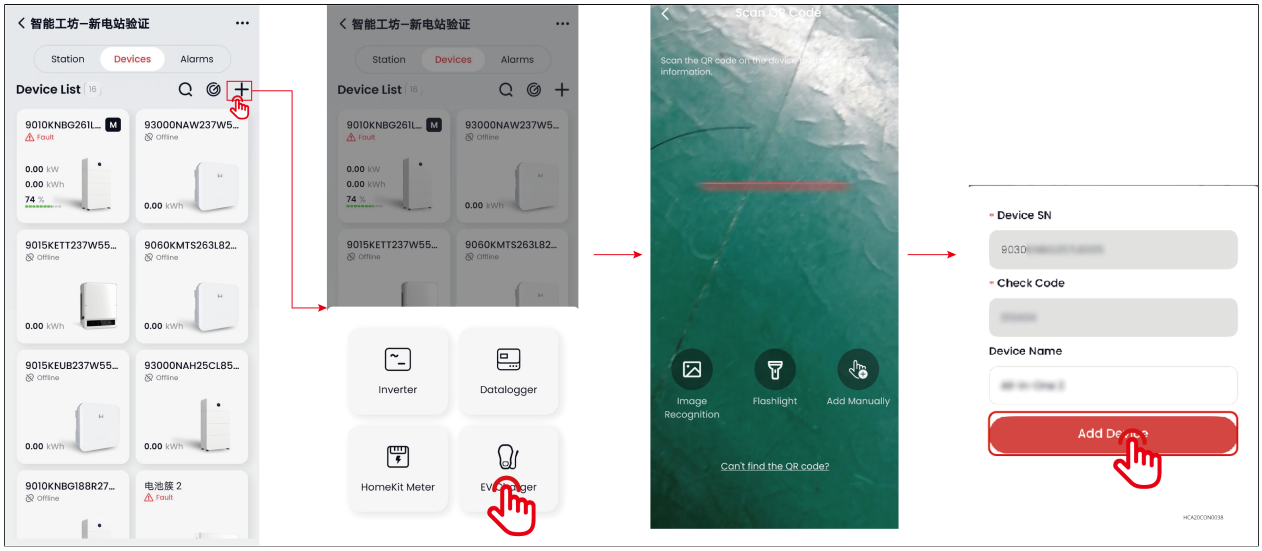
Fill in power station information

1. After logging into the App, if the re are no power stations under the account, click "create station"; if the re are power stations, click "+" on the power station list screen to enter the interface for filling in new power station information.
2. As prompted on the interface, fill in the power plant information according to the actual situation. (* indicates required fields)



Add Device

1. On the device list interface, click +.
2. Select the device type, and scan the device SN or manually enter the device SN.
3. After scanning, verify that the device serial number and check code are correct. Click "Add Device" to complete the addition.

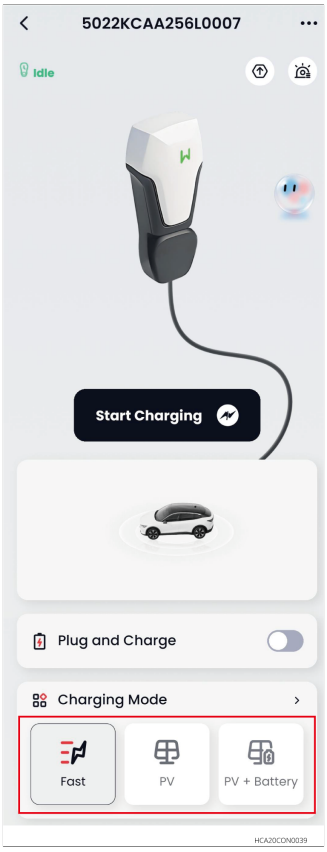


7.3.5 Charging Mode

Note
If the electric vehicle does not support Automatic Charging, after the charging pile recovers from the interrupted charging state, the charging gun must be unplugged and reinserted, and charging must be manually started in the App.

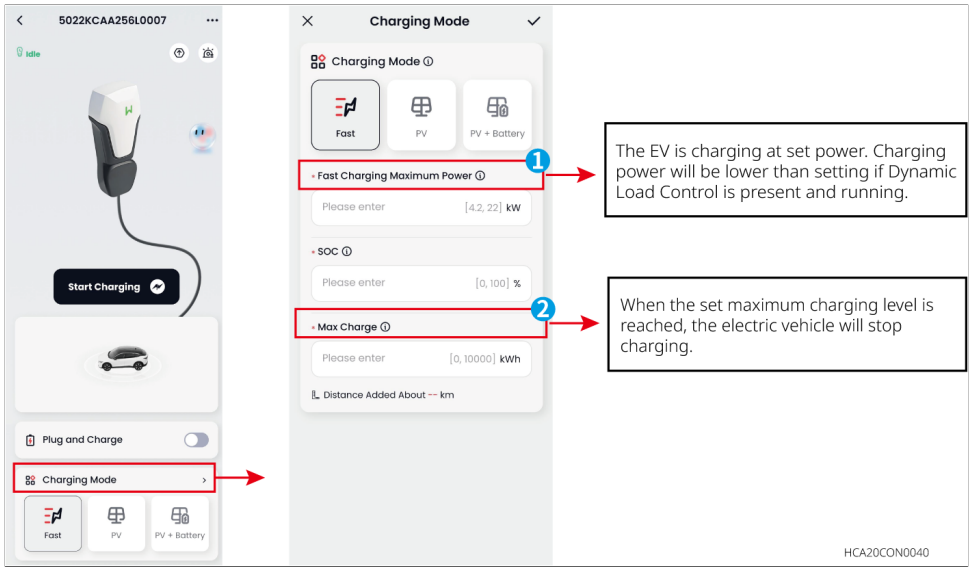
Introduction to Charging Modes

The charging pile has three advanced charging modes: fast charging, PV charging, and PV + battery charging.



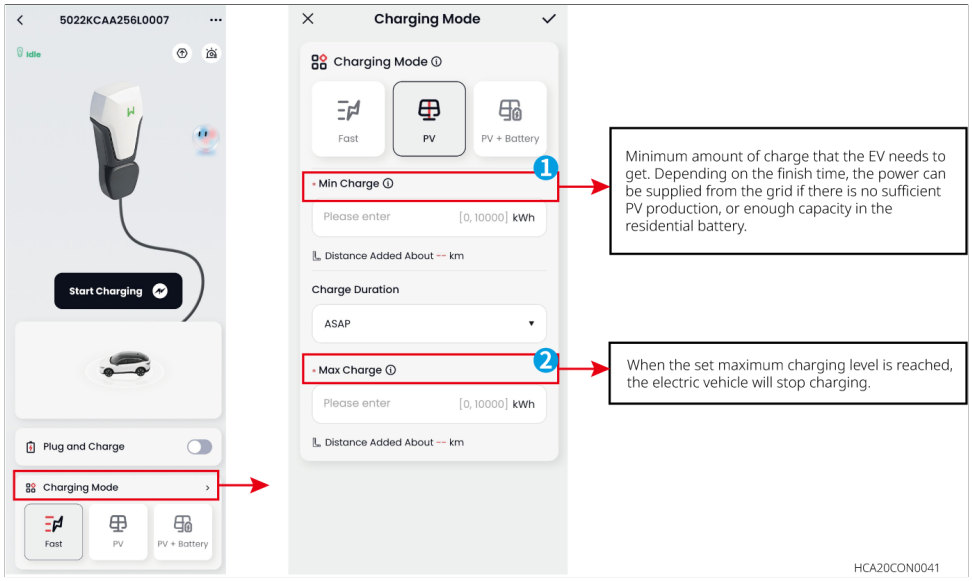
Fast charging

The charging pile can charge electric vehicles using power from the grid, PV, or batteries. The output power of the charging pile defaults to the Rated Power, and users can customize the output power according to actual needs (not exceeding the Rated Power).



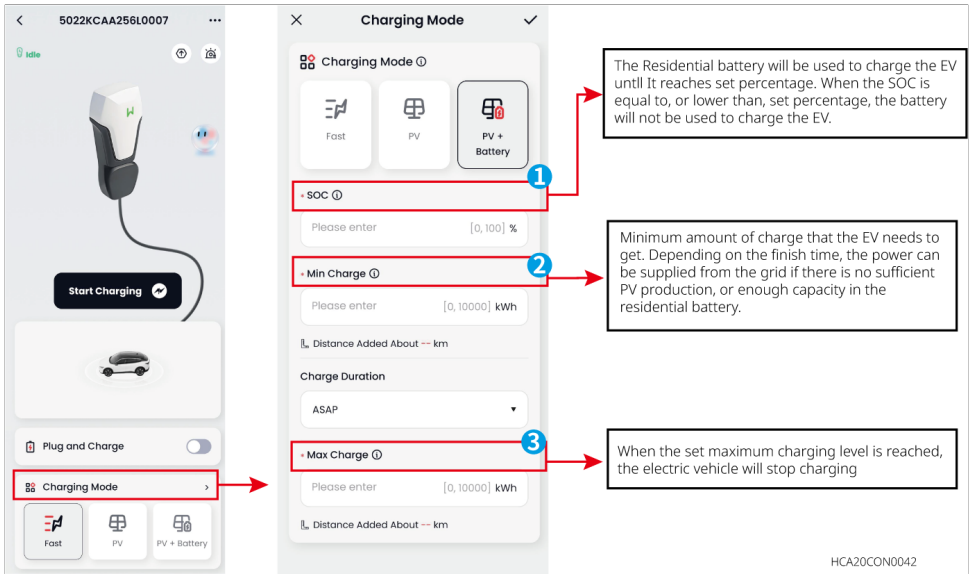
PV charging

Only PV power is used to charge the electric vehicle. PV power supplies the load first, and the remaining power is used to charge the electric vehicle.

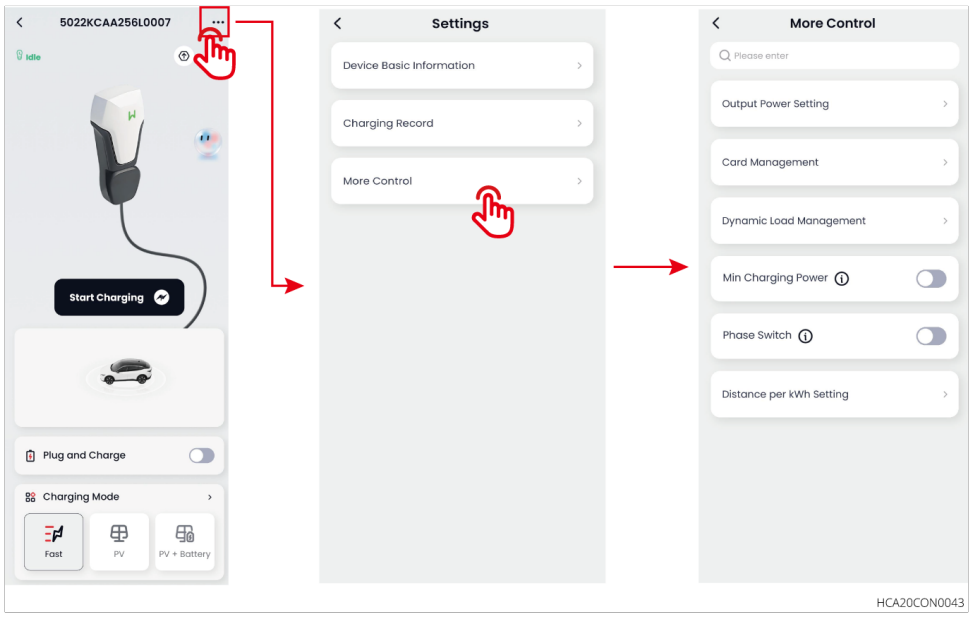


PV+Battery Charging

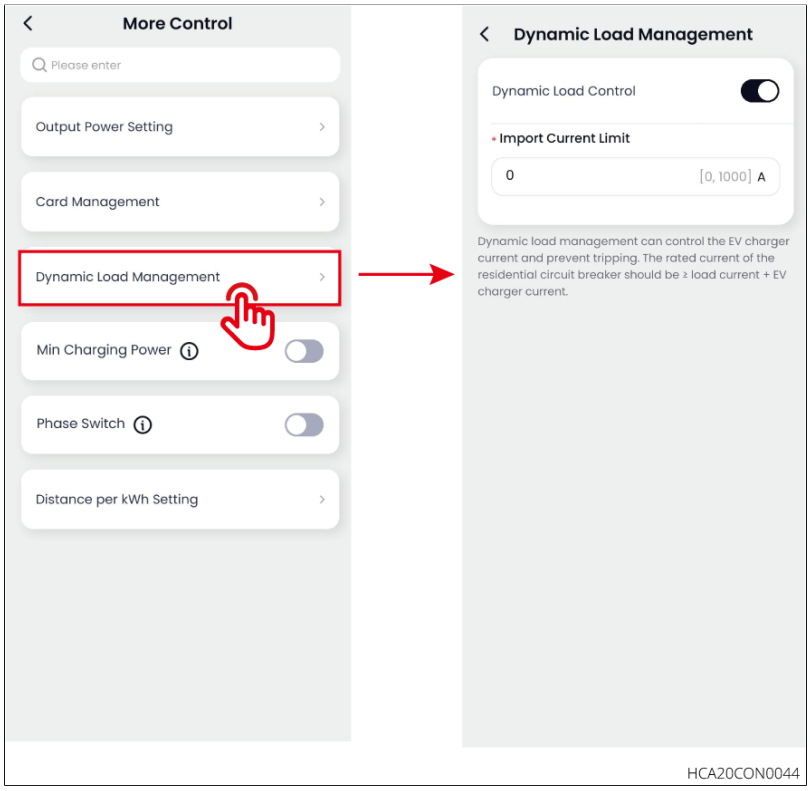
Use PV power and battery power to charge the electric vehicle. The power from PV or battery is preferentially supplied to the load, and the remaining power charges the electric vehicle.



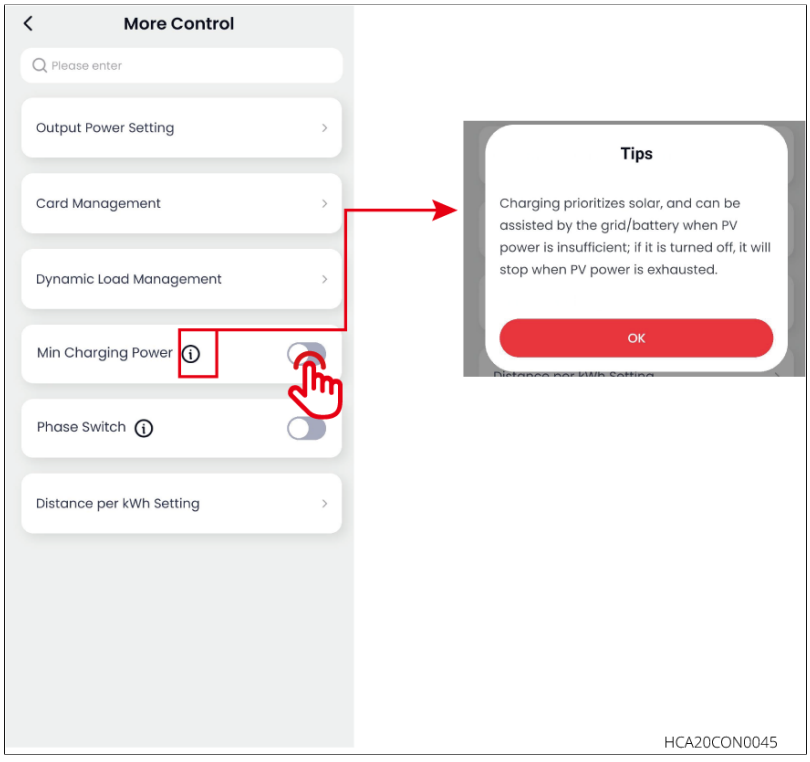
7.3.6 Settings



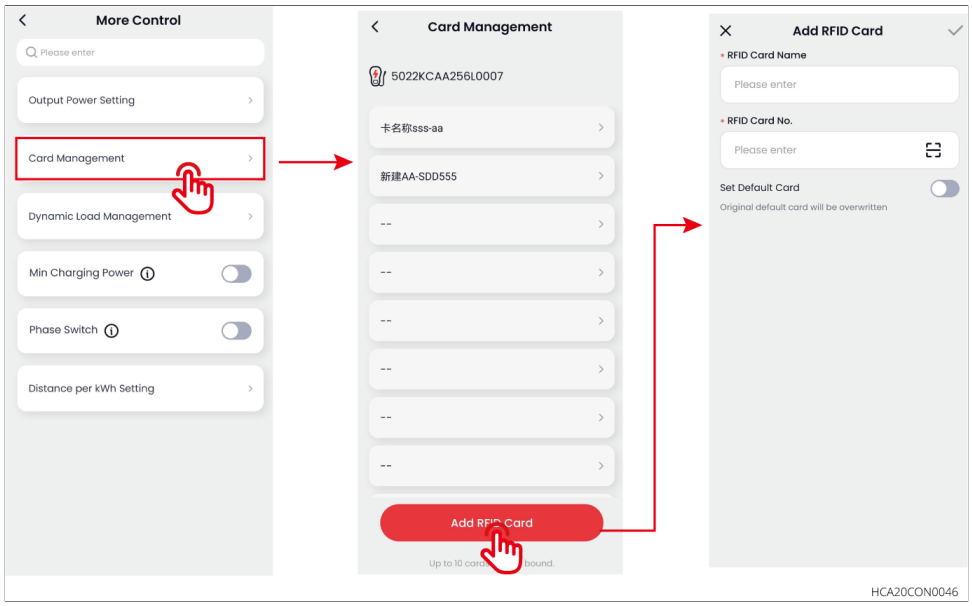
Dynamic Load Management



Ensure minimum charging power

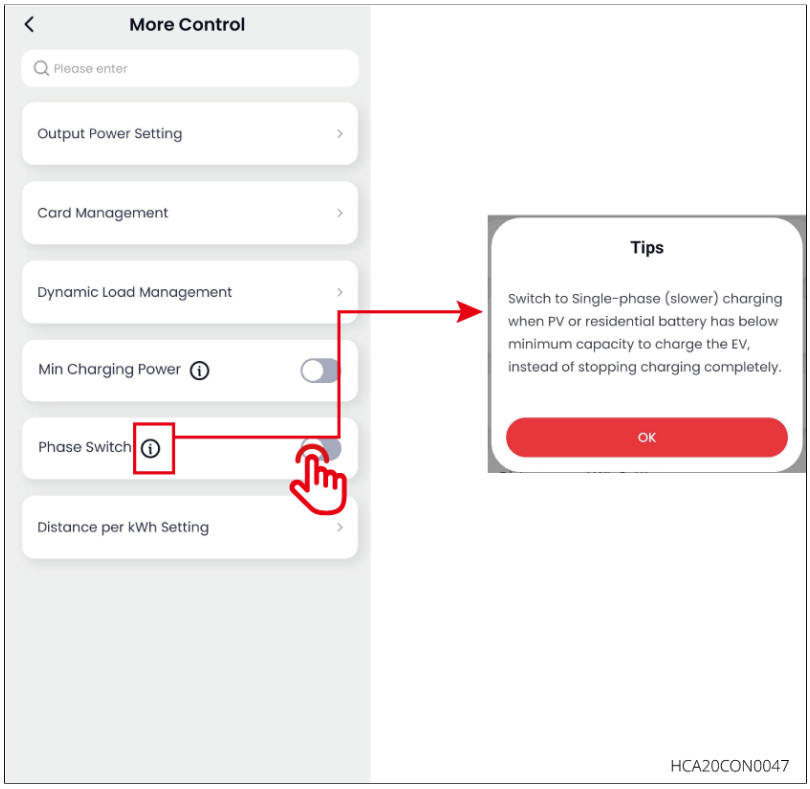


RFID card management RFID cards management

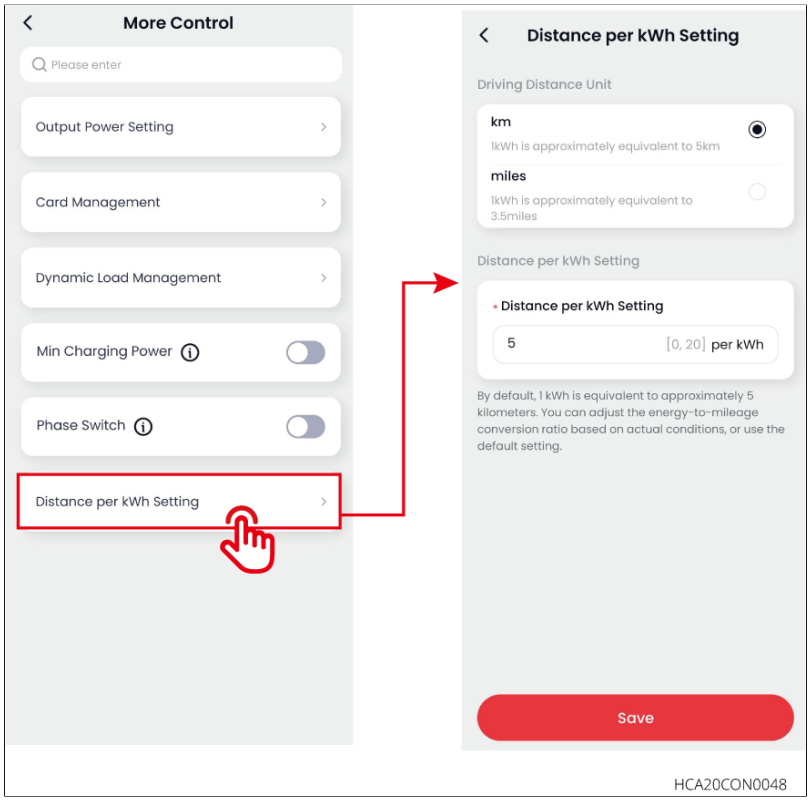


single-phase/three-phase switching

Note
Only three-phase charging piles support the single/three-phase switching function.



Conversion between Electric Energy and Driving Range


More Control
Please enter
Output Power Setting
Card Management
Dynamic Load Management
Min Charging Power
Phase Switch
Distance per kWh Setting
Distance per kWh Setting
Driving Distance Unit
km
1kWh is approximately equivalent to 5km
miles
1kWh is approximately equivalent to 3.5miles
Distance per kWh Setting
Distance per kWh Setting
5
[0, 20] per kWh
By default, 1 kWh is equivalent to approximately 5 kilometers. You can adjust the energy-to-mileage conversion ratio based on actual conditions, or use the default setting.
Save
HCA20CON0048

8 system maintenance

8.1 Charging pile de-energization

Danger
When performing operation and maintenance on the charging pile, please de-energize it first. Working on live equipment may cause damage to the charging pile or pose an electric shock hazard.

Disconnect the RCBO between the charging station and the grid or inverter.

8.2 Dismantling of charging pile

Warning
• Ensure the charging pile is de-energized. • Please wear personal protective equipment when operating the charging pile.

1. Disconnect all electrical connections of the charging pile, including: AC lines and communication lines.
2. Remove the charging pile from the backplate.
3. Remove the back mounting plate.
4. Store the charging pile properly, and if it is to be put into use again later, ensure that the storage conditions meet the requirements.

8.3 scrapped charging pile

When the charging pile can no longer be used and needs to be scrapped, please dispose of it according to the electrical waste disposal requirements of the laws/regulations of the country/region where the charging pile is located: dispose of the charging
pile, and do not treat the charging pile as household waste.

8.4 Periodic maintenance

Maintenance Content	Maintenance method	Maintenance cycle
EPO switch	Open and close the EPO switch consecutively 3 times to ensure the EPO switch functions normally.	Once every six months.
Electrical connection	Check whether electrical connections are loose, whether cable exteriors are damaged, and whether copper is exposed.	Once every 6 months to once every year.
sealing performance	Check whether the sealing of the equipment cable entry hole meets the requirements. If the gap is to o large or it is not sealed, re-seal it.	1 time/half year ~ 1 time/year
RCBO leakage current Protection switch	Press the residual current protection switch  to ensure the RCBO can trip normally.	1 time/month

8.5 Fault handling

When the EV charger fails, the indicator light will turn red. Please log in to the SEMS+ App or SolarGo App to view detailed fault information.
Please perform troubleshooting according to the following methods. If the troubleshooting methods cannot help you, please contact the after-sales service center.
When contacting the after-sales service center, please collect the following information to facilitate quick resolution of the issue.

1. Charging pile information, such as: serial number, software version, equipment installation time, fault occurrence time, fault occurrence frequency, etc.
2. Equipment installation environment, such as weather conditions, etc. For installation environment recommendations, photos, videos, and other files can be provided to assist in problem analysis.

3. Grid conditions.

Serial Number	Fault Information	fault cause	Resolve measures
1	Charging Gun Connection Failure	The charging connector disconnects during the charging process.	Reinsert the charging gun.
2	Emergency Stop	EPO button is in pressed state.	Manually release the EPO button.
3	Grounding Abnormal	AC input ground wire Not Connected	Inspect and reconnect the ground wire.
4	Environment Overtemperature	The internal temperature of the charging pile exceeds 98°C.	After cooling down, the fault was cleared and the system entered standby mode.
5	Overvoltage	AC input over voltage	Once the voltage returns to normal, the fault is cleared and the system enters standby mode.
6	Low Voltage	AC input under voltage	
7	Overcurrent	Output short circuit or over current	After the output returns to normal, the fault is cleared, and the system enters standby mode.

Serial Number	Fault Information	fault cause	Resolve measures
8	Charging pause timeout.	• The vehicle battery is fully charged. • The battery cannot be charged at low ambient temperature. • Charging gun connection abnormal	1. Check via software whether the battery has been fully charged. 2. If the ambient temperature is to o low, start the vehicle and let it warm up five minutes in advance before charging. 3. Inspect and unplug the charging connector, the n reinsert it after about 15 seconds.
9	Handshake timeout	CP signal communication failed.	1. Check whether the vehicle battery is fully charged. 2. After removing the charging connector for approximately 15 seconds, reinsert it. If the fault persists, restart the vehicle. If the fault cannot be resolved, contact your dealer or after-sales service center.
10	AC Output Relay Sticking Failure	Internal component fault	Restart the charging pile. If the fault persists, please contact your dealer or after-sales service center.
11	Meter Comm Failure		

Serial Number	Fault Information	fault cause	Resolve measures
12	GFCI Failure		
13	Meter Reading Abnormal		
14	EE Read/Write Abnormal		
15	Off-chip Flash Read/Write Abnormal		
16	Leakage current detection device abnormal		
17	Failed to remotely start charging via the APP.	WiFi signal abnormal	Please check the Wi-Fi signal. If the signal is normal, please contact your dealer or after-sales service center.
18	Communication failure between the charging pile and the inverter.	Inverter communication rate mismatch	Set the baud rate of the inverter to 9600.

9 Technical Data

Technical Parameters	GW7K-HCA-20	GW11K-HCA-20	GW22K-HCA-20
Input			
Nominal Input Voltage (V)	230*3, L/N/PE	400*3, 3L/N/PE	400*3, 3L/N/PE
Rated Current from Grid (A)	32	16	32
Nominal Frequency (Hz)	50/60	50/60	50/60
Output			
Rated Power (kW)	7	11	22
Nominal Voltage (V)	230	400	400
Rated Current (A)	32	16	32
Nominal Frequency (Hz)	50/60	50/60	50/60
Protection			
Residual Current Protection	AC 30mA+ DC 6mA	AC 30mA+ DC 6mA	AC 30mA+ DC 6mA
Over current Protection	integration	integration	integration
Over voltage Protection	integration	Integration	Integration
Over heat Protection	Integration	Integration	Integration
Grounding Failure Protection	Integration	Integration	Integration

Technical Parameters	GW7K-HCA-20	GW11K-HCA-20	GW22K-HCA-20
AC Surge Protection	III	III	III
Emergency power-off	integration	Integration	integration
General Data			
Operating Temperature Range (°C)	-30~+50*1	-30~+50*1	-30~+50*1
Relative Humidity	5% to 95% (non-condensing)	5%~95% (non-condensing)	5%~95% (non-condensing)
Maximum Operating Altitude (m)	2000	2000	2000
Cooling Method	Natural cooling	natural cooling	Natural cooling
user interface	WLAN+APP, LED	WLAN+APP, LED	WLAN+APP, LED
Starting Method	APP, RFID, Automatic Start	APP, RFID, Automatic Start	APP, RFID, Auto Start
Communication	Bluetooth, WiFi, RS485 (*2), LAN	Bluetooth, WiFi, RS485 (*2), LAN	Bluetooth, WiFi, RS485 (*2), LAN
Operating mode	Fast Charging, PV Priority, PV + Battery Timed Charging, Dynamic Load Control	Fast Charging, PV Priority, PV + Battery Timed Charging, Dynamic Load Control	Fast Charging, PV Priority, PV + Battery Timed Charging, Dynamic Load Control

Technical Parameters	GW7K-HCA-20	GW11K-HCA-20	GW22K-HCA-20
Weight (kg)	5.2 (with 6m charging cable) 5.6 (with 7.5m charging cable)	5.2 (with 6 m charging cable) 5.6 (with 7.5 m charging cable)	5.2 (with 6-meter charging cable) 5.6 (with 7.5-meter charging cable)
Dimensions (W x H x D) (mm)	208*450*170	208*450*170	208*450*170
Noise (dB)	<20	<20	<20
Standby power (W)	<6.5	<6.5	<6.5
Ingress Protection Rating	IP66*2	IP66*2	IP66*2
charging gun cable and connector	6m (optional 7.5m) IEC Type 2	6m (optional 7.5m) IEC Type 2	6m (optional 7.5m) IEC Type 2
Accessories	RFID cards *2	RFID card*2	RFID cards *2
installation	Indoor or outdoor	Indoor or Outdoor	indoor or outdoor installation
communication protocol	Modbus TCP	Modbus TCP	Modbus TCP
Protection	An external Type A residual current protection device (RCD) is required.	An external Type A residual current device (RCD) is required.	An external Type A residual current operated protection device (RCD) is required.
MTBF (hours)	100,000	100,000	100,000
Protective Class	I	I	I

Technical Parameters	GW7K-HCA-20	GW11K-HCA-20	GW22K-HCA-20
Mounting Method	Wall-mounted / Floor-standing (optional bracket)	Wall-mounted / Floor-standing (optional bracket)	Wall-mounted / Floor-standing (optional bracket)
Certification	IEC61851-1, IEC62311, IEC62955, AS/NZS 4268:2017, IEC61008-1	IEC61851-1, IEC62311, IEC62955, AS/NZS 4268:2017, IEC61008-1	IEC61851-1, IEC62311, IEC62955, AS/NZS 4268:2017, IEC61008-1
EMC	Class B	Class B	Class B
Manufacturing country	China	China	China

Got it — the glossary is ready and I'll strictly follow the provided translations for matching terms. However, I haven't received the actual Chinese HTML/XML content to translate yet. Please paste the content you'd like me to translate, and I'll process it according to your rules (preserving all tags, placeholders, and structure).

10 Contact Details

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service@goodwe.com