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INSTALLATION, OPERATION & MAINTENANCE MANUAL OF SMILE-G3-EVCT11



Copyright Statement

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01 Introduction

1.1 Safety and Warning

- 1) Keep explosive or flammable materials, chemicals, vapors, and other hazardous objects away from the charger.
- 2) Keep the charging socket clean and dry. If it is dirty, please wipe it with a clean and dry cloth. Touching the socket core when the power is on is strictly forbidden.
- 3) Do not use the charger if the device has defects, cracks, abrasions, bare leakage, or any similar issues. Please contact the working staff if any of these conditions occur.
- 4) Do not attempt to disassemble, repair, or modify the charger. If necessary, please contact the working staff. The improper operation could result in device damage, electric leakage, etc.
- 5) If any abnormal condition happens, please press the emergency stop button immediately and cut off all input and output power supply.
- 6) Please charge cautiously in rainy or lightning weather.
- 7) Keep the charger away from children to avoid injury.
- 8) Driving an EV during charging is strictly forbidden. Charge the EV only when it is stationary. Charge hybrid electric vehicles only when the engine is switched off.



Warning



The input and output voltages of this device are dangerously high and can pose a threat to human life. Please strictly observe all warnings and operating instructions on the device and in the manual. Un-authorized and non-professional service personnel should not remove the cover of this device.

1.2 Scope of Delivery

Check the scope of delivery and inspect components to ensure they are present and undamaged. Contact your distributor if the packed components are incomplete or

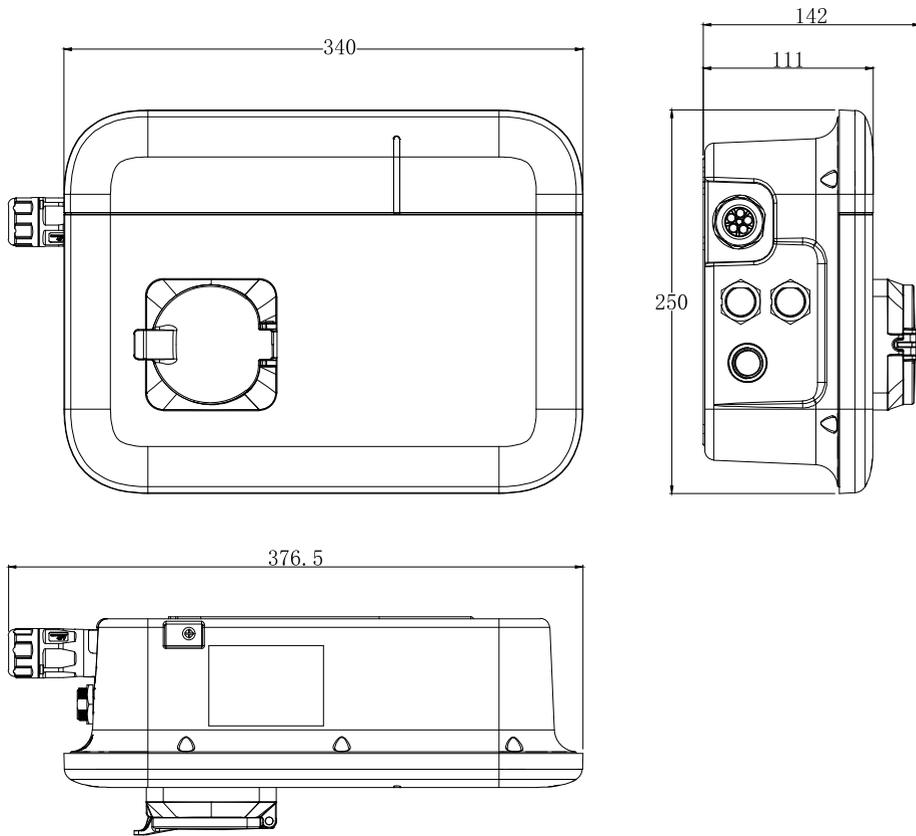
| SMILE-G3-EVCT11 | | |
|---|---|---|
|  |  |  |
| EV Charger (x1) | Installation, operation & Maintenance Manual (x1) | M6*40 Screw (x4) |
|  |  |  |
| Wall bracket (x1) | Wrench (x1) | Terminal block (x5) |
|  |  |  |
| AC Connector (x1) | Terminal Resistor (x2) | RFID Card (x2) |

1.3 Liability Limitation

AlphaESS will not assume any direct or indirect liability for any product damage or property loss caused by the following conditions:

- Product modification, design changes, or parts replacement without AlphaESS's authorization;
- Changes or attempted repairs, and erasing of series number or seals by unauthorized technicians;
- The product wiring and installation are not in compliance with standards and regulations;
- Failure to comply with the local safety regulations;
- Transport damage (including painting scratch caused by rubbing inside packaging during shipping). A claim should be made directly to the shipping or insurance company as soon as the container/packaging is unloaded and such damage is identified;
- Failure to follow any/all of the user manual, installation guide, and maintenance regulations;
- Improper use or misuse of the device;
- Insufficient ventilation of the device;
- The product maintenance procedures have not been in compliance with an acceptable standard;
- Force majeure (violent or stormy weather, lightning, overvoltage, fire, etc.);

1.4 Product Overview



02 Mounting

2.1 Package Verification

After receiving the charger, please unpack and check the following items:

- Inspect the external appearance and notify the seller immediately if there is any damage.
- Check the accessory type and quantity. If the quantity and/or type is incorrect, record it

2.2 Installation Preparation

2.2.1 Tools

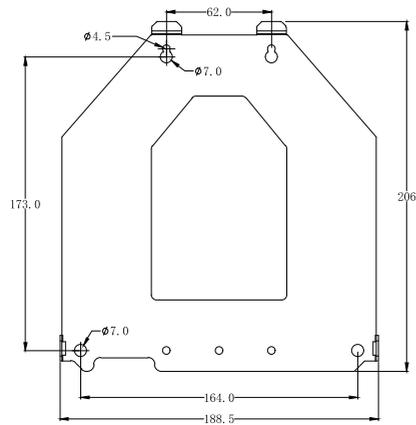
| Tool Name | Photo | Function |
|--|-------|--|
| Multimeter | | Check the electrical connection and electrical parameter |
| Cross Screwdriver (PH2x150mm, PH3x250mm) | | Tighten the screws |
| Insulated Torque Wrench | | Tighten the bolts |
| Electric Drill | | Drill holes in the wall |
| Diagonal Pliers | | Cut cables |

2.2.2 Cables & Materials

| Name | Specification | Quantity |
|--------------------|---|-----------------------------------|
| Power supply cable | 5*6mm ² three-phase power supply cable | Depends on the actual requirement |

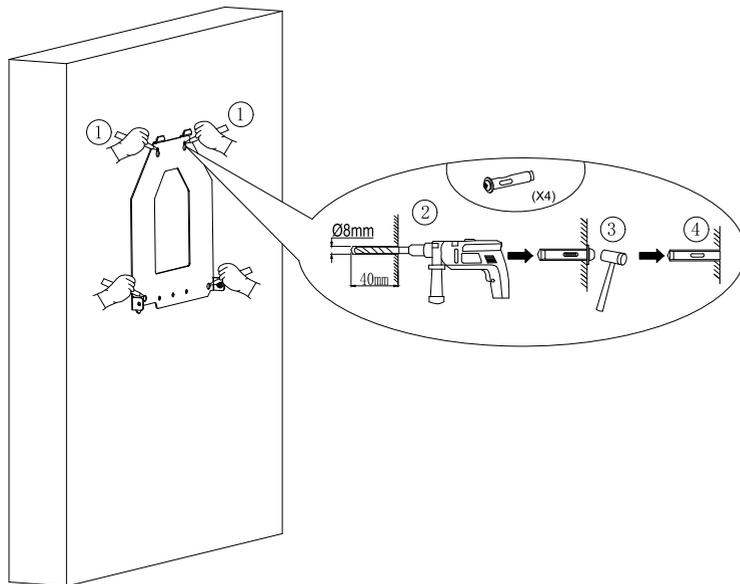
2.3 AC Charger Mounting

2.3.1 Mounting the EV Charger

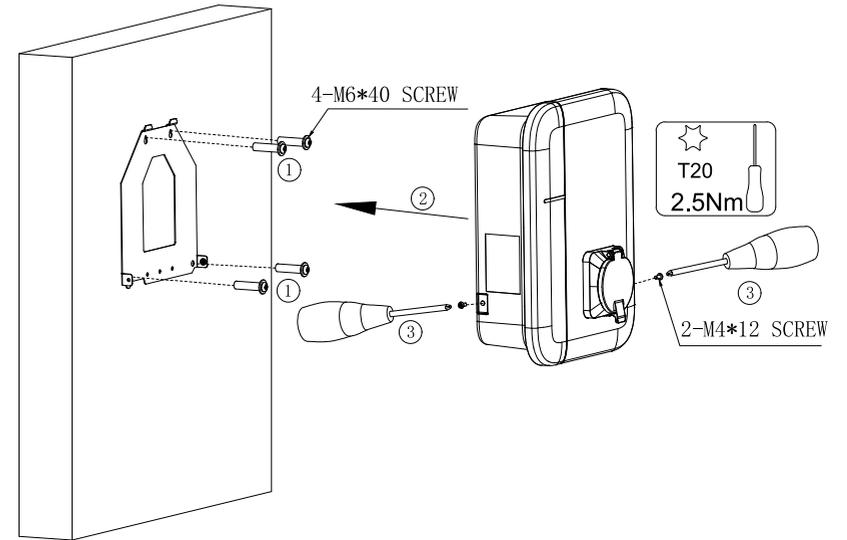


The steps to mount the AC Charger are listed below:

1. Find a flat space on the wall.
2. Use the wall bracket to mark 4 points on the wall.
3. Drill 4 holes with an 8mm diameter drill bit and insert the 4 M6*40 expansion pipes horizontally into the holes. Make sure the screws are fully inserted and the holes are around 40mm deep.



4. Secure the wall bracket to the wall with 4 M6x40 screws. (The EV Charger shall be mounted vertically.)
5. Hang the EV charger on the wall bracket.
6. Secure the EV charger with 2 M4*10 screws and complete the installation.



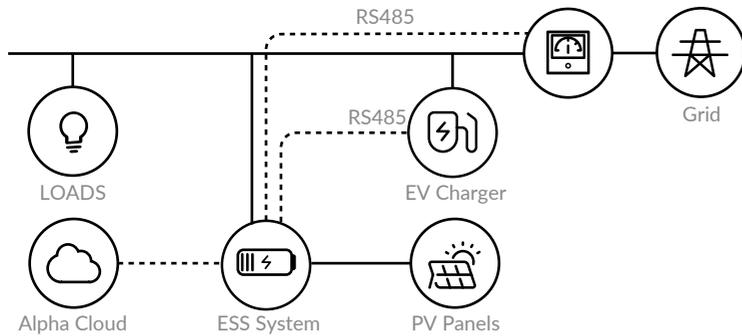
03 Electrical Connection

3.1 Installation Notice

- a) The electrical device should only be installed, operated, serviced, and maintained by qualified personnel. The manufacturer assumes no responsibility for any consequences arising from the use of this device. A qualified person should have the necessary skills and knowledge related to the construction, installation and operation of electrical devices and have received safety training to recognize and avoid associated hazards.
- b) All applicable local, regional, and national regulations must be respected when installing, repairing and maintaining this device.
- c) The communication cable between the EV charger and the energy storage system should not exceed a maximum length of 100m.

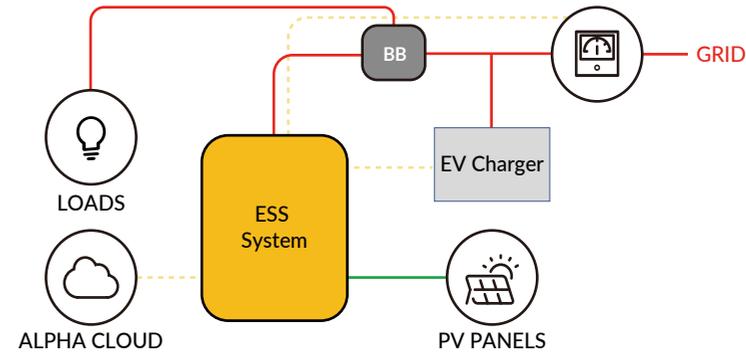
3.2 System Wiring Diagram

To combine with the AlphaESS energy storage system, the EV charger should be installed as the diagram below.



! NOTE: The EV charger should be installed behind the grid meter.

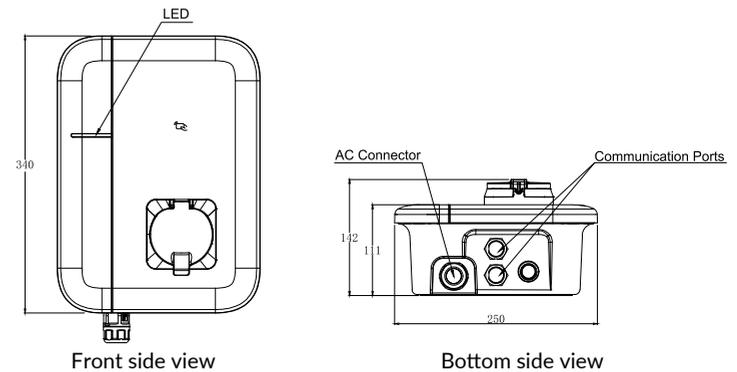
If you have installed a Backup Box, the EV charger should be installed as the diagram below.



! NOTE: The EV charger should be installed between the grid meter and the backup box. The backup box does not support access to communication of ESS temporarily.

3.3 Overview of the Connection Area

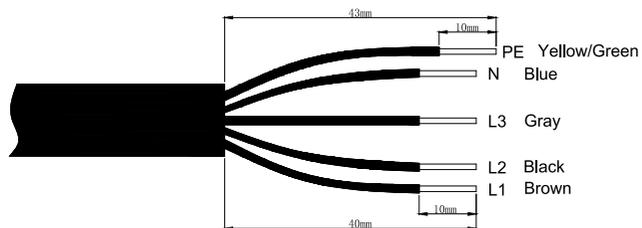
3.3.1 EV Charger Appearance



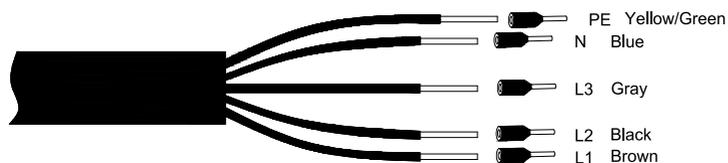
| LED Indicator Instruction | | |
|----------------------------------|-------------|--|
| State | Description | LED Status |
| In Standby | Normal | Flashing green, 1s on, 3s off |
| Charging status | Normal | Breathing green, 1s on, 1s off |
| Plugged charging connector state | Normal | Breathing yellow, 1s on, 1s off |
| Software upgrade | Normal | Flashing white, 200ms on, 1s off, 5 times, then 3s off. The cycle repeats. |
| Ground warning | Normal | Flashing yellow, 2s on, 2s off |
| Relay adhesion | Fault | Red light normally on |
| For details, please refer to 5.1 | Fault | Flashing red |

3.4 AC Wiring

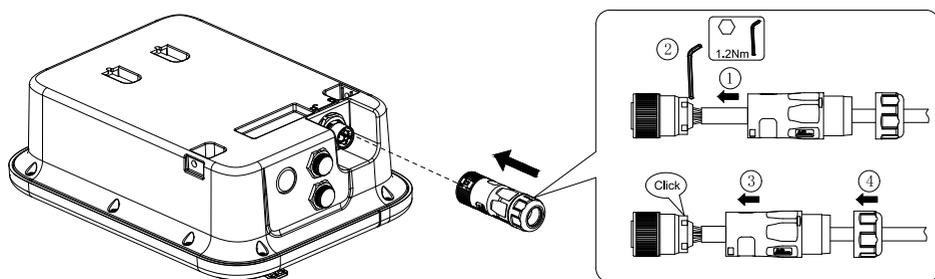
1. Remove a length of 43mm of the cable jacket and strip the wire insulation to a length of 10mm.



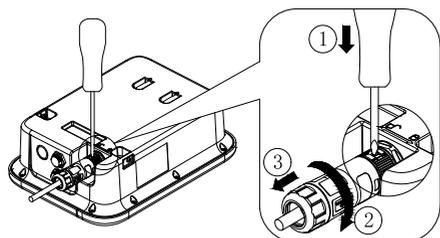
2. Crimp the terminals as shown in the figure below.



3. The wiring is shown in the figure below.



3.1 Unlock instructions



3.5 Communication Connection

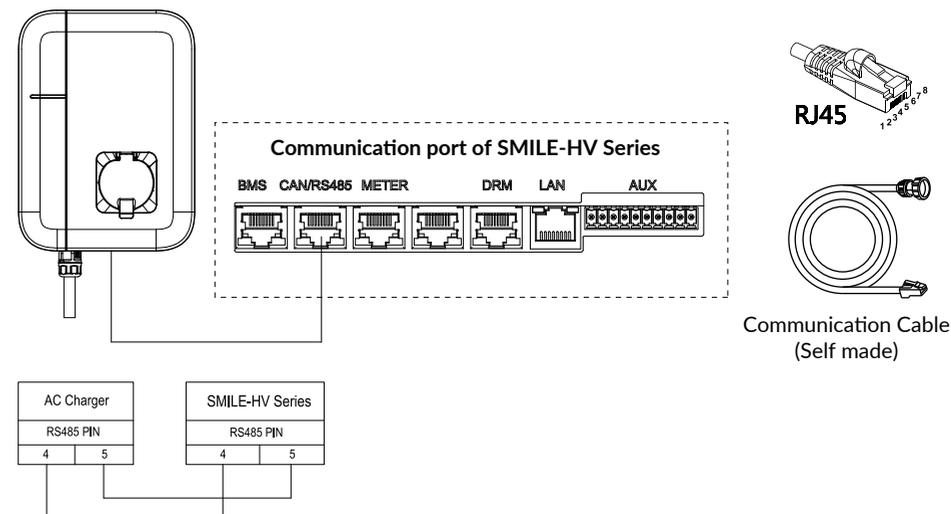
The communication between the EV Charger and EMS of the energy storage system is RS485.

RJ45 PIN definition is as below:

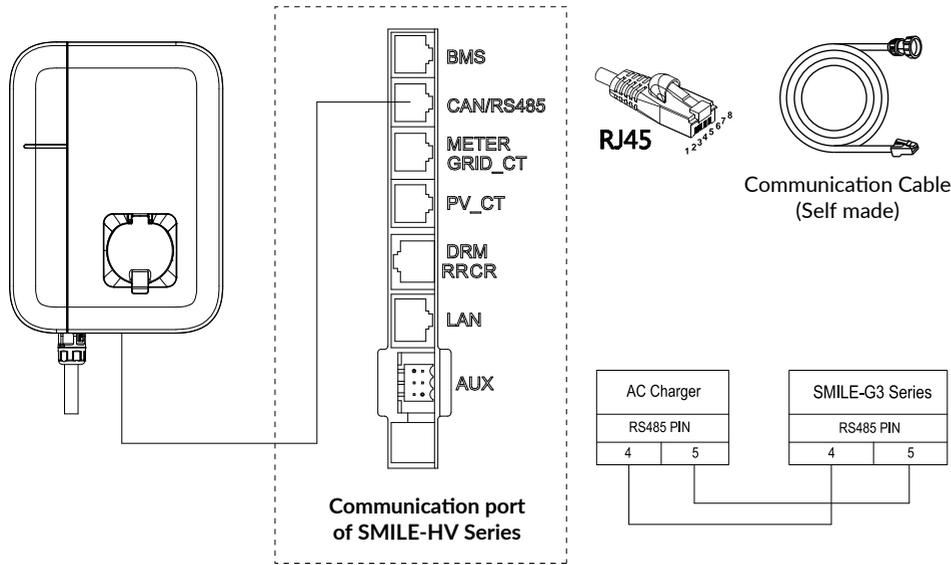
| EV AC Charger – SMILE-G3-EVCT11 | | |
|---------------------------------|---------|---------|
| RJ45 | PIN4 | PIN5 |
| RS485 | RS485-B | RS485-A |

| ESS– SMILE-HV Series | | |
|----------------------|---------|---------|
| RJ45 | PIN4 | PIN5 |
| RS485 | RS485-B | RS485-A |
| ESS– SMILE-G3 Series | | |
| RJ45 | PIN4 | PIN5 |
| RS485 | RS485-B | RS485-A |

3.5.1 Communication Connection with SMILE-HV Series



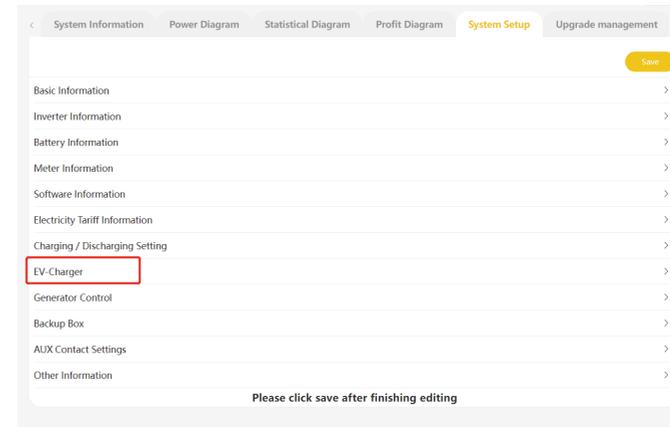
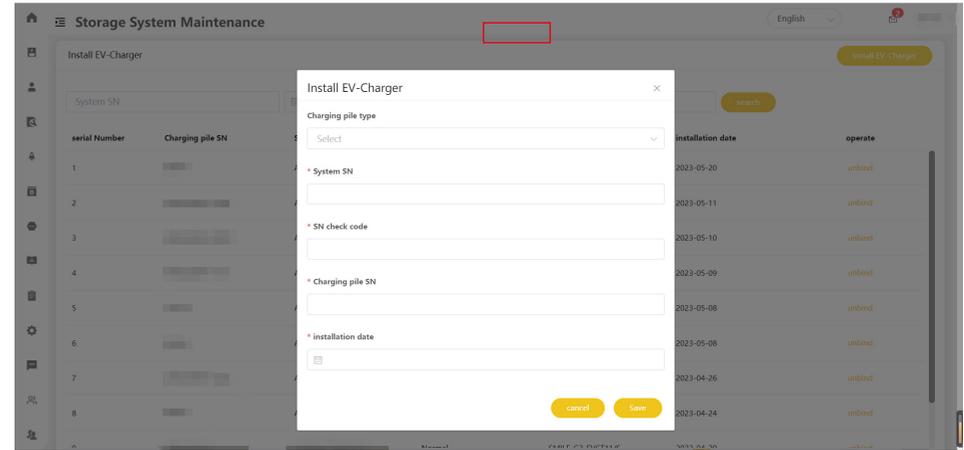
3.5.2 Communication Connection with SMILE-G3 Series



04 System Configuration and Operation

4.1 Configuration

To integrate the EV charger with the energy storage system, please ask the installer to enter the serial number of the EV Charger on the server.



After configuration, please select the relevant SN of the EV charger and enter the current limit of each phase of the house.

4.2 Setup on the AlphaCloud and App

After configuration, the end user can monitor and set up the EV charger on the AlphaCloud and App.

We have three charging strategies: Manual Setting, Timed Charging, Plug and Play. Each strategy has four charging modes to choose from:

1. Green charge-slow charge
2. Green charge-general charge
3. Green charge-quick charge
4. Specific power charge mode



NOTE: Regardless of the chosen charging strategy, the charging mode depends on what you have chosen.

4.2.1 Manual Setting

To charge the electric vehicle immediately, please click the “start” button or use the RFID card after setting up the charging mode.

To stop the EV charger from charging, please click the “stop” button.

4.2.2 Timed Charging

You can also set two charging time periods for the EV charger.

4.2.3 Plug and Play Strategy

When the “Plug and Play” strategy is selected, the EV charger will start charging as soon as the connector is plugged in, and stop charging when the connector is unplugged.

There is no need to swipe a card or control through AlphaCloud & App.

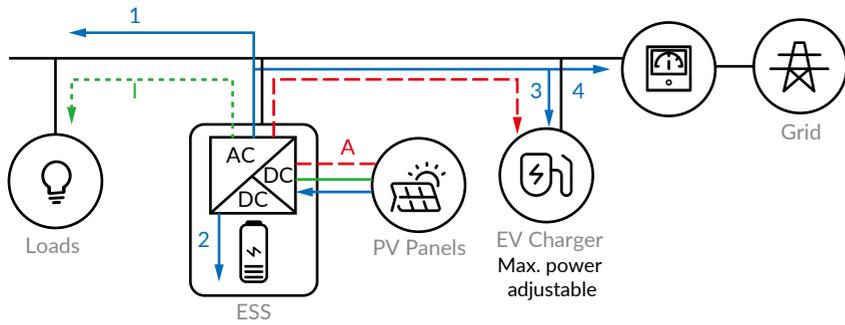
In this function, the Charging mode and the phase of OBC are needed to be set.

4.2.4 Charging Mode Instruction



NOTE: To start the EV charger, the current of each phase should not be less than 6A.

4.2.4.1 Green Charge – Slow Charge



- PV supply Priority: 1. Other Loads 2. Batteries of ESS 3. EV charger 4. Feed-in
- - - EV source Priority: A. PV
- Battery supply Priority: 1. Other Loads

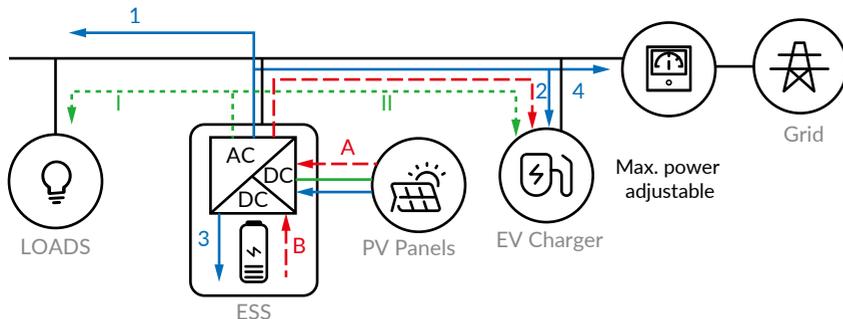
The EV charging source is only PV.

If PV power is available, it will prioritize supplying other loads, then charge the battery of ESS, and then supply the EV charger. Any excess power will be fed back into the grid.

Max. EV charging power $P_{EVmax} = P_{pv} - P_{load} - P_{bat}$

NOTE: If the on-board charger (OBC) on the electric vehicle is three-phase, insufficient PV may not activate the EV charger in this mode.

4.2.4.2 Green Charge – General Charge



- PV supply PRIORITY: 1. Other Loads 2. EV charger 3. Batteries of ESS 4. Feed-in
- - - EV source PRIORITY: A. PV B. Batteries of ESS
- Battery supply PRIORITY: I. Other Loads II. EV Charger

The EV charging source is PV and batteries.

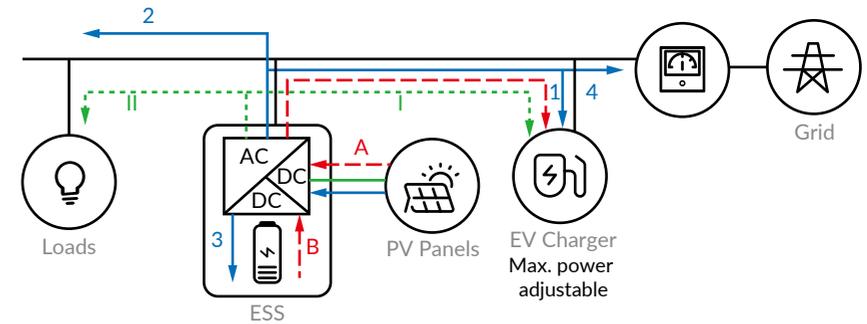
If PV power is available, it will prioritize supplying other loads, then supply the EV charger and maximize the EV charging power, and then charge the batteries of the ESS. Any excess power will be fed back into the grid.

The battery will be used for other loads and then for the EV charger.

Max. EV charging power $P_{EVmax} = P_{pv} - P_{load} + P_{bat}$

NOTE: If the electric vehicle's on-board charger (OBC) is three-phase, insufficient PV and battery power may not activate the EV charger in this mode.

4.2.4.3 Green Charge – Quick Charge



- PV supply Priority: 1. EV charger 2. Other Loads 3. Batteries of ESS 4. Feed-in
- - - EV source Priority: A. PV B. Batteries of ESS
- Battery supply Priority: I. EV Charger II. Other Loads

The PV and battery power will supply the EV charger first.

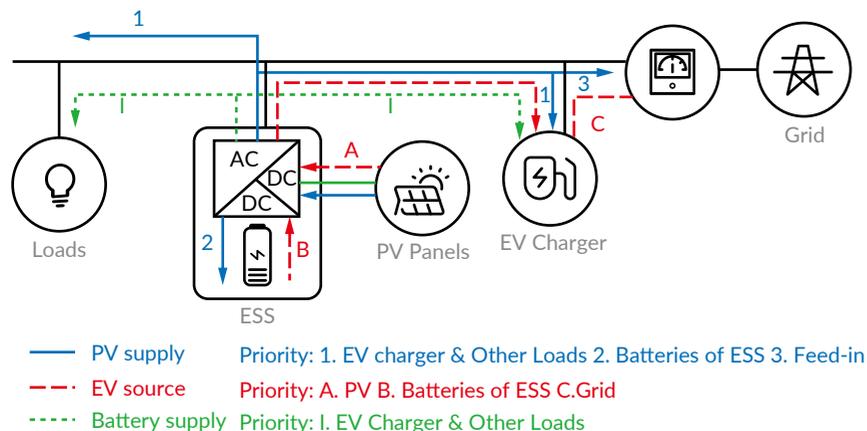
If PV power is available, it will prioritize supplying the EV charger, then supply other loads, and then charge the battery of ESS. Any excess power will be fed back into the grid.

The battery will be used for the EV charger and then for other loads.

Max. EV charging power $P_{EVmax} = P_{pv} + P_{bat}$

NOTE: If the electric vehicle's on-board charger (OBC) is three-phase, insufficient PV may not activate the EV charger in this mode.

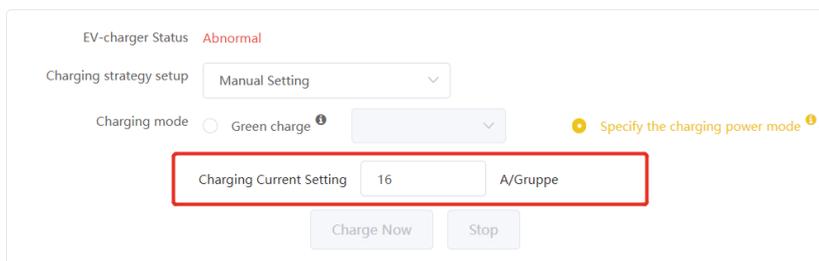
4.2.4.4 Specific Power Charge Mode



The EV charger will charge the electric vehicle with specified power. The PV and ESS system will supply the EV charger first. If the power is not enough, the grid will supply the EV charger simultaneously.

This specified power value can be set by yourself within a range of 6A to 16A per phase, and the default value is the AC rated current value (16A per phase).

If PV power is available, it will prioritize supplying the EV charger and other loads, and then charge the battery of ESS. Any excess power will be fed back into the grid.



4.2.4.5 Mode Option Suggestion

| AC Output Power from AlphaESS Energy Storage System & PV Inverter | <5kWp | | 5~10kWp | | >10kWp | |
|---|--------------|-------------|--------------|-------------|--------------|-------------|
| | Single Phase | Three Phase | Single Phase | Three Phase | Single Phase | Three Phase |
| On-Board Charger of Vehicle | | | | | | |
| Green Charge-Slow | ✓ | | ✓ | | ✓ | ✓ |
| Green Charge-Normal | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Green Charge-Quick | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Max. Power Charge | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Please refer to the actual situation of the customer's home loads.

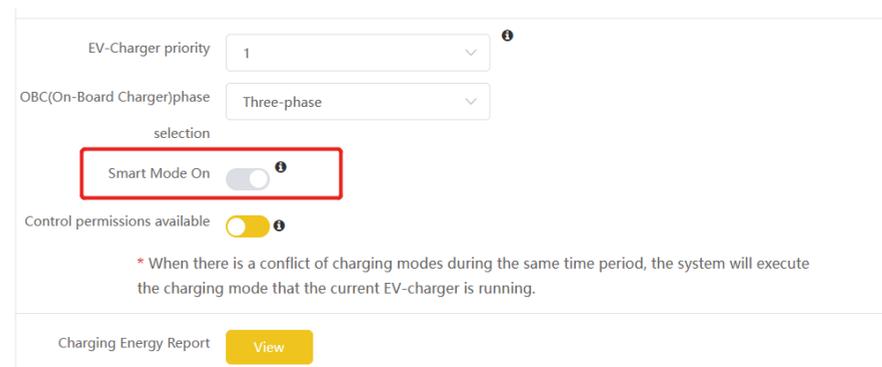
4.2.5 Smart Mode Function

Smart Mode is available when the charging mode is “Green Charge” mode and OBC is three-phase.

When the “Smart mode” is enabled:

If the real setting power is less than the minimum allowable power of three-phase, the phase of OBC will change to single-phase.

Once the real setting power is more than the minimum allowable power of three-phase, the phase of OBC will switch back to three-phase.



4.3 Start and Stop Charging

There are three ways to Start and Stop Charging.

1. Click the “start” or “stop” button on AlphaCloud or the App.
2. Swipe the RFID card.
3. Plug and play when the “Plug and play” strategy is enabled.

5.1 Indicator State

| State | Description | LED Status |
|--------------------------------|-------------|---|
| In the standby | Normal | Flashing green, 1s on, 3s off |
| Charging status | Normal | Breathing green, 1s on, 1s off |
| Plugged gun state | Normal | Breathing yellow, 1s on, 1s off |
| Software upgrade | Normal | Flashing white, 200ms on, 1s off, 5 times, then 3s off. The cycle repeats. |
| Ground warning | Normal | Flashing yellow, 2s on, 2s off |
| Relay adhesion | Fault | Red light normally on |
| Input polarity reverse | Fault | Flashing red, 500ms on, 500ms off, 4 times, then 3s off. The cycle repeats. |
| CP fault | Fault | Flashing red, 500ms on, 500ms off, 2 times, then 3s off. The cycle repeats. |
| Leakage current fault | Fault | Flashing red, 500ms on, 500ms off, 1 time, then 3s off. The cycle repeats. |
| Input terminal overtemperature | Fault | Flashing red, 500ms on, 500ms off, 6 times, then 3s off. The cycle repeats. |
| Relay overtemperature | Fault | Flashing red, 500ms on, 500ms off, 7 times, then 3s off. The cycle repeats. |
| Under voltage fault | Fault | Yellow light on for 2s. Flashing Red, 500ms on, 500ms off, 1 time, then 3s off. The cycle repeats. |
| Over voltage fault | Fault | Yellow light on for 2s. Flashing Red, 500ms on, 500ms off, 1 time, then 3s off. The cycle repeats. |
| Overload fault | Fault | Flashing red, 500ms on, 500ms off, 8 times, then 3s off. The cycle repeats. |
| Over frequency fault | Fault | Yellow light on for 2s. Flashing Red, 500ms on, 500ms off, 2 times, then 3s off. The cycle repeats. |
| Owe frequency fault | Fault | Yellow light on for 2s. Flashing Red, 500ms on, 500ms off, 2 times, then 3s off. The cycle repeats. |
| Leakage current loop abnormal | Fault | Flashing red, 500ms on, 500ms off, 11 times, then 3s off. The cycle repeats. |

5.2 Fault Code

| Error Code | Problems | Possible Causes | Solutions |
|-------------|-----------------------|--|--|
| OverVolt | Input over voltage | The AC input volt-age may be too high. | <ol style="list-style-type: none"> 1. Check the input voltage from the backend. 2. If the voltage is over 276Vac for a short time, wait till the power grid recovers to the normal voltage range. |
| UnderVolt | Input lower voltage | The AC input voltage may be too low. | <ol style="list-style-type: none"> 1. Check the input voltage from the backend. 2. If the voltage is under 184Vac for a short time, wait till the power grid recovers to the normal voltage range. |
| OverCurr | Output overload | The AC output current may be too large. | <ol style="list-style-type: none"> 1. Shut off the leakage current protection switch of the power distribution cabinet immediately. 2. Check whether there is a low resistance connection between the AC output cables of the charger. |
| OverFreq | Input over frequency | AC input frequency may be too high. | <ol style="list-style-type: none"> 1. Check the input voltage frequency from the backend. 2. If the frequency exceeds 63Hz for a short time, wait till the power grid recovers to the normal voltage range. |
| UnderFreq | Input lower frequency | AC input frequency may be too low. | <ol style="list-style-type: none"> 1. Check the input voltage frequency from the backend. 2. If the frequency is lower than 47Hz for a short time, wait till the power grid recovers to the normal voltage range. |
| OverTemp | Over temperature | The temperature may be too low inside the charger. | <ol style="list-style-type: none"> 1. Check the surrounding conditions of the installed chargers for the presence of any heating devices nearby. Make sure the environmental temperature is under 60 °C. |
| Over DCLeak | Over leakage current | The leakage current to the earth may be too high. | <ol style="list-style-type: none"> 1. Shut off the leakage current protection switch of the power distribution cabinet immediately. 2. Check whether there are broken AC output cables or a low resistance connection to the earth. |

| Error Code | Problems | Possible Causes | Solutions |
|--------------------------|---|--|--|
| PhaseError | Reverse connection | Reverse connection of L/N input cable. | 1. Shut off the leakage current protection switch of the power distribution cabinet immediately. |
| | | | 2. Check if AC input/output cables are normal and if the inverse connection of L/N input cables. |
| CableRCError | Charging cable connection abnormal | Poor connection of charging cable with EV/Charger. | 1. Check if the charging cable connection is correct and firm. |
| Charging pile No. 1 lose | Communication cable connection abnormal | Poor connection of charging cable with EV/Charger. | 1. Check if the communication cable connection is correct and firm. |
| | | | 2. Check whether the communication cable sequence is |
| | | | 3. Check whether the charging pile address is set correctly. |
| | | | 4. Check whether the installation number of charging piles is set correctly. |
| Charging pile No. 2 lose | Communication cable connection abnormal | Poor connection of charging cable with EV/Charger. | 1. Check if the communication cable connection is correct and firm. |
| | | | 2. Check whether the communication cable sequence is |
| | | | 3. Check whether the charging pile address is set correctly. |
| | | | 4. Check whether the installation number of charging piles is set correctly. |
| Charging pile No. 3 lose | Communication cable connection abnormal | Poor connection of charging cable with EV/Charger. | 1. Check if the communication cable connection is correct and firm. |
| | | | 2. Check whether the communication cable sequence is correct. |
| | | | 3. Check whether the charging pile address is set correctly. |
| | | | 4. Check whether the installation number of charging piles is set correctly. |

| Error Code | Problems | Possible Causes | Solutions |
|--------------------------|---|--|--|
| Charging pile No. 4 lose | Communication cable connection abnormal | Poor connection of charging cable with EV/Charger. | 1. Check if the communication cable connection is correct and firm. |
| | | | 2. Check whether the communication cable sequence is correct. |
| | | | 3. Check whether the charging pile address is set correctly. |
| | | | 4. Check whether the installation number of charging piles is set correctly. |

**NOTE:**

If the above problems cannot be resolved, please contact the seller.

06 Specification Parameter

| Model | SMILE-EVCT11 |
|-------------------------|---|
| Basic Parameters | |
| Dimension (H x W x D) | 340 x 250 x 142 mm |
| Weight | 3 kg |
| Operating Temperature | -30 ~ 50 °C |
| Related Humidity | 15 ~ 90% |
| Operating Altitude | < 2000 m |
| Warranty | 2 Years Product Warranty |
| Input | |
| AC Rated Voltage | 400 V, 3P+N+PE |
| Rated Current | 16 A |
| Frequency | 50/60 Hz |
| Output | |
| AC Output Voltage | 400 V |
| Max. Current | 16 A |
| Rated Power | 11000 W |
| Interface | |
| Charger Connector | Type 2 Socket |
| Cable Length | External 7 m Type 2 - Type 2 Charging Cable |
| Communication | |
| WiFi | AP Mode Settings |
| EMS | RS485 |
| Protection | |
| RCD | 6 mA DC |
| IP Degree | IP65 |