SOLAX



Binary

22 kW

User Manual

Version 0.0

www.solaxpower.com

eManual in the QR code or
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About This Manual

Scope of Validity

This manual is an integral part of Binary Series EV-Charger. It describes the transportation, storage, installation, electrical connection, commissioning, maintenance and troubleshooting of the product. Please read it carefully before operating.

This manual is valid for the following models:

BRY-A22D7	BRY-A22D7-N
BRY-A22D7-G	BRY-A22D7-GN

Model description (using BRY-A22D7-GN as an example)



Item	Description
1	"BRY": the abbreviation for product family name "Binary"
2	"A22": the charging type is AC charging and the nominal output power is 22 kW
3	"D7": the discharging type is DC discharging and the nominal output power is 7 kW
4	"G": grey for the upper cover; white without "G"
5	"N": with PEN protection function; blank without PEN protection

Target Group

The installation, maintenance and grid-related setting can only be performed by qualified personnel who:

- Are licensed and/or satisfy state and local regulations.
- Have good knowledge of this manual and other related documents.

Conventions

The symbols that may be found in this manual are defined as follows.

Symbol	Description
DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION!	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE!	Provides tips for the optimal operation of the product.

Change History

Version 0.0 (2026-07-24)

Initial release

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1 Safety

1.1 General Safety

The series EV-Charger has been meticulously designed and tested to comply with the relevant state and international safety standards. Nevertheless, like all electrical and electronic equipment, safety precautions must be observed and followed during the installation of the EV-Charger to minimize the risk of personal injury and ensure a safe installation.

Please carefully read, fully comprehend, and strictly adhere to the comprehensive instructions provided in the user manual and any other relevant regulations prior to the installation of the EV-Charger. This document does not replace and is not intended to replace any local, state, provincial, federal or national laws, regulations or codes applicable to the installation, electrical safety and use of the EV-Charger.

SolaX assumes no responsibility for any consequences resulting from the violation of the storage, transportation, installation and operation regulations outlined in this document. Such consequences include, but are not limited to:

- EV-Charger damage caused by force majeure events, such as earthquakes, floods, thunderstorms, lightning, fire hazards, volcanic eruptions, and similar events.
- EV-Charger damage due to human causes.
- EV-Charger damage caused by strong vibrations from external factors before, during and after installation.
- Use or operation of the EV-Charger in violation of state and local policies or regulations.
- Failure to comply with the operation instructions and safety precautions provided with the product and in this document.
- Improper installation or use of the EV-Charger in unsuitable environmental or electrical conditions.
- Unauthorized modifications made to the product or its software.
- EV-Charger damage occurring during transportation by the customer.
- Storage conditions that do not meet the requirements specified in this document.
- Installation and commissioning performed by unauthorized personnel who lack the necessary licenses or do not comply with state and local regulations.

1.2 Safety Instructions

Save these important safety instructions. Failure to follow these safety instructions may result in damage to the EV-Charger and injury or even loss of life.

DANGER!

- Danger to life due to output and input high voltages in this device.
- Do not attempt to open the enclosure without authorization from SolaX. Unauthorized opening of the enclosure will void the warranty and can result in lethal danger or serious injury due to electric shock.
- Do not use an extension cord on the EV-Charger, or it may cause a risk of fire or electric shock.
- Do not use the EV-Charger if the device has defects, cracks, abrasion, or shows other signs of damage.
- Disconnect the power supply to the EV-Charger before installation, maintenance and other operations.

WARNING!

- Keep away from flammable, explosive materials and humid or corrosive substance.
- The device is intended only for charging electric vehicles. Do not charge other devices.
- In case any emergency condition happens, cut off all input and output power supply immediately.
- During the charging and discharging process, the electric vehicle is not allowed to drive. Charge or discharge only when the electric vehicle stays still. For hybrid car, charge or discharge only when switching the engine off.
- Do not touch live electrical parts of the EV-Charger, especially when during charging and discharging.
- Charge and discharge with caution in case of rainy or thundering weather.

CAUTION!

- Keep children away from the EV-Charger.
- During operation, the EV-Charger may become hot. There may be burn injuries caused by hot surface.
- Incorrect operation or misuse may result in: Injury or death to the operator or third parties; Damage to the device and other property of the operator; Inefficient operation of the device.

NOTICE!

- All operations shall be in compliance with local laws and regulations.
- Do not use cleaning solvents to clean any part of the EV-Charger. Clean the device with a clean, dry cloth to remove dust and dirt.
- Keep all product labels and the nameplate on the EV-Charger clearly visible and well-maintained.

NOTICE!

- Only connect the EV-Charger to the grid with the permission of the local utility grid company.

2 Product Overview

2.1 Product Introduction

The Binary series is AC EV-Charger which supports AC charging and DC discharging functions to realize intelligent control of charging and discharging process for electric vehicles. The EV-Charger needs to operate with SolaX photovoltaic energy storage system, the discharging process is applicable to electric vehicles with V2L function. Details about the system solution, compatible inverter and electric vehicles models, refer to the following texts.

2.2 Supported Power Grid

There are different ways of wiring for different grid systems. Models named without "N" support TN-S, TT (High-voltage), TT (Low voltage) and IT; models named with "N" support TN-C-S. The EV-Charger supports three-phase wiring (A) and single-phase wiring (B). Shown as below:

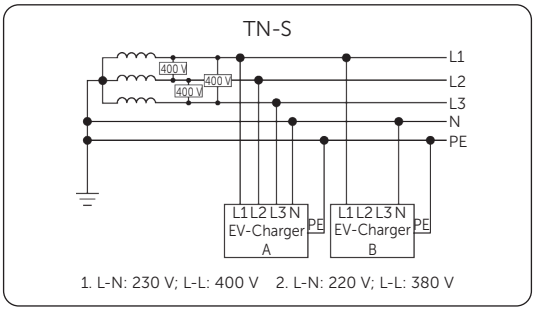


Figure 2-1 Supported power grid for models named without "N" - TN-S

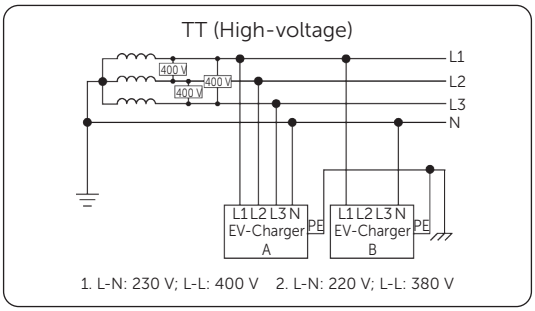


Figure 2-2 Supported power grid for models named without "N" - TT (High-voltage)

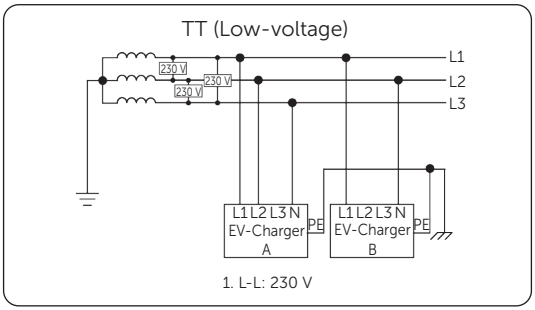


Figure 2-3 Supported power grid for models named without "N" - TT (Low-voltage)

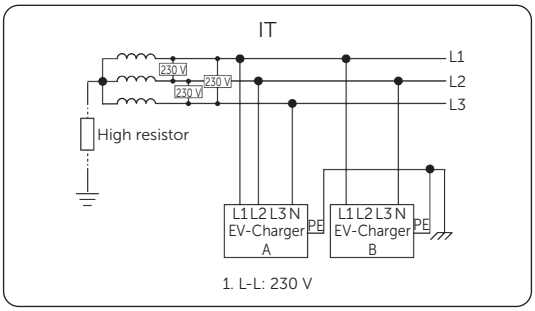


Figure 2-4 Supported power grid for models named without "N" - IT

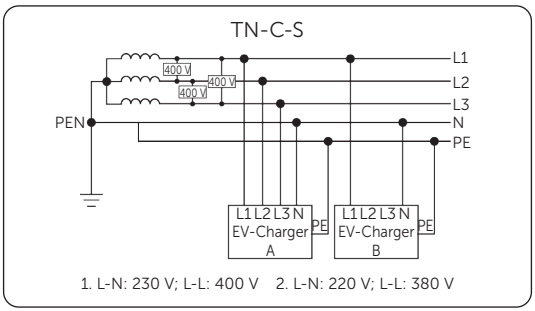


Figure 2-5 Supported power grid for models named with "N" - TN-C-S

2.3 Appearance

2.3.1 Parts Introduction

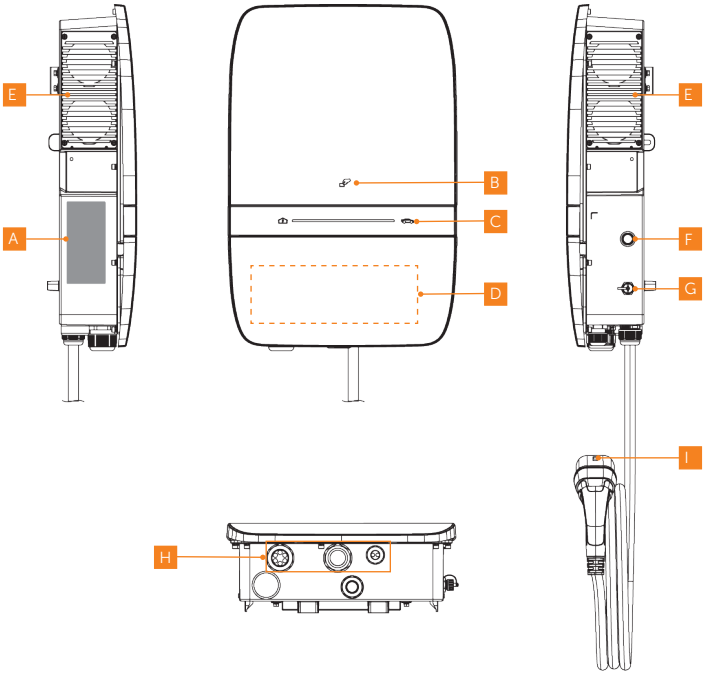


Figure 2-6 Appearance (external parts)

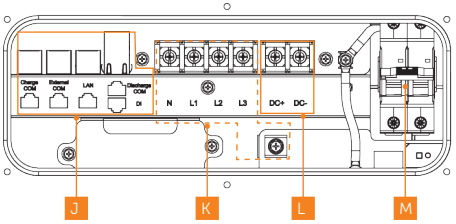


Figure 2-7 Interior parts

Table 2-1 Description of appearance

No.	Item	Description
A	Nameplate	Nameplate clearly identifies the device type, serial number, specific parameters, certification, etc.

No.	Item	Description
B	Card swiping position	Swipe RFID card here to start or stop the device.
C	LED indicator	LED indicator indicates the operating status of the EV-Charger. For details, refer to "2.3.3 LED Indicator".
D	Wiring connection area (interior part)	Remove the upper cover and waterproof plate to find the wiring ports.
E	Shutter	For equipment ventilation and heat dissipation.
F	Mode button	Press the button to start or stop the device, or to switch modes.
G	Black start port	Support connecting to external power supply such as vehicle's power outlet (12V) to achieve black start function.
H	Wiring connection area (external part)	Including external part of AC input terminal, DC output terminal and communication terminal.
I	Charging connector	Charging connector for connecting EV.
J	Communication ports	Wiring ports for communication connection.
K	AC input ports	Wiring ports for AC input connection.
L	DC output ports	Wiring ports for DC output connection.
M	Breaker	Keep the breaker as default (ON).

2.3.2 Dimensions

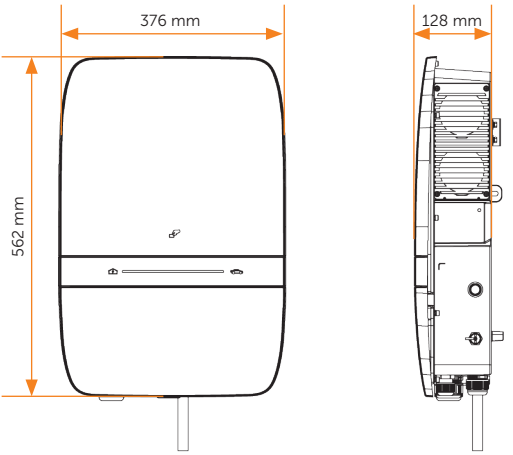


Figure 2-8 Dimensions

2.3.3 LED Indicator

LED indicator indicates the operating states of the EV-Charger through different colour and status changes.



Figure 2-9 LED indicator

Table 2-2 Work mode and LED indicator colour

Work mode		LED indicator colour
Charge	Green mode	Green
	Fast mode	Purple
Discharge	/	Cyan
Automatic	Standby	Blue
	Charge	Green
	Discharge	Cyan

Table 2-3 LED indicator status and device states

LED indicator status	LED indicator colour	Notes of LED indicator	States of device	Remarks for device
Solid on	As per work mode	A side solid on	Available	On-line
		A side flashing		Off-line
		B side solid on		Charging connector plugged in
		B side flashing		Charging connector unplugged
	Red	/	Abnormal or fault	Please check the fault message in the App and refer to corresponding solutions in "13.2 Troubleshooting".

LED indicator status	LED indicator colour	Notes of LED indicator	States of device	Remarks for device
Flowing	Green	From A to B	Green mode charging	The flowing speed reflects the charging power.
	Purple		Fast mode charging	
	Blue		Scheduled time charging	
	Cyan	From B to A	Discharging	The flowing speed reflects the discharging power.
	Yellow	From A to B	Upgrading	The flowing speed reflects the upgrading process.
	Blue	From A to B	In the random delay starting process	The flowing speed reflects the percentage of the remaining count down time to the total random delay time.
Flashing	Blue	Flash every 1 s	Scheduled for charging	Scheduled charging settings has been done but it is not yet the scheduled charging time.
	Blue	Flash every 3 s	In charging prohibited time	/
	Pink	Flash every 1 s	Scheduled for discharging	Scheduled discharging settings has been done but it is not yet the scheduled discharging time.
	Pink	Flash every 3 s	Back up discharging	Backup discharging settings has been done but the discharging conditions have not been met.
	As per work mode	Stop at the flowing position and flash every 1 s	Charge pause/ Discharge pause	/
Breathing	Brown	/	Card activation	Please swipe cards to activate the cards.

2.3.4 Mode Button

Mode button can be operated to start or stop the device, or to switch modes. When the operation takes effect, the buzzer will give a short sound. In discharge or automatic mode, the button light is green; in charge mode, the button has no light.

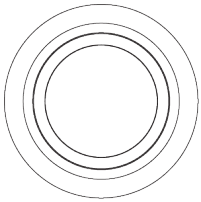


Figure 2-10 Mode button

Table 2-4 Operation of mode button

Device mode	Short press (≤2 s)	Long press (≥3 s)
Standby	Switch between charge mode and discharge mode	Start charging or discharging
Charge	Switch between Fast mode and Green mode	Stop charging
Discharge	Invalid operation	Stop discharging

2.4 Work Mode

The EV-Charger has three working modes described as below:

Table 2-5 Work mode description

Work mode	Description
Charge mode	The EV-Charger charges the vehicle. The charging modes include Green mode and Fast mode.
Discharge mode	The EV-Charger effects the discharging function, discharge the power of the electric vehicle via the EV-Charger to the battery port of the inverter.
Automatic mode	The EV-Charger automatically controls charging and discharging based on the power situation on the grid side. When the power takes from the grid exceeds the threshold for a long time, the EV-Charger will discharge automatically; while the power feed-in to the grid exceeds the threshold for a long time, the EV-Charger will charge automatically. The mode is subject to the vehicle functions (some vehicles require activation of discharging function in the central control). It has three sub-modes: Standby, charge and discharge.

For how to set the work modes and detailed descriptions about Green and Fast mode, please refer to "11.2.2 Mode Settings" and "12.3 Detailed Function Operation".

2.5 States

The states of this series of EV-Charger are described as below:

Table 2-6 States

No.	State	Description
1	Available	The EV-Charger is powered on and available for usage.
2	Preparing	The EV-Charger is connected with the vehicle and waiting to start charging/discharging.
3	Charging	The EV-Charger is in charging process. LED indicator will change according to the operating mode.
4	Finished	The EV-Charger has completed charging.
5	Faulted	The EV-Charger is in fault state.
6	Unavailable	The EV-Charger is not available for usage.
7	Scheduled	The charging connector of the EV-Charger is plugged in but it hasn't been the time for scheduled setting yet.
8	Reserved	The EV-Charger has been reserved by another user.
9	ChargPause	The charging process is suspended. The indicator light will stay in the current flowing position and flash every 1 second.
10	Upgrade	The EV-Charger is remote upgrading.
11	Card Activation	The EV-Charger is waiting for card-swiping to activate the cards.
12	StartDelay	The EV-Charger is in the random delay starting process.
13	Pre-discharge	After enabling the back up function in the App or the local webpage, the EV-Charger will start discharging once the mains power is cut off.
14	Scheduled Discharge	The EV-Charger has complete the scheduled discharging settings and will enter the discharging mode when the pre-set time arrives.
15	Discharging	The EV-Charger is in discharging process.
16	Discharge Suspended	Reserved.
17	Discharge Completed	The EV-Charger has completed discharging by duration or by amount.
18	Discharge Error	The EV-Charger is in fault state due to discharging.

2.6 Symbols on the Label

Table 2-7 Description of symbols

Symbol	Description
	CE mark of conformity
	RCM mark of conformity
	Caution, risk of electric shock
	Caution, risk of danger
	The EV-Charger can be recycled.
	Do not dispose of the EV-Charger together with household waste. Used electrical devices must be collected separately and recycled in an environmentally responsible manner. Ensure that you return your used device to your dealer or obtain information regarding a local, authorised collection and disposal system.

Note: The table is only used for the description of symbols which may be used on the EV-Charger. Please be subject to the actual symbols on the device.

2.7 Principle Circuit Diagram

The principle design of the EV-Charger is shown in the figure below:

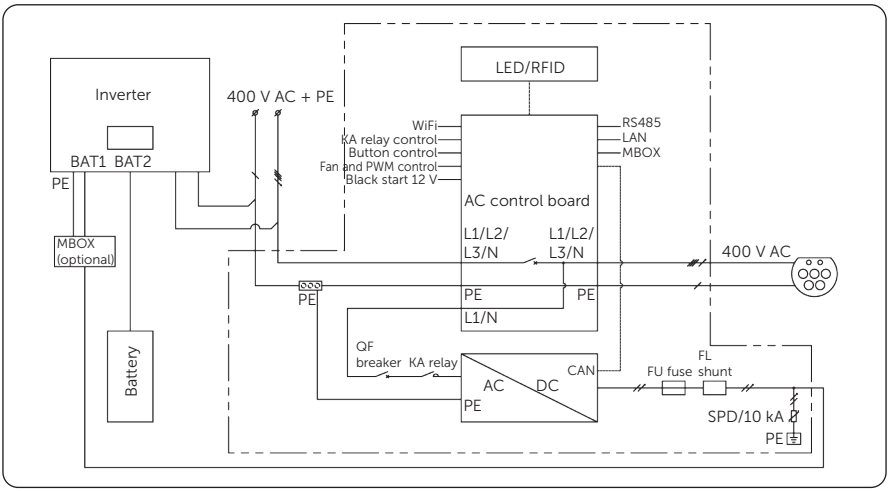


Figure 2-11 Principle Circuit Diagram

3 System Overview

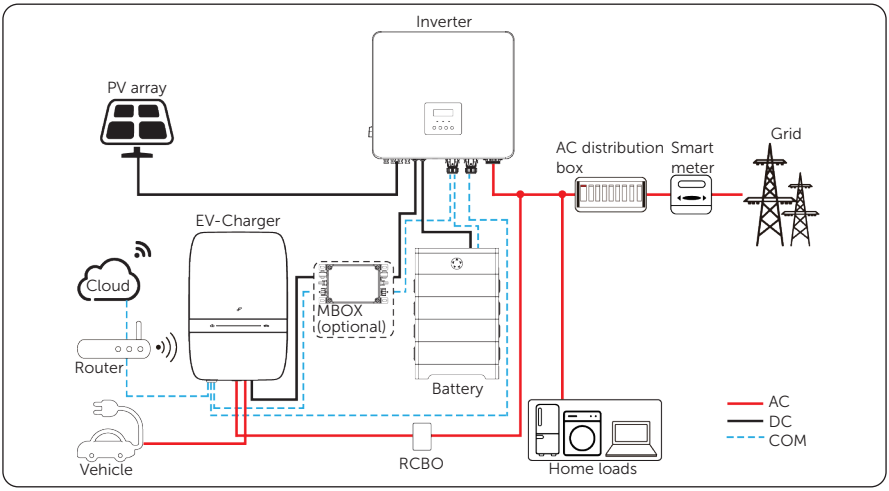


Figure 3-1 System overview

NOTICE!

- The system diagram is for illustration purposes only.

Table 3-1 System item description

Item	Description
EV-Charger (the device covered in this manual)	The Binary series is AC EV-Charger which supports AC charging and DC discharging functions.
Inverter	The EV-Charger needs to operate with SolaX photovoltaic energy storage system. Please choose a compatible inverter. (Here and throughout this manual will take X3-HYB G4 PRO as an example.) Make sure to connect the EV-Charger to the **GRID** port side of the inverter, do not connect to the **EPS** port side.
MBOX (optional)	To ensure the security of the discharging process, if the distance between the EV-Charger and the inverter is ≥ 20 m, connect the matched MBOX in the system and install it horizontally.
Battery	Select battery that could be coupled with the inverter.

Item	Description
RCBO	Please choose and install appropriate RCBO according to local regulations. (Refer to "5.3 Additionally Required Materials" for recommendation.)
Vehicle	Electrical vehicles with V2L function.
SolaXCloud	SolaXCloud is an intelligent, multifunctional monitoring platform that can be accessed either remotely or through a hard wired connection. With SolaXCloud, the operators and installers can always view real time data.
Power grid	400 V/230 V and 380 V/220 V power grid are supported.

4 Transportation and Storage

If the EV-Charger is not put into use immediately, the transportation and storage requirements need to be met:

Transportation

- The EV-Charger must be transported in its original packaging. SolaX will not be held responsible for any damage to the EV-Charger caused by improper transportation or by transportation after it has been installed.
- Observe the caution signs on the packaging of EV-Charger before transportation.
- Pay attention to the weight of EV-Charger. Carry the inverters by the required number of personnel as specified by local regulations (gross weight of Binary series: 19.7 kg).
- Wear protective gloves when carrying the equipment by hand to prevent injuries.
- When lifting up the EV-Charger, hold the bottom position of the EV-Charger. Keep it horizontal in case of falling down.

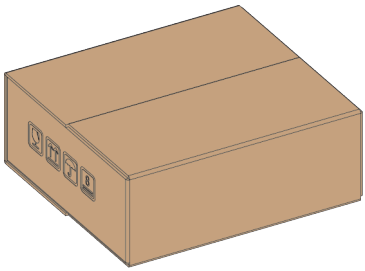


Figure 4-1 Caution signs on the packaging

Storage

- The EV-Charger must be stored in a dry, clean, and ventilated indoor environment that is free from sources of corrosive gases, flammable, explosive material, heat and ignition.
- Do not remove the original packaging material and check the outer packaging material regularly.
- The storage temperature should be between -40°C and +70°C. The humidity should be between 5%RH and 65%RH.
- Stack the EV-Charger in accordance with the caution signs on the carton to prevent their falling down and device damage. Do not place it upside down.

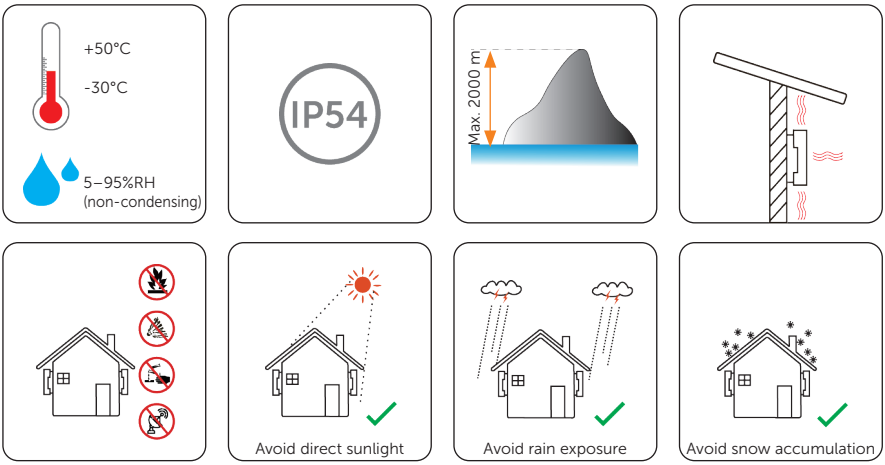
5 Preparation before Installation

5.1 Selection of Installation Location

The installation location selected for the EV-Charger is quite critical in the aspect of the guarantee of device safety, service life and performance. It has the IP54 ingress protection, which is suitable for indoor and outdoor use. The installation position shall be convenient for wiring connection, operation and maintenance.

5.1.1 Environment Requirement

- The ambient temperature: -30°C to +50°C.
- The relative humidity shall be between 5–95%RH (non-condensing).
- Do not install the EV-Charger in the areas where the altitude exceeds 2000 m.
- Install the EV-Charger in a well-ventilated environment for heat dissipation. It is recommended to install an awning over the EV-Charger if it is installed on a support outdoor.
- Do not install the EV-Charger in areas with flammable, explosive and corrosive materials or near antennas.
- Avoid direct sunlight, rain exposure and snow accumulation.



NOTICE!

- For outdoor installation, precautions against direct sunlight, rain exposure and snow accumulation are recommended.
- Exposure to direct sunlight raises the temperature inside the device. This temperature rise poses no safety risks, but may impact the device performance.

- Install the EV-Charger at least 500 meters away from the coast and avoid sea breeze directly hit.

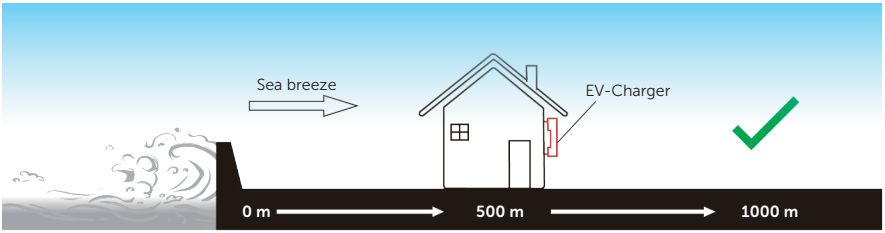


Figure 5-1 Recommended installation position

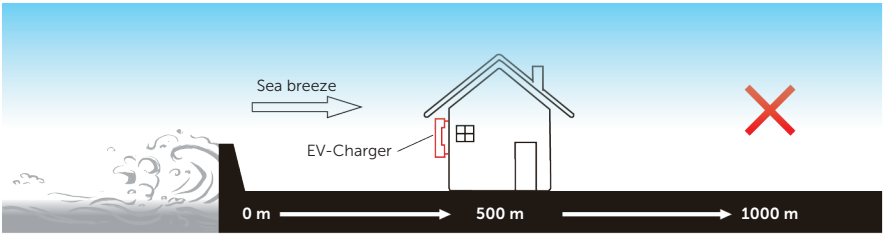


Figure 5-2 Incorrect installation position

5.1.2 Installation Carrier Requirement

The installation carrier must be made of a non-flammable material, such as solid brick, concrete and be capable of supporting the weight of the EV-Charger and suitable of the dimensions of the EV-Charger. If the wall strength is not enough (such as wooden wall, the wall covered by a thick layer of decoration), it must be strengthened additionally.

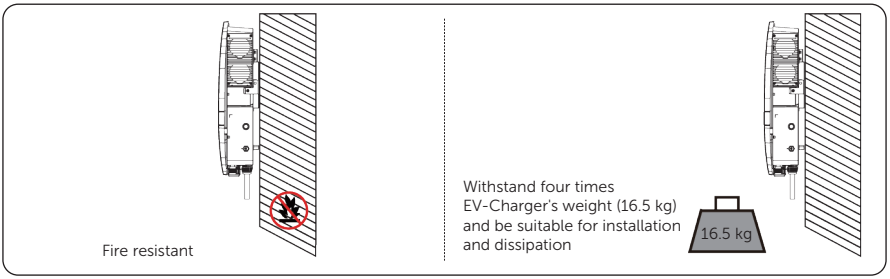


Figure 5-3 Installation carrier requirement

The EV-Charger can also be mounted on EVC pedestal provided by SolaX. For details, please refer to the quick installation guide of the pedestal.

5.1.3 Installation Angle Requirement

The installation angle requirements are as follows:

- Install the EV-Charger vertically or at a maximum back tilt of 5 degrees to facilitate heat dissipation.
- Do not install the EV-Charger at forward tilted, excessive back tilted, side tilted, or upside down.

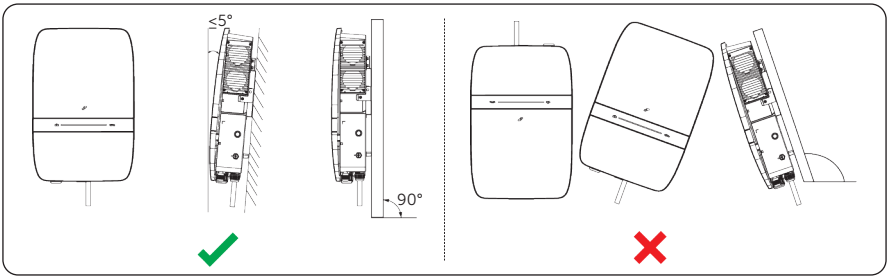


Figure 5-4 Installation angle requirement

5.1.4 Clearance Requirement

To guarantee proper heat dissipation and ease of installation, the minimum space around the EV-Charger must meet the standards indicated below.

In areas with high ambient temperatures, increase the clearances and provide adequate fresh air ventilation if feasible.

NOTICE!

- When planning installation space, consider the bending radius of the cables.

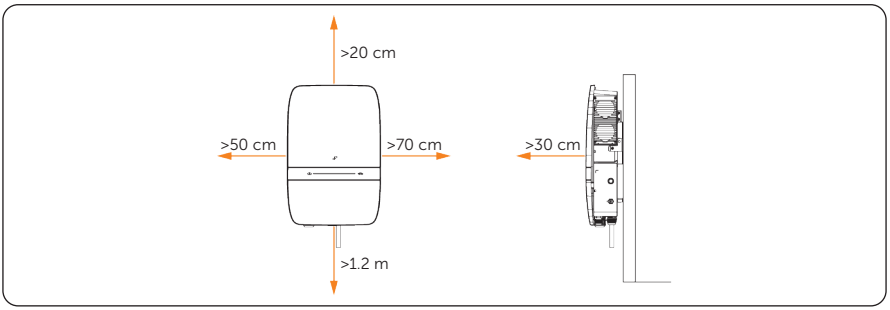


Figure 5-5 Clearance requirement

5.2 Tools Requirement

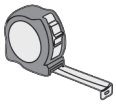
Installation tools include but are not limited to the following recommended ones. If necessary, use other auxiliary tools on site. Please note that the tools used must comply with local regulations.



Hammer drill
(drill bit: Ø6/10 mm)



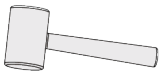
Marker



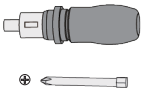
Measuring tape



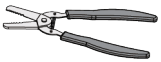
Utility knife



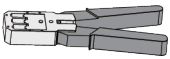
Rubber mallet



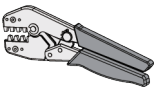
Torque screwdriver
(Philips head: PH2)



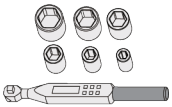
Wire stripper



Crimping tool for RJ45

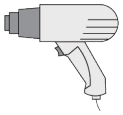


Crimping tool for
R-type terminal



Torque wrench

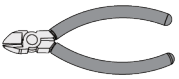
Torque specifications:
including 7, 8, 10 mm
Torque depth:
≥12 mm
Torque range:
1.2 N·m—10 N·m



Heat gun



Spirit level



Diagonal pliers



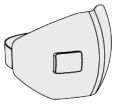
Safety gloves



Safety boots



Safety goggles



Anti-dust mask

5.3 Additionally Required Materials

Table 5-1 Additionally required materials

No.	Required material	Type
1	RCBO *	Type A RCD with a trip current of ≤ 30 mA; 2P and rated current ≥ 25 A for single-phase 4.6 kW, 2P and rated current ≥ 40 A for single-phase 7.4 kW, 4P and rated current ≥ 40 A for three-phase 22 kW
2	AC input cable	Three-core copper wire for single-phase wiring, five-core copper wire for three-phase wiring; Outer diameter: 11-20.5 mm; Conductor cross-section for copper wire: ≥ 4 mm^2 for single-phase 4.6 kW, ≥ 6 mm^2 for single-phase 7.4 kW and three-phase 22 kW
3	DC output power cable	Dedicated power cable complied with UL10269 standard, UV-resistant and with a voltage rating of 1000 V, a temperature resistance of 105°C Outer diameter: 6 mm; Conductor cross-section: ≥ 6 mm^2
4	Communication cable	Network cable CAT5e; Conductor cross-section: 0.2 mm^2
5	Padlock (optional)	With a diameter ≤ 5.5 mm

* Please choose and install appropriate RCBO according to local regulations.

6 Unpacking and Inspection

6.1 Unpacking

- The EV-Charger undergoes 100% testing and inspection before delivery. However, damages may still occur during transportation. Before unpacking, please carefully check the external packaging for any signs of damage, such as punctures or cracks.
- Unpacking the EV-Charger according to the following figure.

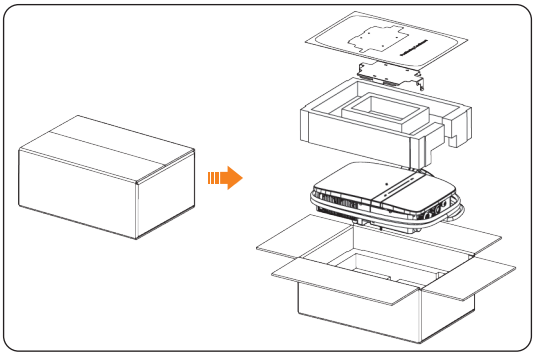
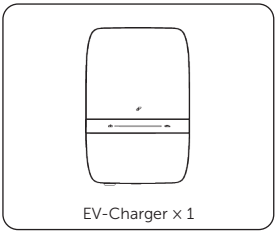
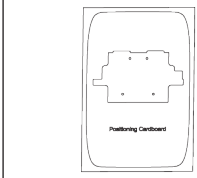


Figure 6-1 Unpacking the EV-Charger

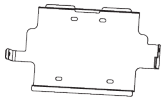
- Properly handle all the packaging materials in case they might be reused for storage and transportation of the EV-Charger in the future.
- Upon opening the package, check whether the EV-Charger is intact and whether all accessories are included. If any damage is found or any parts are missing, contact your dealer immediately.

6.2 Scope of Delivery

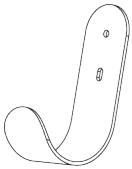

EV-Charger × 1

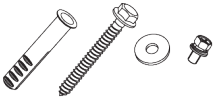


Positioning cardboard × 1


Bracket × 1


Holster × 1

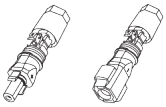

Cable hook × 1



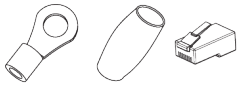
Expansion tube (Ø12.5) × 4
ST6.3 self-tapping screw × 4
Washer × 4
M5 outer hexagonal screw × 2



Expansion tube (Ø5.7) × 6
ST4.2 self-tapping screw × 6



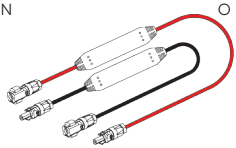
Positive DC connector × 1
Negative DC connector × 1



R-type terminal × 7
Terminal sleeve × 7
RJ45 plug × 5



RFID card × 2
Documents



Australian version only:
Positive DC cable (red)* × 1
Negative DC cable (black)* × 1

Table 6-1 Packing list

Item	Description	Quantity	Remark
/	EV-Charger	1 pc	
/	Positioning cardboard	1 pc	
/	Bracket	1 pc	
/	Holster	1 pc	

Item	Description	Quantity	Remark
/	Cable hook	1 pc	
A	Expansion tube (Ø12.5)	4 pcs	For installation of the bracket
B	ST6.3 self-tapping screw	4 pcs	
C	Washer	4 pcs	
D	M5 outer hexagonal screw	2 pcs	For fixing the EV-Charger on the bracket
E	Expansion tube (Ø5.7)	6 pcs	For installation of the holster and cable hook
F	ST4.2 self-tapping screw	6 pcs	
G	Positive DC connector	1 pc	For DC connection on the inverter (spare accessories) or MBOX side
H	Negative DC connector	1 pc	
I	R-type terminal	7 pcs	For AC input connection and DC output connection
J	Terminal sleeve	7 pcs	
K	RJ45 plug	5 pcs	For communication connection
L	RFID card	2 pcs	
M	Documents	/	
N	Positive DC cable (red)	1 pc	Fuse embedded cables for Australian version only.
O	Negative DC cable (black)	1 pc	

NOTICE!

- * Part N and O are only for Australian version.
- MBOX and connecting cable for black start are not standard accessories for the device. If needed for actual application scenarios, please contact and purchase from SolaX.

7 Mechanical Installation

WARNING!

- Only qualified personnel are allowed to perform the mechanical installation in accordance with local laws and regulations.
- Check the existing power cables or other piping in the wall to prevent electric shock or other damage.
- Make sure there is no electrical connection before installation.
- Use insulated tools and wear personal protective equipment throughout the installation process.

CAUTION!

- Make sure the holes are drilled perpendicular to the wall and avoid tilting up or down.
- When drilling, cover the device to protect it from dusts and debris entering, and clean it at once after finishing drilling.

CAUTION!

- During installation, always be cautious about the weight of the EV-Charger. Improper lifting or dropping of the EV-Charger may result in personal injury.
- If the EV-Charger needs to be temporarily placed on the ground, use foam or other protective materials to protect it against potential damages.
- Avoid placing the EV-Charger in a way that the connectors and wiring terminals are in contact with the floor or any other objects as they are not designed to bear the weight of the EV-Charger.
- Tighten the screws to the torque specified in this document. Otherwise, the EV-Charger might be damaged. This damage is not covered by the warranty.

Installation procedures

Step 1: Align and paste the positioning cardboard to the wall, use it as a template to mark the position of the holes for the bracket (with a total of 4 holes). Then use the holster and cable hook to mark the holes respectively (with a total of 6 holes).

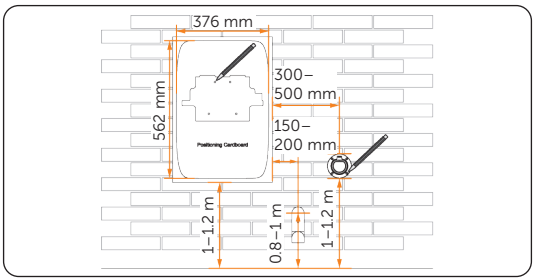


Figure 7-1 Mark the holes

Step 2: Set the positioning cardboard, holster and cable hook aside and drill holes with Ø10 drill bit for the bracket and with Ø6 drill bit for the holster and cable hook, make sure the holes are deep enough for the installation (Depth: at least 60 mm for the bracket; at least 30 mm for the holster and cable hook).

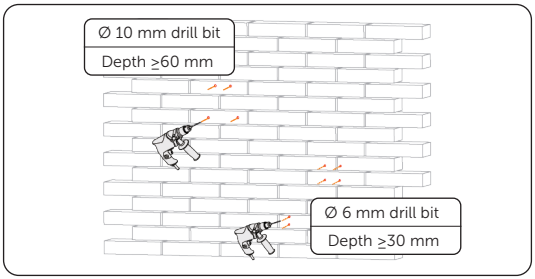


Figure 7-2 Drill the holes

Step 3: Insert the Ø12.5 expansion tubes (part A) and Ø5.7 expansion tubes (part E) in the holes respectively.

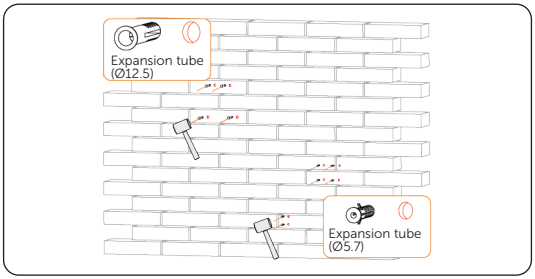


Figure 7-3 Insert the expansion tubes

Step 4: Align the bracket with the holes and screw the ST6.3 self-tapping screws (part B) and the washers (part C) with a torque wrench; align the holster and cable hook with the holes and screw the ST4.2 self-tapping screws (part F) with a Phillips-head torque screwdriver respectively.

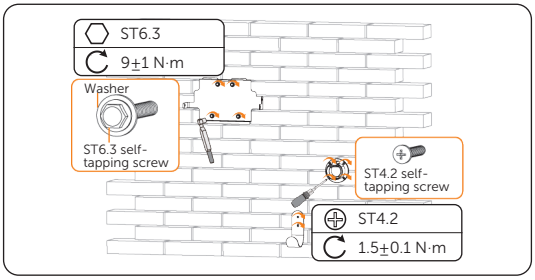


Figure 7-4 Secure the bracket, holster and cable hook respectively

Step 5: Take out the EV-Charger. Lift up the EV-Charger and hang it onto the bracket. Make sure that the hanging hole of the EV-Charger is properly inserted into the lugs of the bracket.

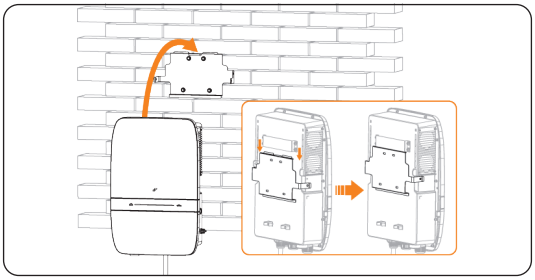


Figure 7-5 Hang the EV-Charger

Step 6: Use M5 outer hexagonal screws (part D) to secure the EV-Charger on both sides.

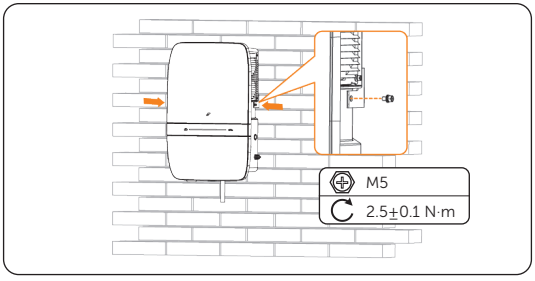


Figure 7-6 Secure the EV-Charger

Step 7: (Optional) For safety reason, install an anti-theft lock. The anti-theft lock is not in the scope of delivery. If necessary, prepare a lock with a diameter smaller than Ø5.5 mm by yourself, and keep the key to the lock in a safe place.

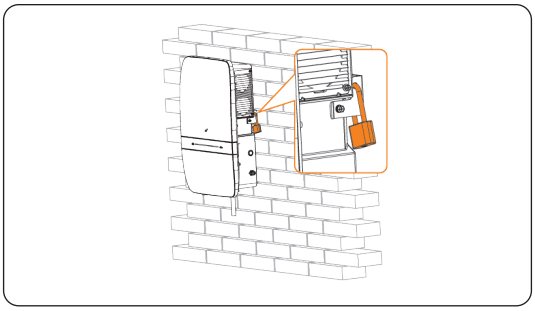


Figure 7-7 Lock the EV-Charger

Step 8: Connect the charging connector to the holster and hang the connecting cable on the cable hook.

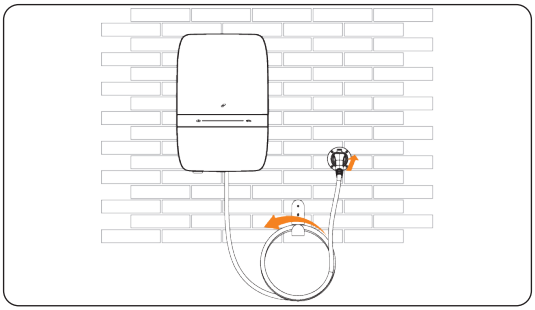


Figure 7-8 Connect the charging connector and hang the cable

8 Electrical Connection

DANGER!

- Before electrical connection, make sure the AC and DC power supply are disconnected. Otherwise, the high voltage might cause electric shock, resulting in severe personal injuries or even death.

WARNING!

- Only qualified personnel are allowed to perform the electrical connection following local laws and regulations.
- Strictly follow the instructions of this manual or other related documents for electrical connection. Damages caused by incorrect wiring are not covered by the warranty.
- Use insulated tools and wear personal protective equipment throughout the electrical connection process.
- Use undamaged, insulated, and adequately dimensioned cables.
- Fasten the cables according to the specifications in the manual.

NOTICE!

- The cable colours in figures shown in this manual are for reference only. Please select cables according to local cable standards.

8.1 Before Connection

Step 1: Pull the lugs of the lower upper cover outward to remove the upper cover.

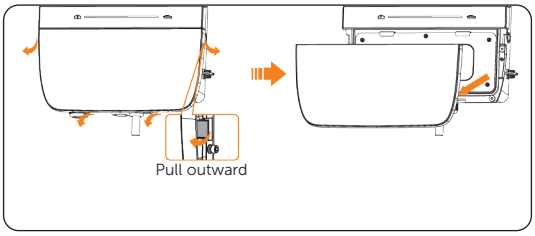


Figure 8-1 Remove the upper cover

Step 2: Unscrew the six M4 screws to remove the waterproof plate. Keep the screws in a safe place.

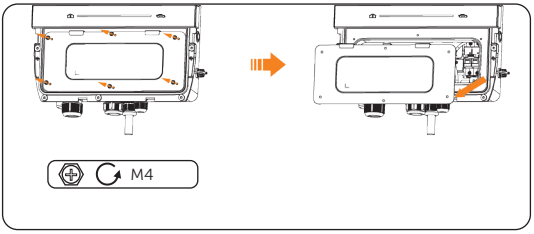


Figure 8-2 Remove the waterproof plate

Step 3: Locate the connection ports.

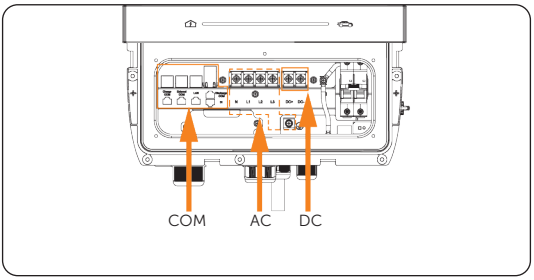


Figure 8-3 Locate the ports

8.2 AC Input Connection

NOTICE!

- Before connecting the device to the grid, approval must be received by local utility as required by national and state regulations.

Requirements for AC input connection

- Grid voltage requirement

  The grid voltage and frequency must be within the allowable range (400 V/ 230 V, 380 V/220V, 50/60 Hz) and comply with the requirements of the local power grid.

- RCBO

  Select appropriate RCBO according to local regulations and the actual application scenarios. See "5.3 Additionally Required Materials" for specification recommendation.

Wiring methods

The EV-Charger supports three-phase wiring and single-phase wiring, please complete the AC input connection based on the actual situation and complied with local regulations.

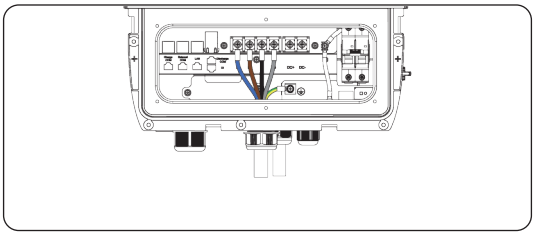


Figure 8-4 Three-phase wiring

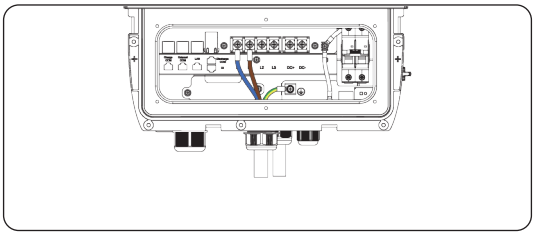


Figure 8-5 Single-phase wiring

The instructions for wiring procedures below will take three-phase wiring as an example.

Wiring procedures

Step 1: Prepare a five-core cable as the AC input cable and strip off the insulation of L1, L2, L3, N and the PE wires to an appropriate length.

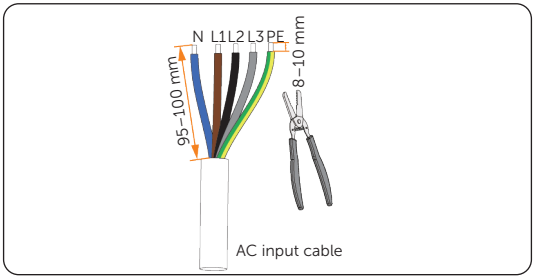


Figure 8-6 Strip the AC input cable

Step 2: Pull the terminal sleeves (part J) over the wires (the bigger end towards the stripped part) and insert the stripped section of the wires into the R-type terminals (part I).

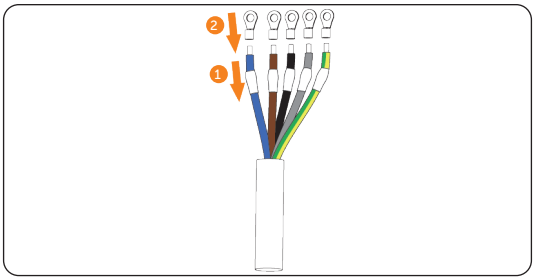


Figure 8-7 Install the terminal sleeve and R-type terminal

Step 3: Crimp them with crimping tool, then pull the terminal sleeves over the stripped section of the R-type terminals and use a heat gun to shrink them so that they can be firmly contacted with the terminals.

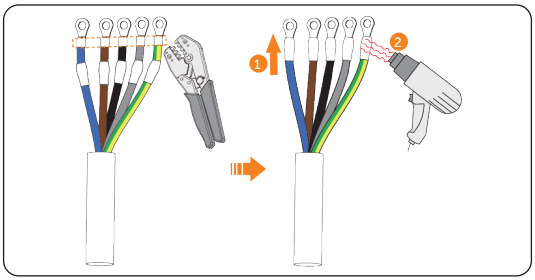


Figure 8-8 Crimp the cable and shrink the sleeves

Step 4: Loosen the swivel nut from the AC terminal and take out the sealing ring, then use a utility knife to cut the membrane of it.

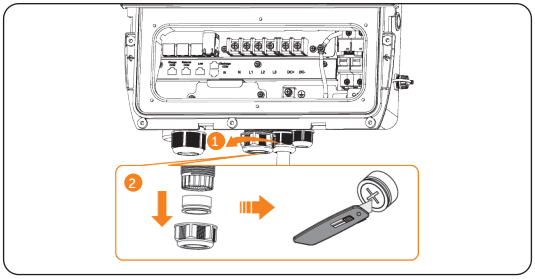


Figure 8-9 Loosen the swivel nut and cut the membrane

Step 5: Remove the screws from the terminal blocks.

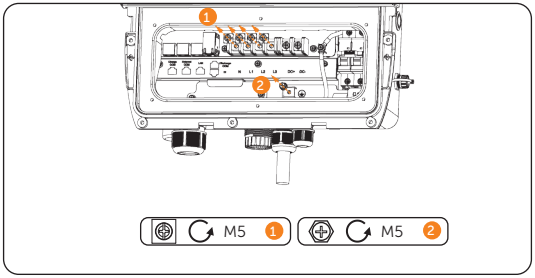


Figure 8-10 Remove the screws

Step 6: Thread the AC input cable through the swivel nut, the sealing ring and the outer terminal channel and connect the wires in sequence to the terminal blocks.

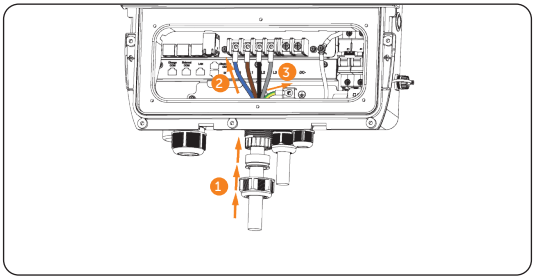


Figure 8-11 Thread the AC input cable

Step 7: Secure the wires with a Phillips-head torque screwdriver. Push up the sealing ring and the swivel nut to an appropriate position, then tighten the swivel nut of the AC input terminal.

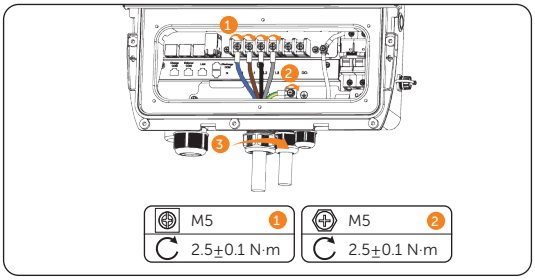


Figure 8-12 Secure the wires and tighten the terminal

8.3 DC Output Connection

Cable end for connecting the inverter/MBOX

Step 1: Strip off the end of the insulation of the DC output power cables for connecting inverter or MBOX to an appropriate length.

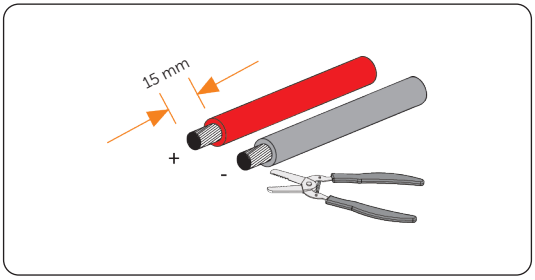


Figure 8-13 Strip the DC cable

Step 2: Carefully insert the stripped cables all the way in the DC connectors (part G and H). The cable ends have to be visible in the buckle.

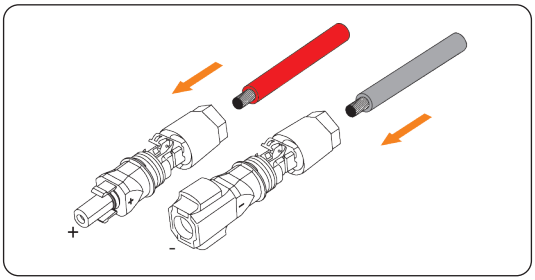


Figure 8-14 Insert the DC cable

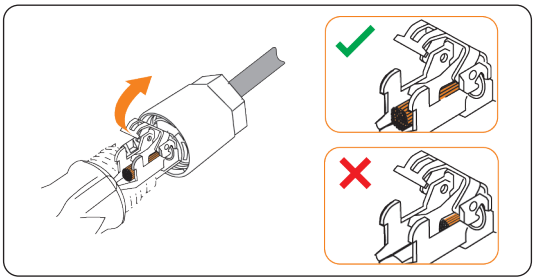


Figure 8-15 Cable end visible

Step 3: Press down the buckle by hand. If it is correctly connected, you will hear an audible "Click". Make sure that the buckle is snapped in.

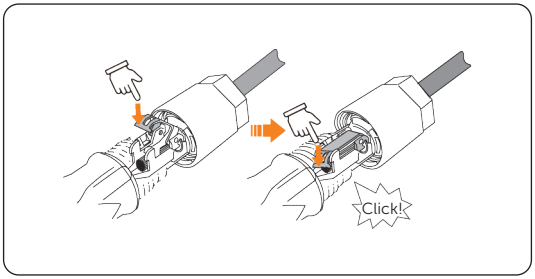


Figure 8-16 Press down the buckle

Step 4: Push the connectors into the sleeve and tighten the cable gland.

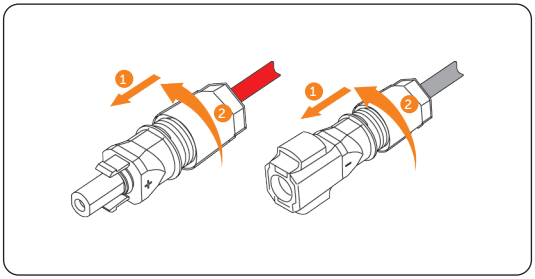


Figure 8-17 Tighten the cable grand

Step 5: Connect to the inverter or the MBOX based on the actual situation.

NOTICE!

- The distance between the EV-Charger and MBOX should be ≤ 30 m.
- For connection on the inverter or the MBOX side, please refer to corresponding manuals.

(For Australian version only) Fuse embedded DC cable connection

For Australian version, the fuse embedded DC cables (part N and O) must be connected between the inverter and the EV-Charger or between the inverter and the MBOX (if the MBOX is connected).

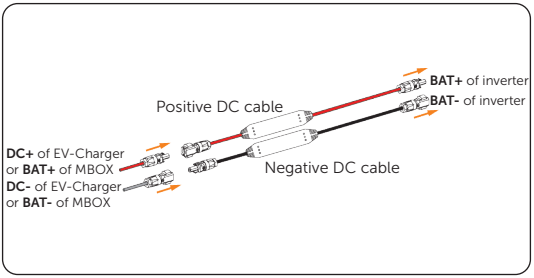


Figure 8-18 Fuse embedded cable connection

Cable end for connecting the EV-Charger

Step 1: Strip off the end of the insulation of the DC cables for connecting the EV-Charger to an appropriate length. Then pull the terminal sleeves (part J) over the cables (the bigger end towards the stripped part) and insert the stripped section into the R-type terminals (part I).

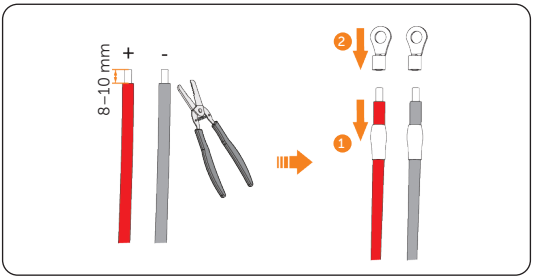


Figure 8-19 Strip the cable and install terminal sleeve and R-type terminal

Step 2: Crimp them with crimping tool, then pull the terminal sleeves over the stripped section of the R-type terminals and use a heat gun to shrink them so that they can be firmly contacted with the terminals.

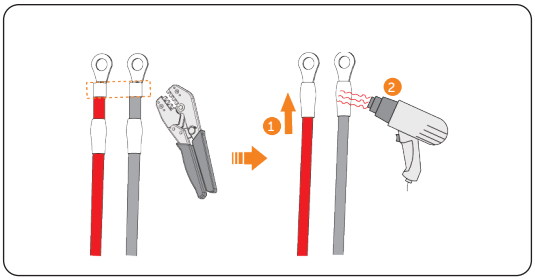


Figure 8-20 Crimp the cable and shrink the sleeves

Step 3: Loosen the swivel nut from the DC output terminal and take out the stopper, the clamping jaw and the plugs.

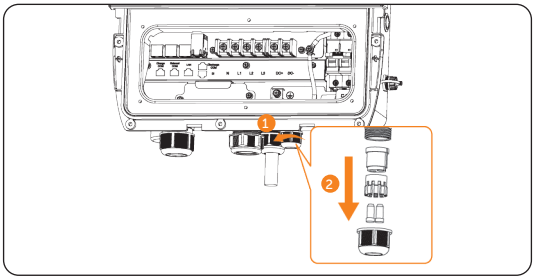


Figure 8-21 Loosen the swivel nut

Step 4: Thread the DC cables through the swivel nut, the clamping jaw and the opening of the stopper one by one.

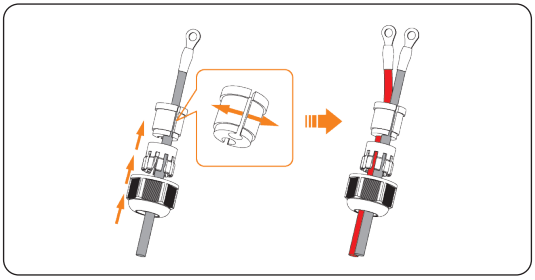


Figure 8-22 Thread the DC cable

Step 5: Remove the screws from the terminal block.

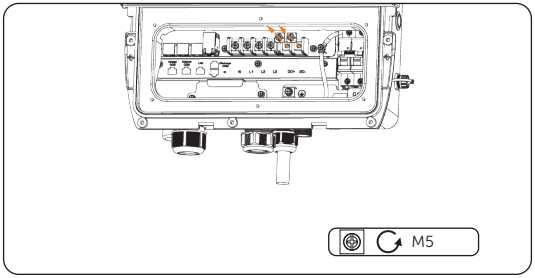


Figure 8-23 Remove the screws

Step 6: Thread the DC output power cables through the outer terminal channel and connect the cables in sequence.

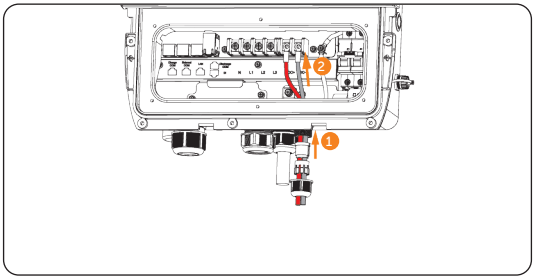


Figure 8-24 Connect the DC output power cables

Step 7: Secure the cables with a Phillips-head torque screwdriver. Push up the stopper, the clamping jaw and the swivel nut to an appropriate position, then tighten the swivel nut of the DC output terminal.

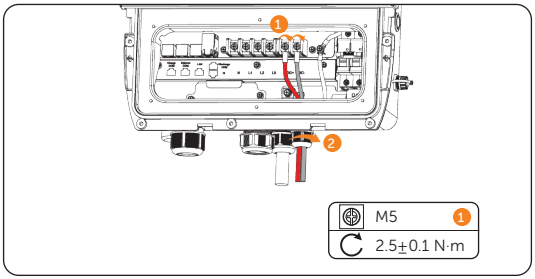


Figure 8-25 Secure the cables and tighten the terminal

8.4 Communication Connection

Pin assignment of communication ports

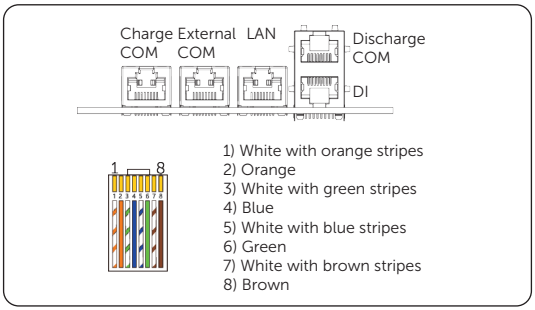


Figure 8-26 Communication ports and pin order

Table 8-1 Pin assignment of communication ports

Assignment	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
Charge COM	/	/	/	A1	B1	485GND	/	/
External COM	/	/	/	A2	B2	/	/	/
LAN	TX+	TX-	RX+	/	/	RX-	/	/
Discharge COM	+15V	+15V	GND	CANH	CANL	GND	/	/
DI	/	/	/	/	GND	DI1	GND	DI2

Note: **External COM** is currently a reserved port.

Wiring procedures

Step 1: Loosen the swivel nut from the communication terminal and take out the stopper, the clamping jaw and the plug(s) as needed. Make sure the unused hole(s) of the stopper are sealed with the original plug(s).

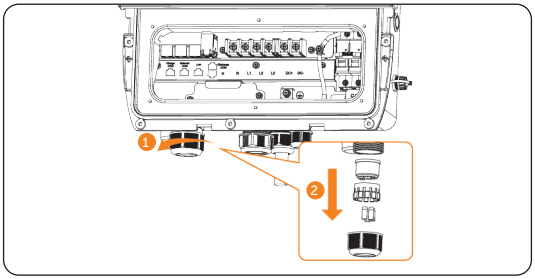


Figure 8-27 Loosen the communication terminal

Step 2: Thread communication cable according to the actual situation.

- Situation 1: Cable with RJ45 plug

a. Use a utility knife to cut openings for cables as needed.

b. Thread the communication cable through the swivel nut, the clamping jaw and cut openings of the stopper.

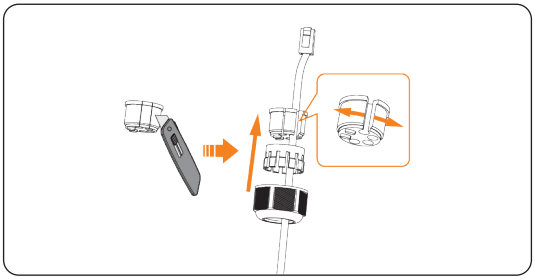


Figure 8-28 Cable with RJ45 plug

- Situation 2: Cable without RJ45 plug

a. Thread the communication cable through the swivel nut, the clamping jaw and the stopper, then strip off the insulation of the communication cable to an appropriate length.

b. Insert the stripped section into the RJ45 plug (part K) following the pin assignments. Crimp it tightly with a crimping tool for RJ45. Pay attention to the pin order of RJ45 plug. Use a network cable tester to check whether the cable has been correctly and properly crimped before connecting to EV-Charger.

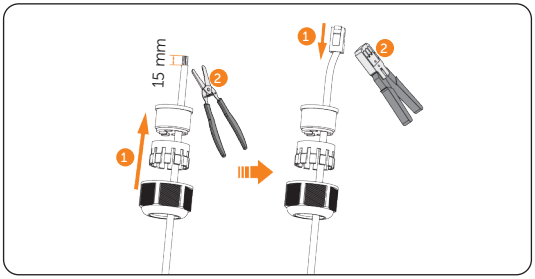


Figure 8-29 Cable without RJ45 plug

Step 3: Repeat step 2 to prepare and thread all communication cables as needed.

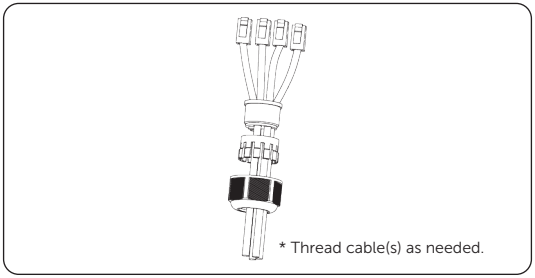


Figure 8-30 Prepare and thread all cables as needed

Step 4: Thread the communication cables through the outer terminal channel and connect the cables to the corresponding ports following the pin assignments according to the actual application scenario.

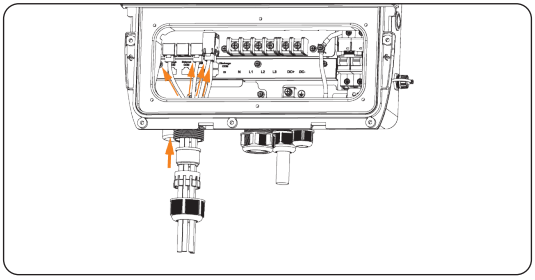


Figure 8-31 Connect communication cables to corresponding ports

Step 5: Push up the stopper, the clamping jaw and swivel nut to an appropriate position and tighten the swivel nut of the communication terminal.

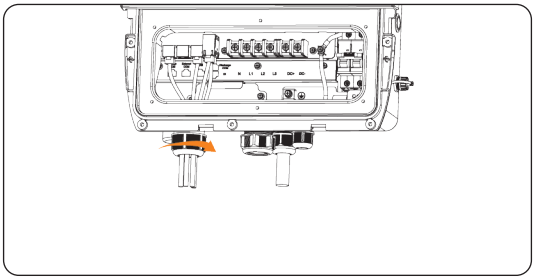


Figure 8-32 Tighten the swivel nut of the communication terminal

Special notice about communication connection

- Communication with inverter/MBOX

  Charge COM and **Discharge COM** ports should connect correctly to the corresponding ports of the inverter or MBOX to ensure proper working of the device.

  Choose a compatible inverter from SolaX. Now X3-HYB G4 PRO and X1-VAST series are compatible, for more information, please contact SolaX.

  To ensure proper operation of the device's discharging function, the EV-Charger and the inverter should be connected correctly. If the distance between the EV-Charger and the inverter is ≥ 20 m, connect the matched MBOX in the system.

  For inverter side, make sure the power cable and communication cable connections are matched.

  » X3-HYB G4 PRO

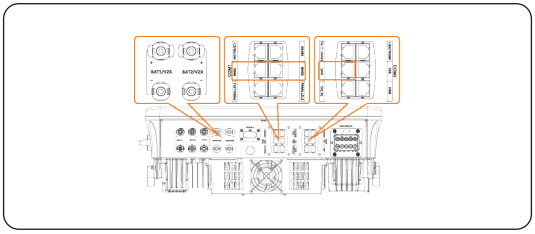


Figure 8-33 Connecting ports of X3-HYB G4 PRO

Table 8-2 Port to port connection with X3-HYB G4 PRO

Binary	X3-HYB G4 PRO	
Charge COM	**EVC** of **COM2**	
Discharge COM	**BMS1** of **COM1**	**BMS2** of **COM1**
DC+	**BAT1+**	**BAT2+**
DC-	**BAT1-**	**BAT2-**

  » X1-VAST

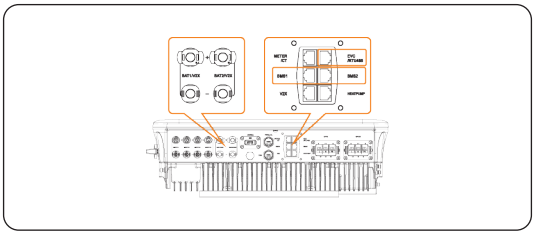


Figure 8-34 Connecting ports of X1-VAST

Table 8-3 Port to port connection with X1-VAST

Binary	X1-VAST	
Charge COM	**EVC/RTU485**	
Discharge COM	**BMS1**	**BMS2**
DC+	**BAT1+**	**BAT2+**
DC-	**BAT1-**	**BAT2-**

Note that when the EV-Charger's **DC+/-** ports are connected with the inverter's **BAT1+/-** ports, the **Discharge COM** should be connected with **BMS1**.

NOTICE!

- Refer to the user manual of the inverter for specific cable connection and function settings.

- DI signal input connection

  The series EV-Charger supports accepting external DI signal control to limit the output power, thus preventing grid overloads and fulfilling local regulations (for example, § 14a EnWG). It has two DI signal inputs to connect to the external control boxes' corresponding DO signal outputs. Once the external control box sends a control command after receiving the grid operator's remote control signal, the EV-Charger will automatically and efficiently limit the output power.

  External control box & EV-Charger connection diagram:

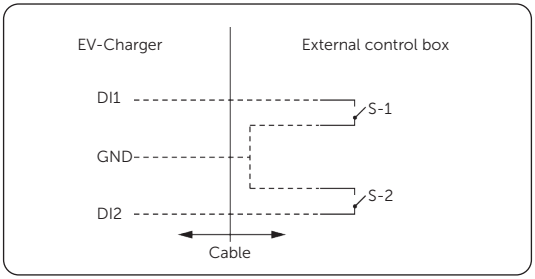


Figure 8-35 External control box & EV-Charger connection diagram

Control logic:

Table 8-4 Control logic

DI1	DI2	Operation
0	0	No limitation
1	0	Limit charging power to 4.2 kW
0	1	Reserved
1	1	Stop charging

This function is disabled by default. If you need to use this function, please set and confirm **Remote settings** > **Advanced setting** > **Safety** in the App. For details, please refer to "Advanced setting".

- Communication with Ethernet (LAN)

  Ethernet (LAN) connection is optional for areas where remote WiFi connection is not available or has a weak signal. You can choose to finish the Ethernet (LAN) connection as needed.

WARNING!

- The Ethernet cable used to connect the EV-Charger for communication must be protected from lightning strikes.

NOTICE!

- Please ensure that the communication cable is intact and correctly connected. Otherwise, some functions may not work properly. For example, if the communication with the inverter is lost, the EV-Charger cannot obtain information about surplus PV power, which will reduce the charging current in Green mode.

8.5 Cover Installation

Step 1: Align the waterproof plate with the EV-Charger and screw the original screws to fix the plate.

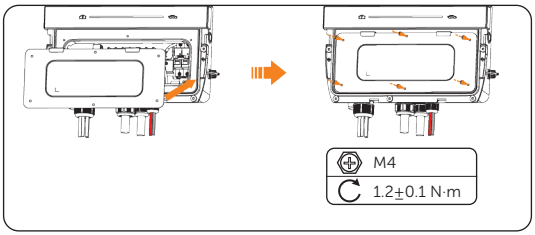


Figure 8-36 Fix the waterproof plate

Step 2: Align the lugs of the lower upper cover with the slots of the EV-Charger and press down to ensure steady installation.

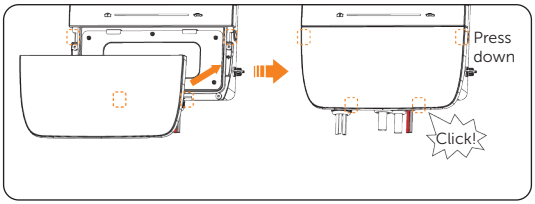


Figure 8-37 Install the cover

8.6 Black Start Connection

The series EV-Charger supports black start function. When power outage occurs in the household, it can be started by connecting with vehicle cigarette lighter or 12 V auxiliary outlet to supply auxiliary power source.

Required accessory

The connecting cable for black start is an optional accessory, purchase from SolaX if needed.

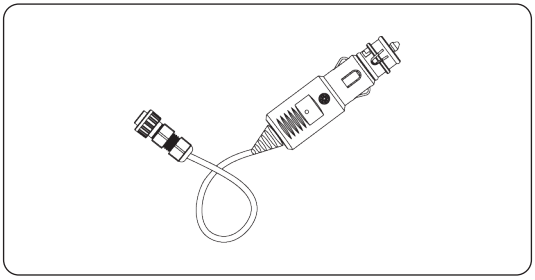


Figure 8-38 Connecting cable for black start

Connecting procedures

Step 1: Loosen the cap from the black start port.

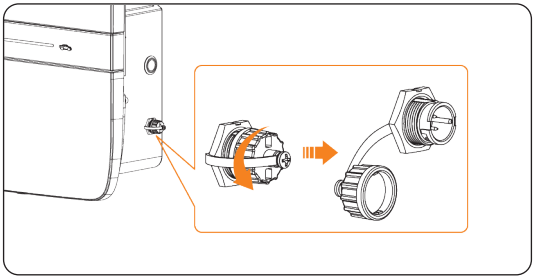


Figure 8-39 Loosen the cap

Step 2: Connect the connecting cable for black start to the black start port of the EV-Charger.

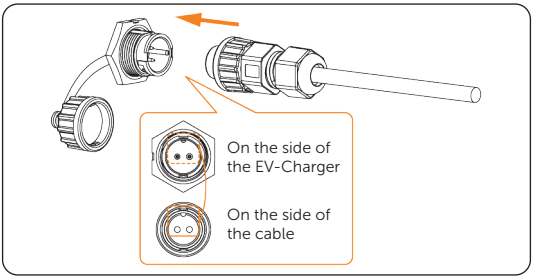


Figure 8-40 Connect the cable

Step 3: Tighten the fastening head of the connecting cable

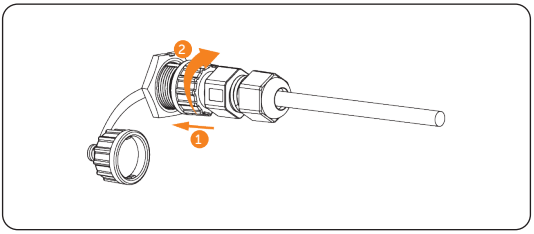


Figure 8-41 Tighten the fastening head.

NOTICE!

- Follow the manuals of the vehicle or the 12 V auxiliary outlet to complete the connection on the other side.
- When black start connection is not needed, keep the port cap tightened.

9 Power on

9.1 Checking before Powering on

Check all below steps before powering on the EV-Charger:

a. The EV-Charger is installed correctly and securely;

b. All AC input cable, DC cables and communication cables are connected correctly and securely;

c. Other devices in the system, such as inverter, meter/CT (if any), MBOX (if any), are installed and connected correctly and securely;

d. All the screws are tightened;

e. The voltage, frequency and other factors of the grid are in consistent with the working requirement of the EV-Charger.

9.2 Powering on

Step 1: Turn on the RCBO.

Step 2: Check the status of the LED indicator:

1. When the device is powered on, the buzzer will give a short sound, and A (home) side indicator will be solid (on-line) or flashing (off-line), B (vehicle) side indicator will be solid on (prepare) or flashing (available). The indicator light colour will be displayed as per work mode.
2. Then the system will start self-checking automatically. After the checking process, if there is any fault, the indicator light will be solid red (fault), please check if it is correctly installed and connected.
3. If it works normally, the indicator light will display according to the working state of the device.

⚠ WARNING!

- Power to the device must be turned on only after installation work has been completed.
- The device is intended only for charging electric vehicles. Do not charge other devices.

10 App Setting

10.1 Download, Registration and Login

SolaXCloud is an intelligent management platform for home energy, which integrates energy efficiency monitoring, device management, data security communication and other integrated capabilities. While managing your home energy device, it helps you optimize the efficiency of electricity consumption and improve the revenue of power generation.

10.1.1 Downloading and Installing App

Method 1: Scan the QR code below to download the App.

QR code can also be available on the login page of our official website (www.solaxcloud.com).



Figure 10-1 QR code

Method 2: Search for **SolaXCloud** in App Store or Google Play, and then download the App.

NOTICE!
• The screenshots hereupon are for reference only (mainly based on V7.5.0), and the actual interfaces may differ. You can update your App as needed.

10.1.2 App Registration and Login

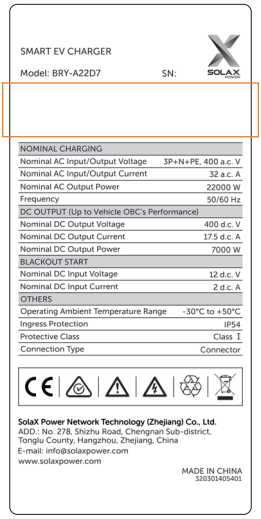
Step 1: Run the App and then touch **Don't have an account? Sign up** to create a new account in the App.

Step 2: Follow the instructions and fill in your user name, enter your password, phone number or registration Email address, and enter the verification code to create the account. Log in the App after registration finished.

Step 3: For the first login, complete the plant creation and Wi-Fi configuration as below.

a. Turn to the **Home** page and touch **Create** to create plant.

b. Allow SolaXCloud to access your system location, fill in plant name (self-defined), choose and complete the other settings according to actual situations, then add device by scanning or typing in the SN on the type label (as the Registration No.).


SMART EV CHARGER

Model: BRY-A22D7 SN:

NOMINAL CHARGING	
Nominal AC Input/Output Voltage	3P+N+PE, 400 a.c. V
Nominal AC Input/Output Current	32 a.c. A
Nominal AC Output Power	22000 W
Frequency	50/60 Hz
DC OUTPUT (Up to Vehicle OBC's Performance)	
Nominal DC Output Voltage	400 d.c. V
Nominal DC Output Current	17.5 d.c. A
Nominal DC Output Power	7000 W
BLACKOUT START	
Nominal DC Input Voltage	12 d.c. V
Nominal DC Input Current	2 d.c. A
OTHERS	
Operating Ambient Temperature Range	-30°C to +50°C
Ingress Protection	IP54
Protective Class	Class I
Connection Type	Connector

SolaX Power Network Technology (Zhejiang) Co., Ltd.
ADD.: No. 278, Shizhu Road, Chengnan Sub-district, Tonglu County, Hangzhou, Zhejiang, China
E-mail: info@solaxpower.com
www.solaxpower.com

MADE IN CHINA
52030140540 1

Figure 10-2 One example for SN

c. Enter your WiFi account and password. Start to configure the device network. DHCP is enabled by default to distribute IP address automatically. 5GHz network is not supported.

10.2 Configuration

NOTICE!

- If you already have the App account, you can proceed to the configuration after login.

10.2.1 Add Device

Step 1: Login your account, turn to the **Home** page or the **Device** page of the App and select the exact plant from the plant list on the upper left corner.

Step 2: Touch the ⊕ icon on the upper right corner of the **Device** page, then touch **Add Device** or **Scan**.

Step 3: Follow the instructions to add the EV-Charger and complete the device network configuration.

10.2.2 Wi-Fi Connection

The network configuration will be completed automatically by following the instructions when adding device. If you need to reconnect the network when the device is off-line, please operate as below.

Step 1: Login your account, turn to the **Device** page of the App and select the exact plant from the plant list on the upper left corner.

Step 2: Choose the exact EV-Charger card (off-line with icon) from the **Device** list according to the device type and SN, and touch any part of the card.

Step 3: Touch **Reconfigure** on the pop-up window.

Step 4: Type in or choose your home Wi-Fi Network and password, then touch **Next**.

* 5GHz Wi-Fi is unavailable for now.

Step 5: Follow the instructions to complete Wi-Fi setting, there will be a note when the setting successes.

NOTICE!

- If the Wi-Fi connection fails, you can connect to the Wi-Fi signal named after the device SN and visit the IP address http://192.168.10.10/ in a browser to configure Wi-Fi. (Account: "admin"; default password: the SN)
- If you connect to the network server through LAN, there is no need to set the Wi-Fi configuration, as it will be automatically configured.

10.2.3 Local Mode

When there is no network, you can access local mode to complete the settings.

Step 1: Use your smart phone to connect the SolaX Wi-Fi signal (Wifi_5**********).

Step 2: On the login page, you can touch **More** on the upper right corner and then choose **Local Access**.

If you've already logged into your account, access following the path: **Service** > **Application** > **Local Access**.

Step 3: Type in or scan the SN (as the Registration Number) to access the Local Mode in the App.

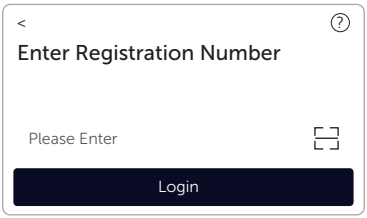


Figure 10-3 Login for local mode

11 Settings for EV-Charger

The function settings for EV-Charger can be done through the details page in the App.

11.1 Introduction of Details Page

Entry method

Step 1: Login your account, turn to the **Device** page of the App and select the exact plant from the plant list on the upper left corner.

Step 2: Choose the exact EV-Charger card from the **Device** list according to the device type and SN, and touch any part of the card.

Step 3: The **Details** page will be displayed. Scroll up and down to see more information.

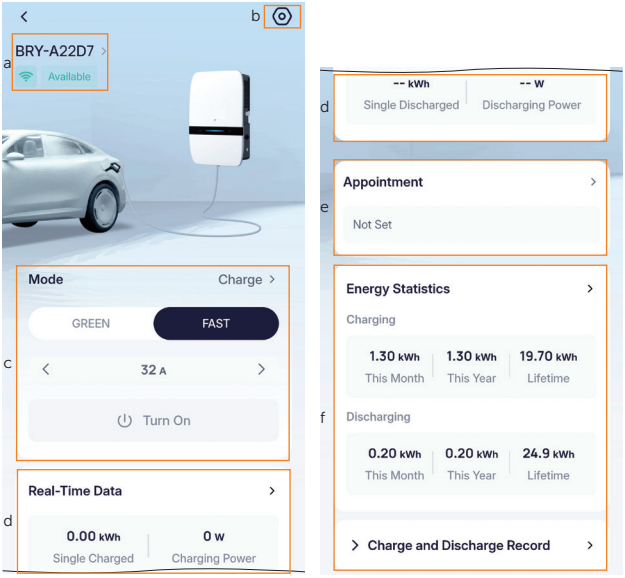


Figure 11-1 Details page

Page introduction

On this page, you can operate to check the basic information, real time information and the statistics of the EV-Charger as well as to set the work mode and do other functional settings.

- Part a displays the series name, Wi-Fi connection status and the state of the EV-Charger. Touch part a, you can enter next-level page and review the basic information about the device, which contains the device SN, Registration no. and version information etc. You can also edit the device name or remove the device as needed.
- Part b is the setting icon, entry for different setting pages.
- Part c is for mode selection and operation settings. For details, please refer to "12.3 Detailed Function Operation".
  - » In Solar Scene, you can select the work mode (Charge, Discharge and Automatic); switch between Green and Fast mode and set maximum charging current for charge mode as well as start or stop the charging/ discharging session.
  - » In OCPP Scene, this part will be hidden.
- Part d displays **Real-Time Data** information. Touch part d, you can review more detailed real time data of charging or discharging session. Note that the discharging power data might be slightly different on the EV-Charger side and the inverter side due to sampling errors.
- Part e is for **Appointment** settings, you can set desired charging and discharging time. The information of the setting that will come to effect most recently will be displayed here. For details, please refer to "12.3.10 Schedule Setting".
- Part f displays **Energy Statistics** and **Charge and Discharge Record**, you can see the energy statistics information based on your selection and check the charge and discharge records of selected date(s), which contain information of start time, duration, type, RFID card number and charging or discharging amount.

11.2 Introduction of the Setting Pages

Touch the setting icon on the upper right corner of the **Details** page to select and enter corresponding setting pages.

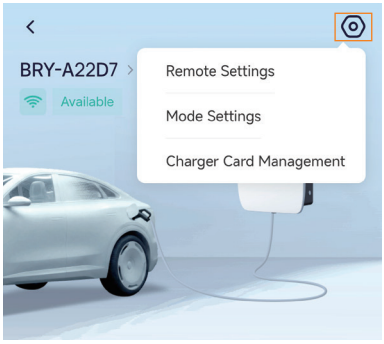


Figure 11-2 Touch to enter the setting pages

11.2.1 Remote Settings

The **Remote Setting**s page contains three parts: **Basic information**, **Charger setting**, **Advanced setting**. Touch on each item can enter to the next level.

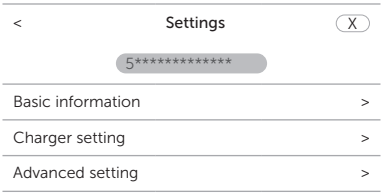


Figure 11-3 Settings page

Basic information

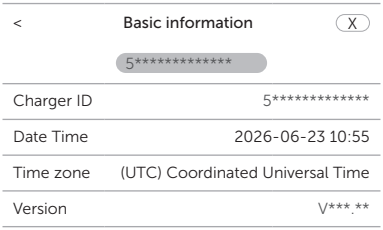


Figure 11-4 Basic information page

You can check the information of **Charger ID** and **Version** here.

Date Time will be automatically synchronized. If it is not correct, please adjust it by yourself.

Confirm the **Time zone** according to the application location. After logging in to the App, the **Time zone** will be automatically located. If it is not correct, please adjust it to the correct one.

Charger setting

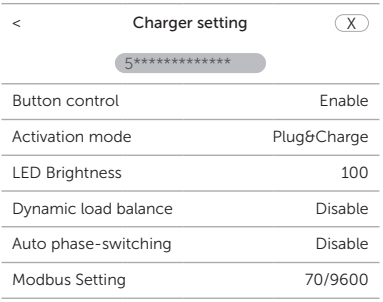


Figure 11-5 Charger setting page

For **Button control** & **Activation Mode**, please refer to "12.1 Activation Mode Setting".

With **LED Brightness**, you can set the brightness of the LED indicator. When **Close** is selected, the LED indicator will not light up. The higher the value set, the brighter it is.

For details about other settings on this page, refer to "12.3 Detailed Function Operation".

Advanced setting

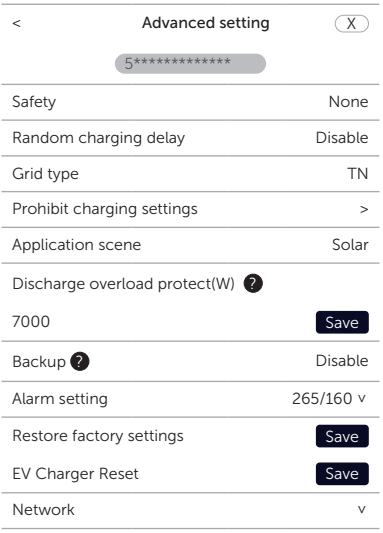


Figure 11-6 Advanced setting page

The default setting for **Safety** is **None**. You can set according to your needs (for example, you need to enable the DI signal input function), please select the correct item from the list and confirm the selection.



Figure 11-7 Setting for Safety

The default **Application scene** is **Solar**, you can set to **OCPP** scene as needed. For more details, please refer to "12.2 Application Scene Setting".

Discharge overload protect(W) sets the maximum discharging power for the discharging function of the EV-Charger. The default value is 7000. Setting range: 0–7000.

Backup is disabled by default. When enabled, the EV-Charger will automatically switch to discharge mode if power outage occurs. The charging connector should be plugged and the discharging process started by this function should be turned off in the App.

The **Alarm setting** contains **OverVoltage** and **LowVoltage**. Set and save these two limit values according to local regulations.



Figure 11-8 Alarm setting

The default settings can be restored by touch **Save** for **Restore factory settings**.

The EV-Charger can be reset (equivalent to power off and restart) when touch **Save** for **EV Charger Reset**.

The **Local Access** under **Network** will be automatically turned off one hour after successful network connection for the consideration of security. If you want to access the Wi-Fi signal named after the SN of the EV-Charger, enable this setting to turn on the signal.

For the detailed operation of other function settings, please refer to "12.3 Detailed Function Operation".

11.2.2 Mode Settings

You can set the parameters for different work modes here. The page display will differ for different modes.

NOTICE!

- This page is only for setting, you need to effect the settings after turn on the related work modes.

Mode select

The default mode is **Charge**. You can choose from **Charge**, **Discharge** and **Automatic** based on your needs.

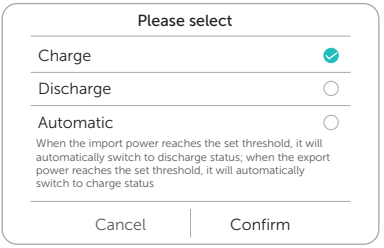


Figure 11-9 Mode select

Charge mode setting

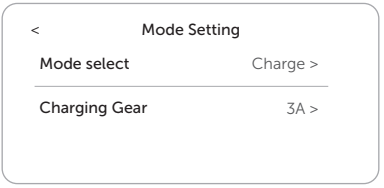


Figure 11-10 Charge mode setting page

After selecting the **Charge** mode, you can set the **Charging Gear** for it. It will take effect when **Green** charging mode is turned on.

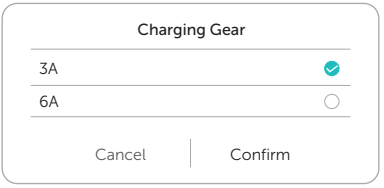


Figure 11-11 Charging Gear

Discharge mode setting

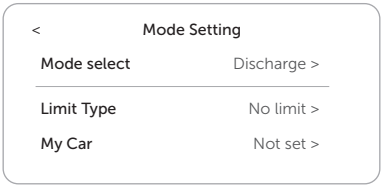


Figure 11-12 Discharge mode setting page

After selecting the **Discharge** mode, you can set the discharge limits and you car information.

- **Limit Type**
  - » **No Limit:** This is the default setting.
  - » **By Amount**: You can set the **Single Max Discharging Amount (kWh)** after selection, range: 0.0–500.0.
  - » **By Duration**: You can set the **Single Max Discharging Duration (m)** after selection, range: 0–5000.

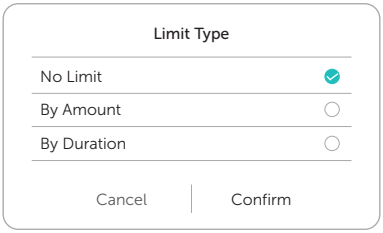


Figure 11-13 Limit type for discharge

- **My Car**

  After touch **My Car** item on the settings main page, you can proceed to add your car information on the newly appeared **My Car** page.

NOTICE!

- The car information should be correctly set to ensure the proper operating of the discharging function. At most 30 cars can be added.

  - » Add car
  - a. Touch **Add** (for the first time) or the ⊕ icon on the upper right corner of this page (for second and more cars).
  - b. Select your car **Brand**, enter your **Car Name** and set the value for **Max Discharging Power (W)** (range: 0–50000). If your car is not in the brand list, touch Not in the list > on the **Brand List** sub-page, and two more items

(**PP Resistance Value (Ω)** (range: 0-3300) and **Special Requirement for EV Discharge**) need to be set.

c. Touch **Save** at the bottom of the page, then it will display in **My Car** page.

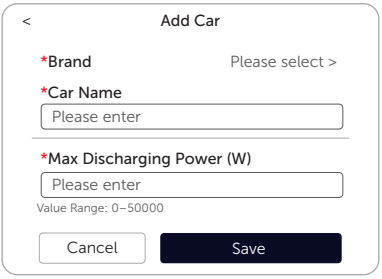


Figure 11-14 Add Car setting

d. If you have more than one cars on your list, select the car for discharging function. The first car added will be the default one.

» Delete car

If you need to delete a specific car from the list of **My Car** page, slide the specific car card to left and touch the ⊖ icon appeared beside it, then select **Confirm** in the prompt window to confirm.

Automatic mode setting

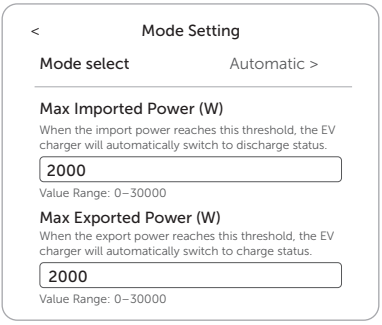


Figure 11-15 Automatic mode setting page

After selecting the **Automatic** mode, you can set the values for charge and discharge status switch.

- **Max Imported Power (W):** The EV-Charger will automatically switch to discharge status when the import power reaches this threshold. Default: 2000, setting range: 0–30000.
- **Max Exported Power (W):** The EV-Charger will automatically switch to charge

status when the export power reaches this threshold. Default: 2000, setting range: 0–30000.

11.2.3 Charger Card Management Settings

This setting page is for RFID management function. Except entering from the setting icon of **Details** page, it can also be accessed following the path: **Me** > **EVC Card** > **Charger Card Management** in the App.

Introduction of RFID Management Function

For most destination charging scenario, RFID is the mostly used activation method because of its convenience and safety. The RFID card management function is developed to help the charging station operator to manage the RFID card easily. This function can help the operator to do below things:

- Add new RFID card into the charging station system. This function is used for the operator to assign a new RFID card to a new user or an old user who has lost the original card.
- Delete RFID card. This function is used while some users lose their original card, the operator can delete the lost card from the system.
- Check charging and discharging history for each RFID card. This function can help the operator to know the total charging energy for each user and to bill the user.
- Support third party RFID card. This function can allow the operator to add third party RFID card into the system, the third party RFID must meet ISO 14443-A standard.
- Support NFC activation. This function can support the NFC function of smart phones to copy the RFID card number.

Only RFID cards listed on the management function can activate the EV-Charger.

For the number of RFID cards: There is no limit when the EV-Charger is online (connected to the network server) and a maximum of ten can be stored on the EV-Charger when off-line.

Operations of RFID Management Function

NOTICE!

- The operations should be done via the App, the App version must be V7.5.0 and above.
- In order to allow this function working normally, the **Activation mode** must be selected as **RFID** following the path: **Remote Settings** > **Charger setting** > **Activation mode** > **RFID**.

- Select card: The function is based on each plant, you need to choose one plant from the upper part of the function main page or the **Home** page. The RFID cards in the plant will be shown on the page. Scroll up and down to see more cards. You can find a certain card from the list or enter related information in the search box to select. The selected card will display on the top.
- Edit card: Touch **...** on the upper right corner of each card, then select **Edit** and confirm, you can edit a user name for each card in the App.
- Add card: Touch the ⊕ icon on the upper right corner of the function main page to enter **Add card** page. There are three methods to add the cards.
  - » Scan the barcode: This method is for the RFID cards with barcode from SolaX. Touch ⛶ to scan and add.
  - » Enter the card number: This method is for the cards with card number from SolaX. Enter the card number in **RFID** box and **Save** to add.
  - » Bind through EV charger: This method is for the SolaX cards without barcode and card number and other third party cards. Touch Bind through EV charger ⊙ and swipe the card on the card swiping position of the chosen EV-Charger.
- Delete card: Select and touch **...** on the upper right corner of the selected card, then select **Delete** and confirm to delete.

12 Operation Method

12.1 Activation Mode Setting

Introduction

The EV-Charger has the following activation modes: plug & charge, RFID card-swiping, and APP activation. Except RFID card-swiping mode, the work mode switching and start and stop of the charging and discharging session can be operated by the mode button at the same time.

- Plug & charge mode

  In this mode, the charging process begins immediately when the charging connector plugs in for the first time. For subsequent charging, you can either unplug and re-plug in the charging connector, or start the charging session through mode button or the App. If you want to switch to discharging mode, you need to switch through mode button or the App. You can start or stop the charging and discharging session through mode button or the App.

- APP activation mode

  In this mode, all charging and discharging related operations can be completed in the App. You can also complete the operations through mode button.

- RFID card-swiping mode

  In this mode, the mode button will be invalid. You can only start or stop the charging and discharging session by swiping the RFID card. Switch charging and discharging modes through the App.

Button control

The mode button is enabled by default. If you don't want to operate through the mode button, disable it. Once disabled, the mode button will be invalid in all activation modes. Setting path: **Remote Settings** > **Charger setting** > **Button control** > **Disable**.

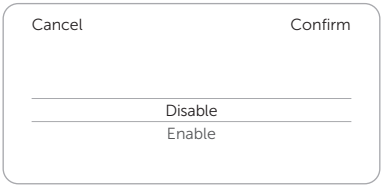


Figure 12-1 Button control setting

Activation mode

- Solar scene

In Solar scene, all activation modes are available and the default mode is plug & charge. If you want to switch to the RFID card-swiping mode or APP activation mode from the default mode, you need to select **RFID** or **APP** for **Activation mode** in the App following the path: **Remote Settings** > **Charger setting** > **Activation mode** > **RFID/APP**.

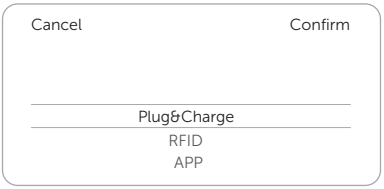


Figure 12-2 Select activation mode

- OCPP scene

In OCPP scene, please refer to the operation guide of the OCPP server.

NOTICE!

- The RFID card (part L) from the accessory bag will be invalid in OCPP scene.

NOTICE!

- Before charging and discharging, please check whether the EV-Charger and the charging connector are in normal state.
- During the charging and discharging process, do not unplug the charging connector directly, STOP charging first.
- After charging and discharging stopped, disconnect the charging connector from the electric vehicle first.

12.2 Application Scene Setting

The default **Application scene** is **Solar**. If you want to use the OCPP scene, select following the path: **Remote Settings** > **Advanced setting** > **Application scene** > **OCPP**.

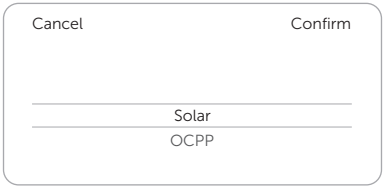


Figure 12-3 Select Application scene

Solar scene

In Solar scene, the EV-Charger can work with SolaX photovoltaic energy storage system to make more efficient use of the photovoltaic energy. Through communicating with the inverter, the EV-Charger can obtain the current information of the grid and PV and realize the smart control of work modes.

OCPP scene

In OCPP scene, the EV-Charger can be connected with the OCPP server and be managed and controlled through the App or web of the corresponding OCPP server. Before choosing this scene, please ensure that the EV-Charger has met the following prerequisites:

- The EV-Charger has joined the network that can access the Internet through network connection.
- A valid "URL" address has been obtained from the OCPP server.

  A valid "URL" address usually starts with "ws://" or "wss://". For example, ws://******.com:8080/ChargeCentralSystem/CP******* or wss://******.com/ChargeCentralSystem/CP******.

  For more details, please consult with the seller or the OCPP server.
- A valid charger ID has been obtained from the OCPP server.
- The network is normal and the OCPP server can be connected.

NOTICE!

- Only with a valid address and a valid charger ID obtained from the OCPP server, can the EV-Charger be connected to the OCPP server through the Internet and access the various functions provided by the server.

After **OCPP** scene is selected, related setting items will be displayed.

OCPP Server: Touch and select the corresponding server URL, the system will automatically update the address. You can also choose **Customize** to type in the full address obtained from the OCPP server.

Charger ID: Type in the charger ID obtained from the OCPP server.

Complete above two settings and touch **Save**. A **Setting successful** notice will appear when saved successfully.

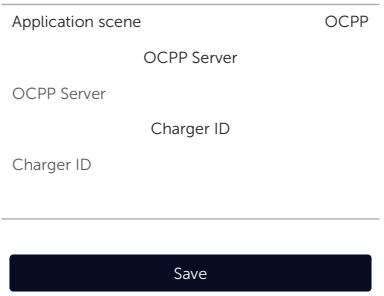


Figure 12-4 OCPP scene setting

12.3 Detailed Function Operation

12.3.1 Work Mode Operation

You can switch the work modes based on your needs in the App or through the mode button (when enabled).

Touch **Mode** to select **Charge**, **Discharge** and **Automatic** on the **Details** page of the App. The previous work mode will be stopped upon switching and the new session needs to be started by touch **Turn On**.

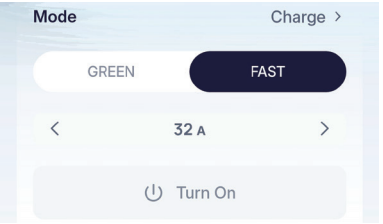


Figure 12-5 Mode selection

NOTICE!
• Whether the settings related to discharging function take effect is subject to the vehicle.

12.3.2 Charging modes in Solar Scene

When **Solar** scene is selected, two charging modes (Green & Fast) are available.

The default charging mode is **Fast** mode, and you can switch charging modes by touching corresponding area of the mode selection and operation part on the **Details** page of the App.

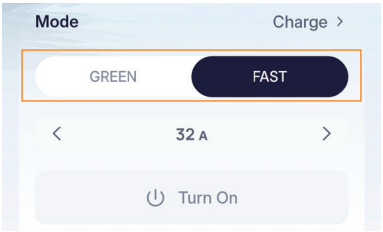


Figure 12-6 Charging modes switching

Green mode

In Green mode, the EV-Charger will maximize the use of surplus power generated from the inverter. The EV-Charger should be connected with the inverter to obtain the power information, so as to control the charging power in real time. According to the minimum start-up charging power, the charging current can be divided into two levels as 3 A and 6 A. The default level is 3 A.

In the 6 A level, the EV-Charger won't use the power generated from grid at all.

In the 3 A level, the EV-Charger would start charging only when surplus photovoltaic power supply is more than 3 A. Meanwhile, if the surplus photovoltaic power supply is less than 6 A, the EV-Charger needs to buy extra electricity from grid for minimum start-up charging power (4.2 kW when auto-phase switching is disabled and 1.4 kW when enabled).

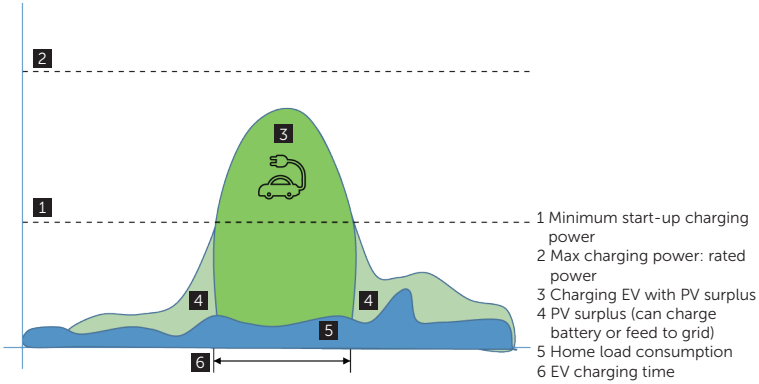


Figure 12-7 Green mode

You can set the charging current level for Green mode in the App following the path: **Mode Settings** > **Charging Gear**.

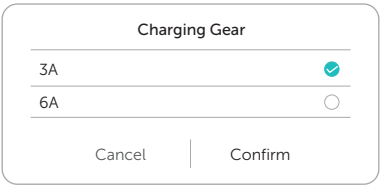


Figure 12-8 Charging current level for Green mode

NOTICE!

When the EV-Charger is charging in Green mode:

- The charging electric vehicle must comply with the IEC61851 standard, otherwise the EV-Charger won't work.
- If there is a zero injection requirement for the system, the EV-Charger must communicate with the inverter in order to charge normally.

Fast mode

In Fast mode, the EV-Charger will charge the EV at the rated output power regardless of whether the surplus photovoltaic power is sufficient. The actual charging power depends on the SOC of the battery pack of the EV.

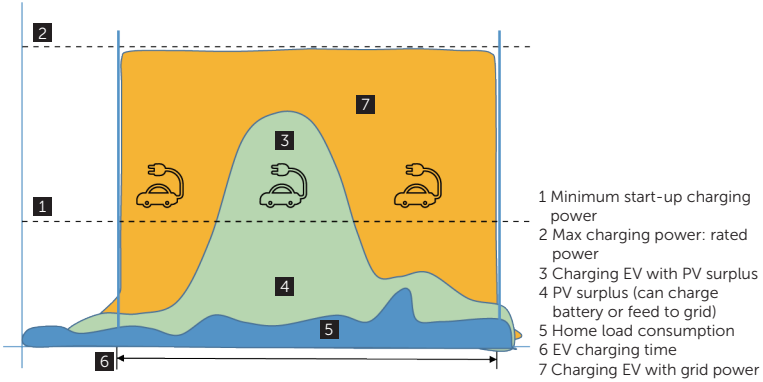


Figure 12-9 Fast mode

12.3.3 Dynamic Load Balance

The EV-Charger has dynamic load balancing function. During the charging period, no matter in which charging mode, the total power of the house will not exceed the main grid capacity. To ensure that the total power of the house doesn't exceed the grid capacity, the charging power will be adjusted in real time according to the total load power.

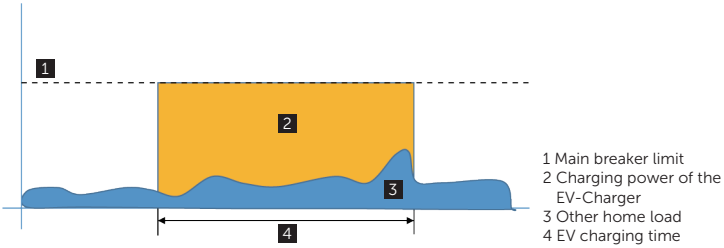


Figure 12-10 Dynamic load balance

If you want to use this function, touch **Dynamic load balance** following the path: **Remote Settings** > **Charger setting** > **Dynamic load balance**, enable and set the value for it, then confirm the settings.

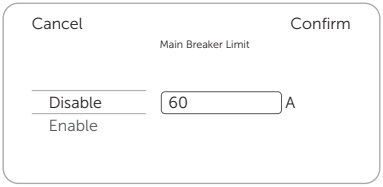


Figure 12-11 Dynamic load balance setting

With the dynamic load balance function, when the power consumption approaches the preset maximum value, the EV-Charger will reduce the charging power so that the main breaker current will reduce to the preset value minus 5 A, thus avoiding the situation of main breaker trip due to overload.

NOTICE!

- The EV-Charger should be connected with a compatible inverter to obtain the grid data for the dynamic load balance function to work normally. Otherwise, the function won't take effect.

NOTICE!

- With the dynamic load balance function enabled, when the EV-Charger reduces the charging power or suspends charging, a **Grid Limit** message will appear under the state of the EV-Charger on the **Details** page.

12.3.4 Auto Phase-Switching

This function only takes effect in Green mode. When the surplus PV power is not sufficient for the minimum start-up charging power for three-phase charging but is sufficient for the minimum start-up charging power for single-phase charging, the EV-Charger can switch to single-phase mode charging automatically to make full use of the PV power if this function is enabled. This function is disabled by default (Switching to single-phase mode is not allowed). You can select **Enable** (Allow conversion to single-phase mode) to allow conversion to single-phase mode following the path: **Remote Settings** > **Charger setting** > **Auto phase-switching**.

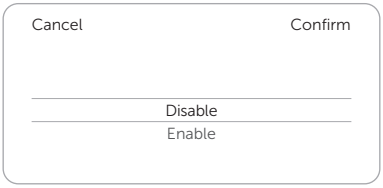


Figure 12-12 Auto phase-switching setting

12.3.5 Modbus Setting

Modbus setting should be done according to the actual application, setting path: **Remote Settings** > **Charger setting** > **Modbus Setting**.

ModBus485 Address: The default value is 70. The addresses of different EV-Chargers in the same one system should be different.

ModBus485 Baud Rate: The default value is 9600. The baud rate should be set according to the devices with which the EV-Charger is working.

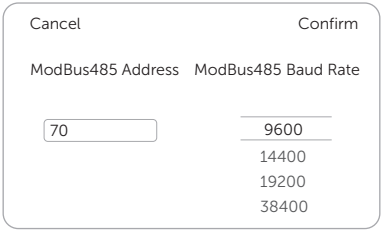


Figure 12-13 Modbus setting

12.3.6 Random Charging Delay

The start charging time for the vehicle can be delayed randomly with the random charging delay function. If choose to enable it, input the charging delay time (s) within a range of 600–1800 s. This function is disabled by default. If needed, you can enable it following the path: **Remote Settings** > **Advanced setting** > **Random charging delay**.

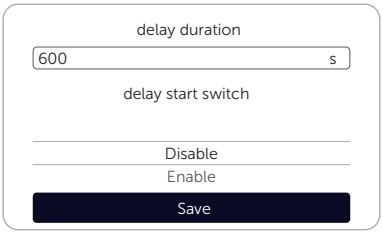


Figure 12-14 Random charging delay setting

12.3.7 Grid Type Setting

The EV-Chargers support different grid systems, the grid type should be set correctly according to the actual situation. You can set and check following the path: **Remote Settings** > **Advanced setting** > **Grid type**, the default setting is **TN**.

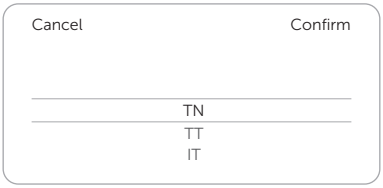


Figure 12-15 Grid type setting

12.3.8 Prohibit Charging Settings

At most six time periods can be set here, and for each period you can set its repeat times. At these preset time periods, the EV-Charger will not be available for charging (**ban**).

a. Touch **Prohibit charging settings** following the path: **Remote Settings** > **Advanced setting** > **Prohibit charging settings**.

b. After entering the **Prohibit charging settings** page, the existed list will appear. You can choose certain time period(s) and turn on or off the switch as shown.

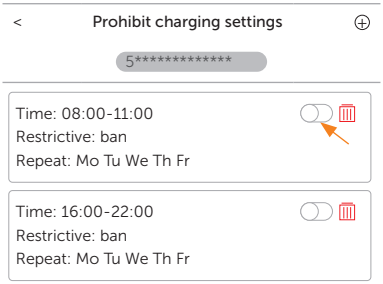


Figure 12-16 Prohibit charging settings list

c. If you want to add a new period, touch the ⊕ icon on the upper right corner and complete relative settings.

1) Enable or disable the **Restrictive Activation** for a certain period.

2) The **Restrictive Type** is **ban** by default which means charging is not allowed at this period.

3) Set the repeat frequency by ticking the days (Multiple choices are possible).

4) Set the **Start time** and **End time** of the period.

5) Touch **Save** to confirm the settings.

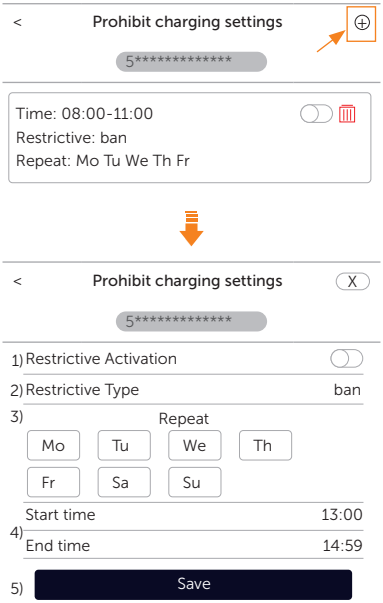


Figure 12-17 Setting a new Prohibit charging settings period

d. If you want to revise the settings for a certain period, touch the content box of the period and then update the setting items.

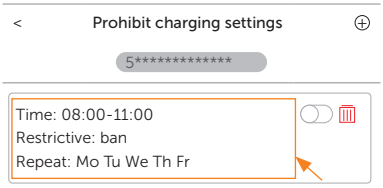


Figure 12-18 Touch to revise

e. If you want to delete a certain period, touch the delete icon and select **Confirm** in the pop-up window to confirm.

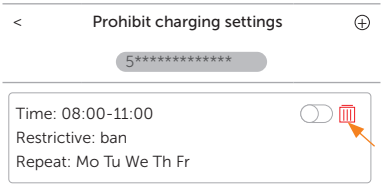


Figure 12-19 Touch to delete

12.3.9 Maximum Charging Current

You can set the maximum charging current for the EV-Charger based on actual need.

a. Touch the part as shown in the mode selection and operation of the **Details** page.

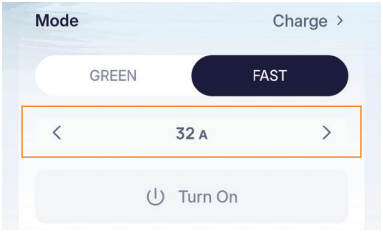


Figure 12-20 Touch for maximum charging current setting

b. Then adjust the value for maximum charging current in the pop-up window. The setting range is 6 A to 32 A.

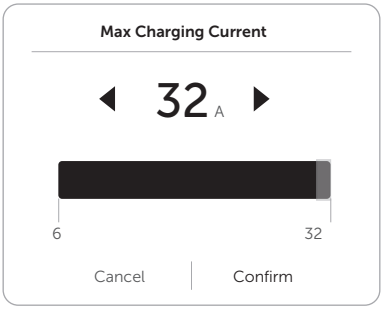


Figure 12-21 Setting maximum charging current

12.3.10 Schedule Setting

NOTICE!

- When the schedule setting function is enabled, the plug & charge activation mode will be invalid immediately. If you want to charge the EV immediately on the spot, the **Activation mode** must be selected as **APP/RFID** to start operation following the path: **Remote Settings** > **Charger setting** > **Activation mode** > **APP/RFID**.
- Make sure the charging connector of the EV-Charger is connected with the vehicle for the schedule settings to take effect.

In Solar scene, you can set schedule charging or discharging at some specific time period as scheduled according to the electricity price of different periods or their household load to save the electricity cost. At most four periods (including charging and discharging settings) can be set here. This function could be set via the **Details** page.

a. Touch **Appointment** on the **Details** page.

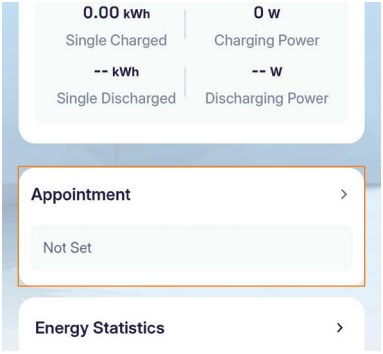


Figure 12-22 Touch Appointment

b. Touch **Add** (for the first time) or the ⊕ icon on the upper right corner (to set more periods) on the **Appointment** page.

c. Touch each item to set the desired value and confirm.

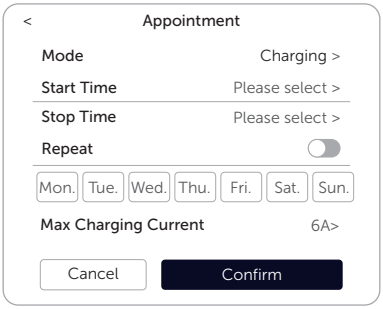


Figure 12-23 Set the items and confirm

» **Mode**: Select charging/discharging.

» **Start Time**: Time to start charging/discharging.

» **Stop Time**: Time to stop charging/discharging, can be set to a time of the next day.

» **Repeat**: Set the effective frequency and execute date. By default, the period setting would take effect only once. Please select execute dates from Monday to Sunday (multiple choices are allowed).
If it is kept disabled by default, the period setting will automatically become invalid after all selected dates have been executed once.
If you want to repeat several times, please enable it and the period setting will take effect on the selected dates every week.

» **Max Charging Current** (only for charging mode): The maximum charging current of the scheduled charging period. The range is 6 A to 32 A.

d. After the addition is completed, it will be displayed on the list. Touch the switch as shown to enable the setting.

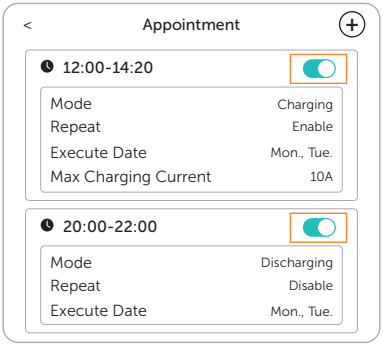


Figure 12-24 Enable the schedule period

e. If you want to revise the settings for a certain period, touch the lower part of the content box of the period and then edit the setting items.

f. If you want to delete a certain period, slide it to the left, then touch ⛔ icon appeared beside the content box and select **Confirm** in the prompt window to confirm.

NOTICE!

- For the charging current, the value set for dynamic load balance has a higher priority.
- During the schedule charging/discharging period, the charging/discharging process can be stopped by the App.

13 Troubleshooting and Maintenance

13.1 Power off

Step 1: Turn off the RCBO.

Step 2: Disconnect the device from the inverter (and the MBOX).

WARNING!

- Make sure to disconnect the device from the inverter (and the MBOX), to prevent it from outputting DC current when the inverter starts operating, which may cause electric shocks.
- After the EV-Charger is powered off, there may still be the residual electricity and heat which may cause electric shocks and body burns. Please wear personal protective equipment (PPE) and start maintaining the EV-Charger at least five minutes after power off.

13.2 Troubleshooting

This section lists the possible problems with the EV-Charger, and provides information and procedures for identifying and resolving them. In case of any errors, check for the warnings or error messages in the App, and refer to the suggestions below. For further assistance, contact SolaX Customer Service. Please provide the model and SN of the EV-Charger, and be prepared to describe the system installation details.

Table 13-1 Troubleshooting list

Fault	Suggested solutions
Overcurrent fault	• Wait for a while to check if it is back to normal. If yes, re-plug in and try charging the EV again. • Contact SolaX for help.
Temperature beyond limit	• Wait for a while to check if it is back to normal. If yes, re-plug in and try charging the EV again. • If not, confirm that the conditions for installation are proper and waiting for cooling down, then re-plug in and try charging the EV again. • Contact SolaX for help.
PE grounding abnormal	• Confirm that the EV-Charger is reliably grounded. • Wait for a while to check if it is back to normal. If yes, re-plug in and try charging the EV again. • Contact SolaX for help.

Fault	Suggested solutions
6 mA leakage current fault	• Unplug the charging connector from the EV and check whether the EV is leaking. • Contact SolaX for help.
PE leakage current fault	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try charging the EV again. • Contact SolaX for help.
Over power abnormal	• Wait for a while to check if it is back to normal. If yes, re-plug in and try charging the EV again. • Contact SolaX for help.
L1 phase overvoltage abnormal	• Wait for a while to check if it is back to normal. If yes, re-plug in and try charging the EV again. • If not, check whether the grid voltage is too high, then try charging the EV again. • Contact SolaX for help.
L1 phase undervoltage abnormal	• Wait for a while to check if it is back to normal. If yes, re-plug in and try charging the EV again. • If not, check whether the grid voltage is too low, then try charging the EV again. • Contact SolaX for help.
L2 phase overvoltage abnormal	• Wait for a while to check if it is back to normal. If yes, re-plug in and try charging the EV again. • If not, check whether the grid voltage is too high, then try charging the EV again. • Contact SolaX for help.
L2 phase undervoltage abnormal	• Wait for a while to check if it is back to normal. If yes, re-plug in and try charging the EV again. • If not, check whether the grid voltage is too low, then try charging the EV again. • Contact SolaX for help.
L3 phase overvoltage abnormal	• Wait for a while to check if it is back to normal. If yes, re-plug in and try charging the EV again. • If not, check whether the grid voltage is too high, then try charging the EV again. • Contact SolaX for help.
L3 phase undervoltage abnormal	• Wait for a while to check if it is back to normal. If yes, re-plug in and try charging the EV again. • If not, check whether the grid voltage is too low, then try charging the EV again. • Contact SolaX for help.

Fault	Suggested solutions
Metering chip communication abnormal	• Unplug the charging connector from the EV, power off and re-power the EV-Charger or save **EV Charger Reset** in the App. • Contact SolaX for help.
RS485 communication abnormal	• Check and confirm that the communication cable for RS485 is intact and correctly connected. • Contact SolaX for help.
Power selection fault	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try charging the EV again. • Contact SolaX for help.
CP voltage abnormal	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try charging the EV again. • Contact SolaX for help.
Meter type abnormal	• Change and install a meter as recommended. • Contact SolaX for help.
EV-Charger tampered fault	• Check whether the upper cover has been removed. • Contact SolaX for help.
PEN relay fault	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try charging the EV again. • If not, power off and re-power the EV-Charger or save **EV Charger Reset** in the App. • Contact SolaX for help.
First relay welding detection fault	• Unplug the charging connector from the EV, power off and re-power the EV-Charger or save **EV Charger Reset** in the App, then re-plug in and try charging if it is back to normal. • Contact SolaX for help.
First relay malfunction fault	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try charging the EV again. • Contact SolaX for help.
Second relay welding detection fault	• Unplug the charging connector from the EV, power off and re-power the EV-Charger or save **EV Charger Reset** in the App, then re-plug in and try charging if it is back to normal. • Contact SolaX for help.

Fault	Suggested solutions
Second relay malfunction fault	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try charging the EV again. • Contact SolaX for help.
Discharge vehicle output abnormal	• Check if the discharge function of the EV is properly set. • Check if the information of the EV is correctly added in the App. • Contact SolaX for help.
Discharge over power abnormal	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.
Discharge overvoltage1 fault	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.
Discharge insulation fault	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.
Discharging voltage abnormal	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.
Discharge chip communication abnormal	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.
Discharge module abnormal	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.
Discharge overvoltage2 abnormal	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.
Matebox communication fault	• Check whether the communication cables between the EV-Charger and the MBOX are properly connected. • Contact SolaX for help.
Inverter communication abnormal	• Check whether the communication cables between the EV-Charger and the inverter are properly connected. • Contact SolaX for help.
Discharge module communication abnormal	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.

Fault	Suggested solutions
Discharge module poweroff abnormal	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.
Lightning protection abnormal	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.
Fan abnormal	• Unplug the charging connector from the EV, if it is back to normal, re-plug in and try discharging again. • Contact SolaX for help.

13.3 Maintenance

Regular maintenance is required for the device. Please check and maintain the following items based on the instructions below to ensure the optimal performance of the device. For devices working in inferior conditions, more frequent maintenance is required. Please keep maintenance records.

WARNING!

- Cut off all power supply before maintenance, or there may be a risk of electric shock!
- Only qualified person can perform the maintenance for the EV-Charger.
- Only spare parts and accessories authorized by SolaX can be used.

13.3.1 Maintenance Routines

Table 13-2 Proposal of Maintenance

Item	Check Notes	Maintenance Interval
Safety check	• Check whether the device is functioning properly. • The safety checks shall be performed by manufacturer's qualified person who has adequate training, knowledge, and practical experience.	Every 12 months
Fan	• Check whether the fan makes noise or is covered by dust. • Clean the fan and the dustproof sponges regularly, or replace them if necessary.	Every 12 months
Mode button	Press and release the button for three consecutive times to check whether it works normally.	Every 6 months
LED indicator	Check whether the indicator is in normal state.	Every 6 months

Item	Check Notes	Maintenance Interval
Wiring connections	• Check whether the cables are securely connected. • Check whether the cables are damaged or aged. • Check whether the terminals and ports are intact. • Check whether the charging connector is in good condition.	Every 6 months
Grounding reliability	Check whether the ground terminal and ground wire are securely connected.	Every 12 months
Housing	Clean and check its security.	Every 6 months

NOTICE!

- When your EV-Charger needs to be upgraded by the service personnel, please make sure to unplug the charging connector from the EV.

13.3.2 Maintenance of Dustproof Sponge inside Shutters

The dustproof sponges inside the shutters need to be cleaned regularly, once a year is recommended. In case of inferior conditions, clean more frequently as needed.

Step 1: Cut off all power supply.

Step 2: Remove the screws that fix the shutters on both sides of the EV-Charger.

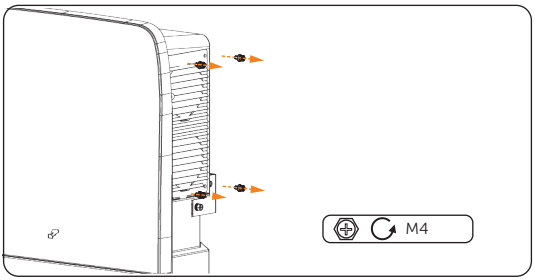


Figure 13-1 Remove the screws

Step 3: Tilt the shutter boards inward,then pull them outward.

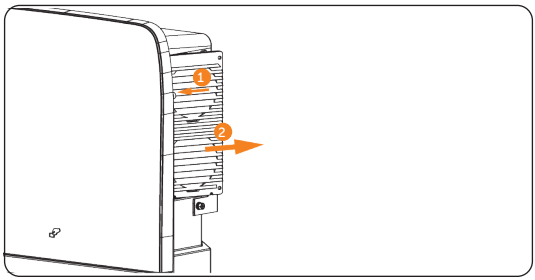


Figure 13-2 Take down the boards

Step 4: Take out the dustproof sponges, blow and clean the dust. (If replacement of new ones is needed, please contact and purchase the accessories from SolaX.)

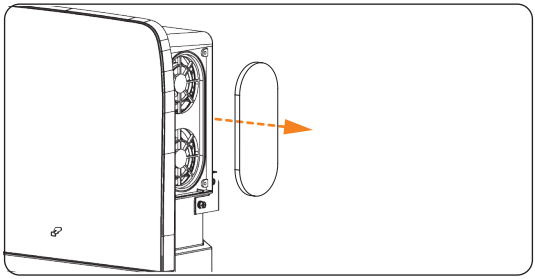


Figure 13-3 Take out the dustproof sponges

Step 5: Put back the dustproof sponges back in after the cleaning, and use the original screws to secure the shutters (torque: 1.2±0.1 N·m).

14 Decommissioning

14.1 Disassembling the EV-Charger

WARNING!

- When disassembling the EV-Charger, strictly follow the steps as below.
- Use insulated tools and wear individual protective tools when disassembling the EV-Charger.

Step 1: Turn off the RCBO to disconnect the EV-Charger from the grid.

Step 2: Disconnect the device from the inverter and the MBOX (if any). Make sure the power cable and communication cable connection are completely disconnected.

Step 3: Wait for at least 5 minutes to fully discharge the capacitors inside the EV-Charger.

Step 4: Remove the lower upper cover and the waterproof plate.

Step 5: Remove the screws on AC and DC terminal blocks, loosen the swivel nuts of the AC input terminal and DC output terminal, then pull out the AC input cable and DC output cables from the EV-Charger.

Step 6: Disconnect the communication cables from the communication ports, loosen the swivel nut of the communication terminal and pull out the communication cables from the EV-Charger.

Step 7: Re-tighten the terminals.

Step 8: Reinstall the waterproof plate and the lower upper cover.

Step 9: If you have installed an anti-theft lock, unlock it.

Step 10: Remove the M5 outer hexagonal screws on both sides of the EV-Charger and vertically lift up the EV-Charger to dismantle the EV-Charger.

Step 11: Unscrew the screws for fastening the bracket and remove the bracket if needed.

Step 12: Unscrew the screws for fastening the holster and cable hook and remove them if needed.

14.2 Packing the EV-Charger

- Use the original packaging materials if available.

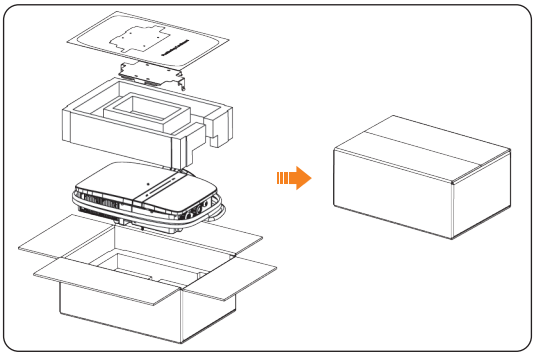


Figure 14-1 Packing the EV-Charger

- If the original packing material is not available, use the packing material which meets the following requirements:
  - » Suitable for the weight and dimension of product
  - » Convenient for transportation
  - » Can be sealed with adhesive tape

14.3 Disposing of the EV-Charger

Properly dispose of the EV-Charger and accessories in accordance with local regulations on the disposal of electronic waste.

15 Technical Data

Models		BRY-A22D7 / BRY-A22D7-G / BRY-A22D7-N / BRY-A22D7-GN
AC nominal input	Voltage	1Ph 230 a.c. V / 3Ph 400 a.c. V
	Frequency	50/60 Hz
	Grounding type	TN, TT, IT[1]
AC nominal output	Voltage	1Ph 230 a.c. V / 3Ph 400 a.c. V
	Current	6–32 a.c. A
	Power	1.4–22 kW[2]
DC nominal output[3]	Voltage	400 d.c. V
	Current	17.5 d.c. A
	Power	7 kW[2] @ Voltage > 350 Vdc
Interface & communication	Communication interface	WiFi / Ethernet / CAN / DI / RS485
	Protocol	OCPP 1.6j, Modbus TCP / RTU, Cloud API
	Communication	IEC 61851-1
	Authentication	Plug & Charge / RFID (ISO-14443-A) / APP / Button
	HMI	RGB LED / APP / Button
	Remote control	APP & Web
	Application	Residential
General data	Housing material	PC
	Installation method	Wall / Pedestal (optional)
	Charging outlet	Type2 plug (IEC 62196)
	Cable length	6.5 m
	Discharge efficiency	≥95.3% (400 d.c. V, 50% load) ≥94.3% (400 d.c. V, 50% load above)
	Noise	Charging: Noiseless Discharging: ≤ 54 dB (A) @ 1 m / 25°C
	Operating temperature	-30 to 50°C (discharging derating above 43°C)
	Storage temperature	-40 to 70°C
	Operation humidity	5%–95% RH (non-condensing)
	Max. operation altitude	2000 m
	Degree of protection	IP54 / IK10
	Cooling method	Smart air cooling
	Application site	Indoor/Outdoor
	Weight	16.5 kg
	Dimension (W×H×D)	376×562×128 mm

Models		BRY-A22D7 / BRY-A22D7-G / BRY-A22D7-N / BRY-A22D7-GN
Protection	Multiple protection	Over/Under voltage protection, Overload protection, Shortcircuit protection,Current leakage protection, Grounding protection, Surge protection, Overtemperature protection, ISO Insulation verification on DC output cable (optional)[4]
	Theft protection	Support theft protection with a padlock
	Integral current leakage protection	Integrated current failure monitoring (30 mA AC & 6 mA DC)[5]
	Relay protection	Relay weld detection
	Built-in PEN fault technology	According to BS 7671:2018 requirements[6]
	Standards	IEC 61851-1:2017, IEC 62196-2:2016

[1] IT 1Ph 230 a.c. V.
[2] The actual charging and discharging power depends on the EV-side.
[3] The DC output of the EV-Charger needs to be connected to a compatible inverter.
[4] MBOX is required for scenarios where the distance between the EV-Charger and the inverter exceeds 20 meters.
[5] This document does not replace any regional, state, provincial or national laws, regulations or standards that apply to the installation, electrical safety and use of the product. Always observe the local regulations as well.
[6] Only for models named with "N".

SIMPLIFIED EU DECLARATION OF CONFORMITY

The simplified EU declaration of conformity referred to in Article 10(9) shall be provided as follows. Hereby, [SolaX Power Network Technology (Zhejiang) Co., Ltd.] declares that the radio equipment type [Binary Series] is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: www.solaxpower.com.

CE Statement

SolaX Power Network Technology (Zhejiang) Co., Ltd. declares that this Binary Series is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. In accordance with Article 10(2) and Article 10(10), this product allowed to be used in all EU member states.

Safe distance warning

Use the Binary Series in the environment with the temperature between -30°C and 50°C. The device complies with RF specifications when the device used at 20 cm from your body.

Operation Frequency:

WIFI: 2.4G

Frequency: 2412MHZ–2472MHz

Output Power: 802.11 b/g/n20/n40: 17.90dBm(Max. e.i.r,p)

Bluetooth: BR/EDR

Frequency: 2402MHZ–2480MHz

Output Power: 5.06dBm(Max. e.i.r,p)

Bluetooth: BLE

Frequency: 2402MHZ–2480MHz

Output Power: 6.70dBm(Max. e.i.r,p)

RFID: NFC

Frequency: 13.56MHz



Importer:

Authorised Representative (UK)

Name: SOLAX POWER UK LIMITED

Add: Unit C-D Riversdale House, Riversdale Road, Atherstone, CV9 1FA

E-mail: service.uk@solaxpower.com

Tel: +44 (0) 2476 586 998

Authorised Representative (AUS)

Name: SolaX Power AUS Pty Ltd

Add: 21 Nicholas Dr, Dandenong South VIC 3175

E-mail: service@solaxpower.com.au

Tel: +61 1300 476 529

Authorised Representative (EU)

Name: SolaX Power NL Company B.V.

Add: Europalaan 202,7559 SC Hengelo

E-mail: service.eu@solaxpower.com

Tel: +31 (0)85 2737 932

SolaX Power Network Technology (Zhejiang) Co., Ltd.

Add.: No. 278, Shizhu Road, Chengnan Sub-district, Tonglu County,
Hangzhou, Zhejiang, China
E-mail: info@solaxpower.com

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