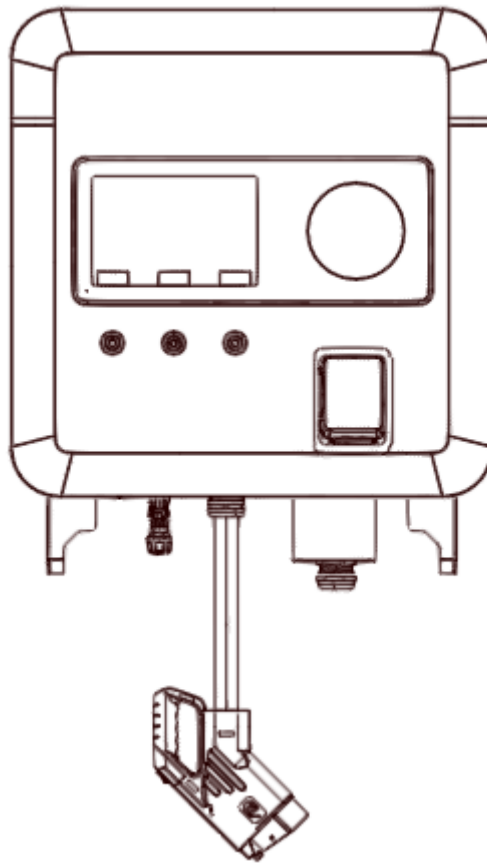


# EVI EV

## EVI EV DC 30KW

User Manual



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Version 1.0A

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## **Introduction**

EVI EV DC chargers offer convenience and efficiency to both customers and service providers. These charging stations feature simple installation and management. DC chargers are easy additions to any location and are highly requested by EV users. They are excellently suited to residential, retail and commercial parking lots, workplaces, restaurants, multi-unit dwellings, and anywhere else looking to provide a smooth, convenient charging experience. They are certified by international safety and other regulations the design is both waterproof and dustproof. It can be installed without environmental concerns.

## **User Experience**





The EVI EV charger is easy to use. It features a simple design to make charging a good experience. it can be configured to the plug-and-charge mode, thus your car can be charged after it is connected to the charger.

## **1. About this document**

### **1.1 Important Safety Instructions**

Save these instructions - this document contains instructions and warnings that must be followed when installing and using the Electric Vehicle Supply Equipment (EVSE). Before installing or using the EVSE, read this entire document as well as WARNING and CAUTION markings in this document.

## 1.2 Safety Instructions

Symbol	Risk type
	<b>RISK OF PERSONAL INJURY</b>
	<b>RISK OF ELECTRIC SHOCK</b>
	<b>RISK OF FIRE</b>
	<b>RISK OF DAMAGE TO THE EQUIPMENT</b>

- The charger must only be installed by licensed electricians
- Make sure that the materials used and the installation procedures adhere to local building codes and safety standards.
- The information provided in this manual in no way exempts the user of responsibility to follow all applicable codes or safety standards.
- This document provides instructions for the charger and should not be used for any other product. Before installation or use of this product, review this manual carefully and consult with a licensed contractor, licensed electrician, or trained installation expert to make sure of compliance with local building codes and safety standards.

## 1.3 Repair and Maintenance Clause

- Only licensed electricians can repair or maintain the charger. It is forbidden for general users to repair or maintain it.
- Turn off input power before repair or maintenance of the charger.

	<b>WARNING: RISK OF ELECTRIC SHOCK</b> When using electric products, basic precautions should always be
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taken, This manual contains important instructions that shall be followed during installation, operation and maintenance of the unit.

- Read all instructions before using this product
- Children should not use the device without adult supervision.
- Do not insert fingers into the EV connector.
- Do not use this product if the flexible power cord or EV cable is frayed, has broken insulation, or displays any other signs of damage.
- Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.
- To avoid the risk of fire or electric shock, do not use this unit with an extension cord.



#### WARNING: RISK OF ELECTRIC SHOCK

Improper connection of the equipment grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded.

Do not modify the plug provided with the product. If it will not fit the outlet, have a proper outlet installed by a qualified electrician



#### WARNING: RISK OF ELECTRIC SHOCK

Do not remove the cover or attempt to open the enclosure. There are no user serviceable parts inside. Refer servicing to qualified service personnel.



#### ● WARNING: RISK OF ELECTRIC SHOCK

- 
- Do not touch live electrical parts.
  - Incorrect connections may cause electric shock.
  - Do not disconnect under load.



WARNING: This equipment is intended only for charging vehicles that do not require ventilation during charging. Please refer to your vehicle's owner's manual to determine ventilation requirements.



WARNING: Do not use extended cables to increase the length of the charging cable. Maximum length is limited to 5M



WARNING: Do not drag the charger by its input power cord.



CAUTION: Do not expose to liquid, vapor, or rain.



CAUTION: If this unit is installed outdoors, the outlet must be rated for outdoor installation. The outlet must be installed properly to maintain the proper NEMA rating of the enclosure.

- Installation work and electrical wiring must be done by qualified person(s) in accordance with all applicable codes and standards, including fire-rated construction.
  - Do not touch the terminals or other current-carrying parts.
  - Take care not to drill into any pipes or power lines beneath the surface when preparing the mounting holes. Use a power line / metal detector.
  - Do not trample or drive over the product's cables.
  - Do not put any foreign objects into the enclosure.
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- Do not start the vehicle's engine when the charging connector is still connected.



**CAUTION:** Do not use this product if there is any damage to the unit. In the event that the unit is not operational, send it back to the manufacturer.

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## **1.4 FCC regulatory conformance**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and

on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

## RF Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be collocated or operating in conjunction with any other antenna or transmitter.

**Please read and save these instructions carefully**

## **2. Specification Parameter**

### **2.1 Product Introduction**

The three phases DC charger is used for electric vehicle's DC charging function, it can be authorized by RFID card/APP control/Plug&charge . The RFID card is a key component to start or stop the charging session. The LED indicator on the



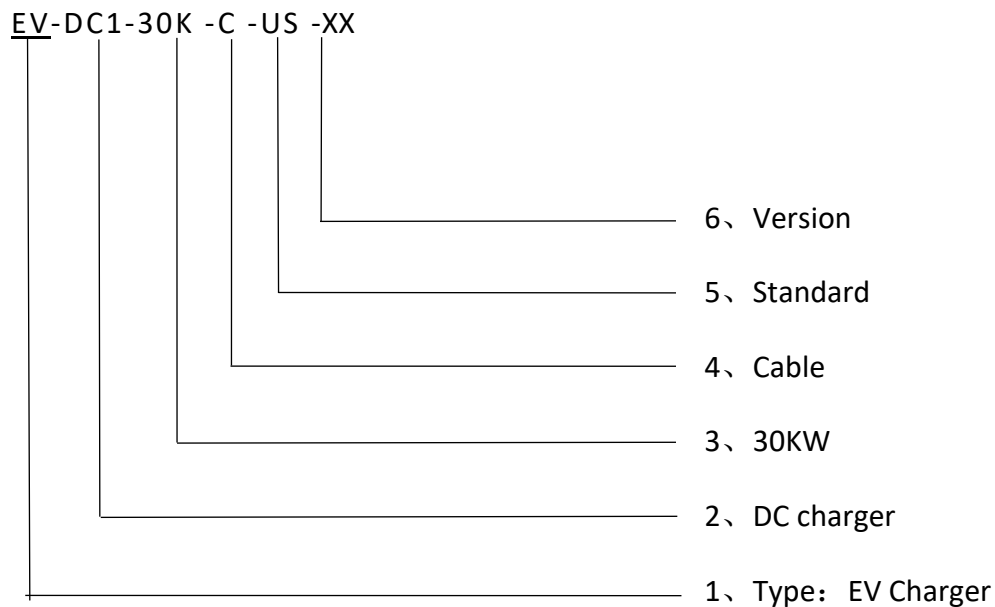
front panel helps you understand what is happening with the charger by indicating different colors. The ingress protection grade of the charger is high as Type 4X, with the excellent capacity of water and rust proof, assuring the safe outdoor operation and maintenance. The floor-stand installation is optional by ordering an additional pedestal . Designed according to Electric Vehicle Charging System Standard UL2202, UL2231-1, UL2231-2, UL991 and UL1998, the charger is compliant with the industrial standards and safe for usage.

## 2.2 Specification Parameter

Datasheet	Model	EVDC1-30K-C-US-XX
Input	Power Supply	L1+L2+L3+PE
	Rated Voltage	480V AC $\pm 10\%$
	Rated Current	50A
	Frequency	60Hz
Output	Output Voltage	200-1000V DC
	Maximum Current	100A
	Rated Power	30kW
User interface	Charging Connector	CCS1/NACS
	Cable length	5m
	Housing Material	Aluminum Alloy
	LED Indicator	Green / Blue / Red
	RFID Reader	ISO 14443-4A / ISO 14443-4B
	Authorization Mode	Plug & Charge/RFID card
Communication	Connectivity	Wi-Fi, 4G, LAN
	Protocol	OCPP1.6J
Safety	Ingress Protection	Type 4X
	Impact Protection	IK10
	Electrical Protection	Over current protection, Insulation Monitoring, Ground protection, Surge protection, Over/Under voltage protection, Over/Under frequency protection, Over temperature protection
	Certification	UL2202, UL2231-1, UL2231-2, UL991 and UL1998
	Warranty	2 years
	Installation	Wall-mount

Environment	Operation Temperature	-35°C-50°C (>50°C derating)
	Storage Temperature	- 40°C~ + 70°C
	Operation Humidity	5% - 95% no condensation
	Operation Altitude	<2000m
	Product Dimension (H*W*D)	672×682×236mm (without POS) 672×682×262mm (with POS)
Package	Net Weight	65kg

## 2.3 Product Naming



## 2.4 Performance and Characteristics

### Performance:

- LED Indicator: Different light color indicate different working status of the charger.

### Characteristics:

- Dust & Water Proof: Type 4X protection grade, workable under severe

conditions, no need of extra shelter

### 3. Installation

#### 3.1 Before Installation

##### 3.1.1 Safety Check

- Check for damages occurred during transportation
- Before connecting the product to the power supply, check that the power supply voltage and current ratings correspond with the power supply details shown on the product rating label.



**WARNING:** Disconnect the power supply before installing or repairing the charger. Failure to do so may result in physical injury or damage to the power supply system and the charger



**DANGER: RISK OF SUFFOCATION**

Keep any packing materials away from children. These materials are a potential source of danger, e.g. suffocation.

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The charger must be installed only by a licensed electrician in accordance with the provisions of the local electrical industry construction and should comply with national electrical codes and standards.

Before installing the charger, make sure you have read all instructions in this manual and fully understand its contents.

##### 3.1.2 Grounding instructions

For permanently connected units:

**BONDING/GROUNDING INSTRUCTIONS** – This unit is to be connected to a

bonded/grounded, metal, permanent wiring system; or an equipment-bonding/grounding conductor is to be run with circuit conductors and connected to equipment-bonding/grounding terminal or lead on battery charger. Connections to battery charger shall be comply with all local codes and ordinances.

### 3.1.3 Secure the main body mounting bracket to the wall with the appropriate screw



**WARNING:** Before installation, make sure the power supply is disconnected

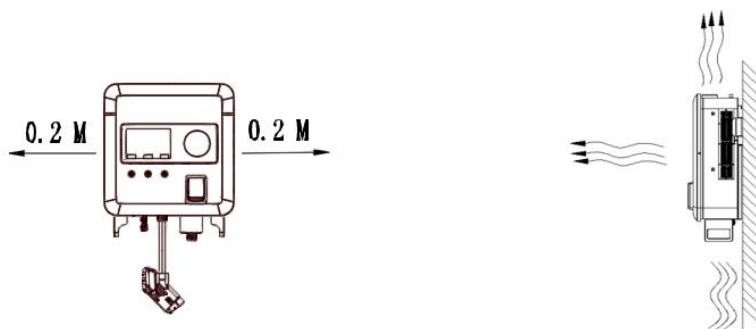
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**CAUTION:** Before mounting the charger, determine a suitable mounting location. The unit must be fixed to a wooden or masonry concrete wall using hardware that is appropriate for the surface. Do not install on dry walls, wall boards, or thin plywood. The fixing point must be capable of supporting the weight of the unit.

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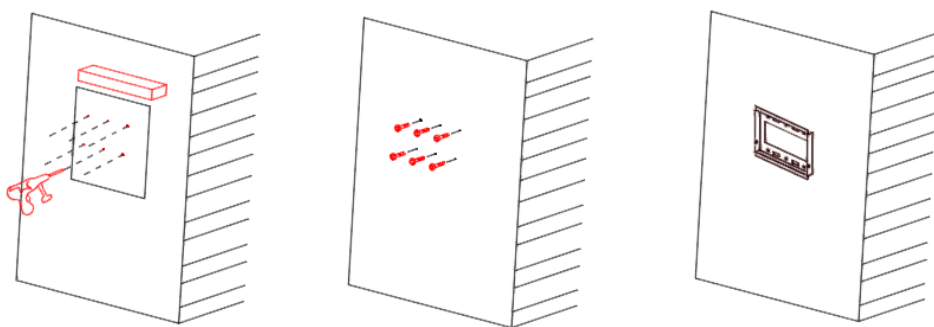
### 3.2 Requirement for Installation





1. The protection level is Type 4X which is suitable to be installed indoor and outdoor.
2. The location for installation should be with good ventilation.
3. Make sure the surface for installation is tough enough to sustain the weight which is more than 5 times of the charge.

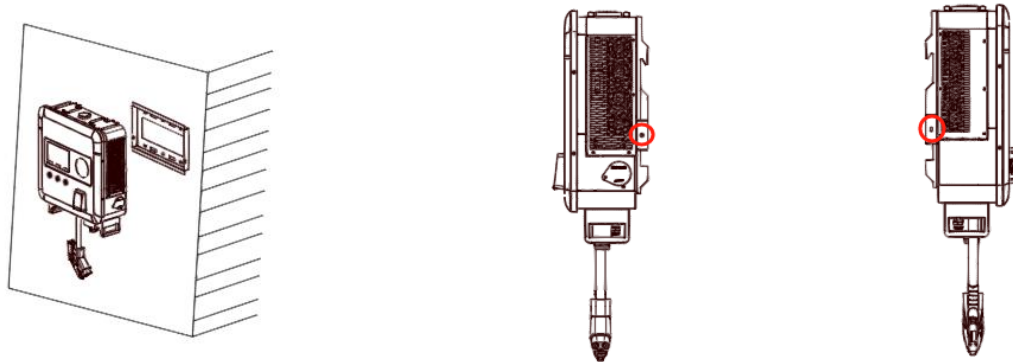
### 3.3 Requirement for Installation



1. Drill holes on the wall which aligns to the reference hold on the bracket.  
Measure the levelness with the level instrument. (Drill bit:  $\phi$  12; Depth: 60mm)

2. Drill the expansion screws into the holes. Pull out the screws after twisting.
3. Get the bracket, aim at the screw hole and twist the expansion screws again.

Torque: 20N.M



4. Lift the charger and hold it on the bracket. Make sure the two sides embedded into the retainers. Lean on the bracket vertically and the slot height should be higher than the boss height. Decline slowly and check whether the boss is completely embedded into the slot.
5. Take M6 screws to fasten the bottom surface. The torque is 5N.MM.

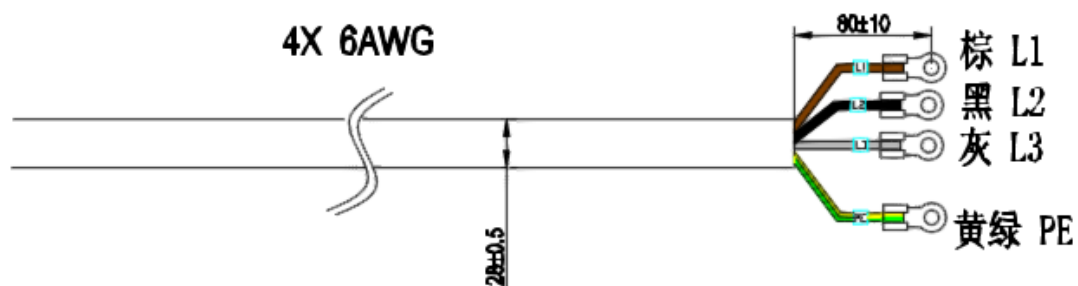
### **3.4 Cable Connection**

#### **3.4.1 Procedure of Cable Connection**

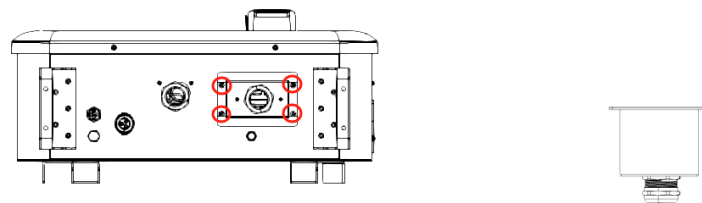
1. The recommended input cable specification is 4 \* 6AWG, 90° C copper conductor, with a cable diameter of  $\leq \phi 28\text{mm}$ . Please control the distance between this product and the distribution box reasonably during installation.

The distribution box should use a suitable cable waterproof head and take waterproof and dustproof measures.

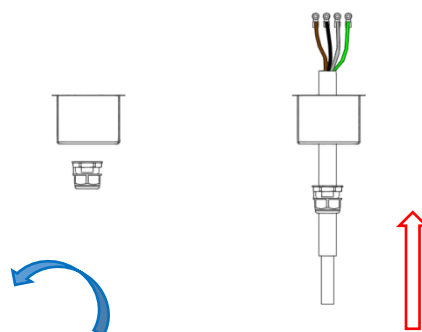
2. Cable stripping specifications, please strip and rivet OT terminals according to the following dimensions and specifications.



3. First of all, use a Phillips screwdriver to loosen the 4 screws of the protective cover and remove the protective cover.

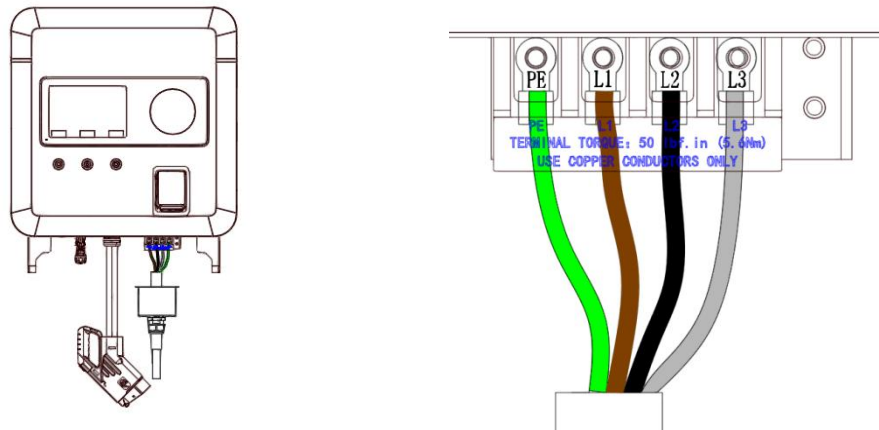


4. Unscrew the gland, thread the input wire with the pressed terminal through the gland, and then through the protective cover.

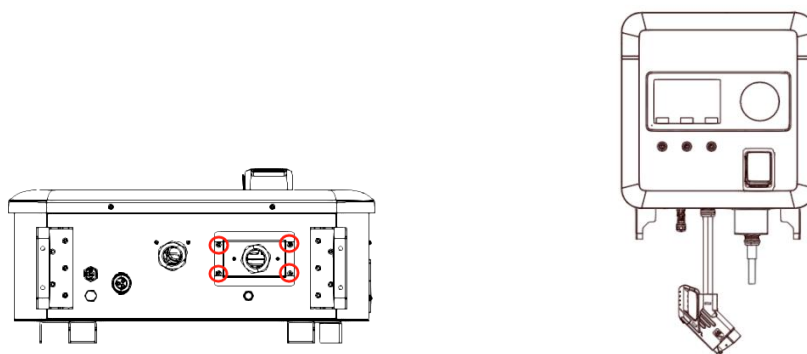


5. Fix the OT terminals of L1/L2/L3/N wires onto the electric wood using a Phillips screwdriver as shown in the illustration

The ground wire is fixed on the housing (Torque:  $3\text{N} \cdot \text{m}$ )



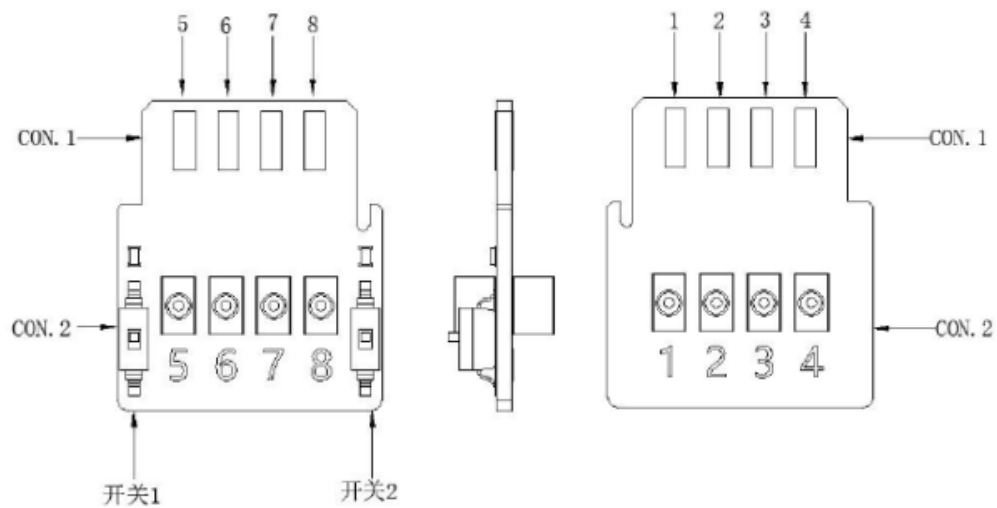
6. Use a Phillips screwdriver to secure the protective cover to the housing (Torque:  $3\text{N} \cdot \text{m}$ )



### 3.4.2 Explanation for 8PIN Communication Terminal Installation

#### 1. Pin Definition





## 2. Tools



Slotted Screwdriver

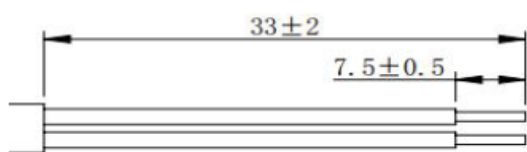


Crimping Pliers

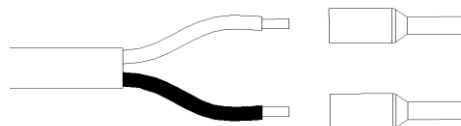


Wire Strippers

## 3. Dimension of stripping

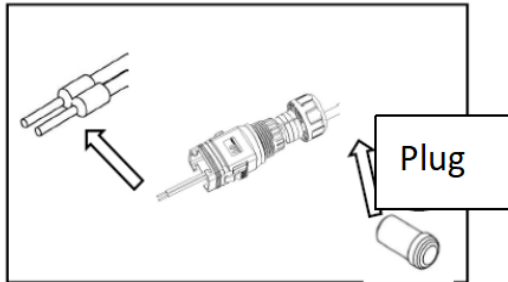


### Crimp Terminals



## 4. Installation Procedure

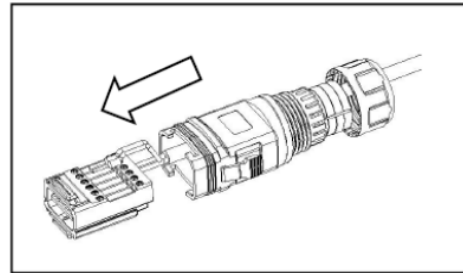
1) Take out of the stopper and crimp terminals according to the following picture.



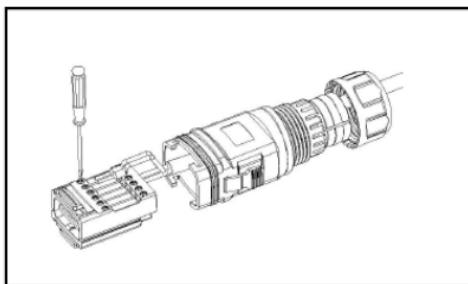
2) Insert the lines into the terminal.

Pin 1 RS485-2-B red; Pin 2 RS485-2-A black

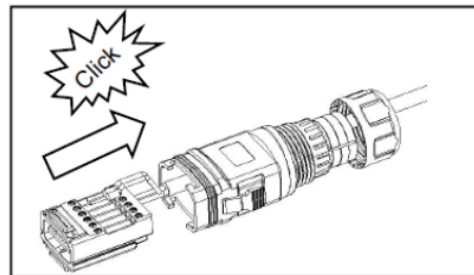
Pin 3 RS485-3-B red; Pin 4 RS485-3-A black



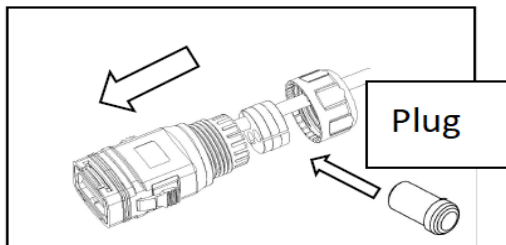
3) Press tightly on the lines by the slotted screwdriver with the torque of  $1.2 \pm 0.1 \text{ N} \cdot \text{m}$



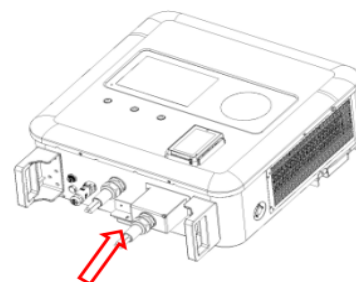
4) Straight the lines to avoid lines stacked up together. There is a sound of "Click" after the lines inserted into the housing



5) Put the stopper into the housing and insert the plugs into the holes without lines

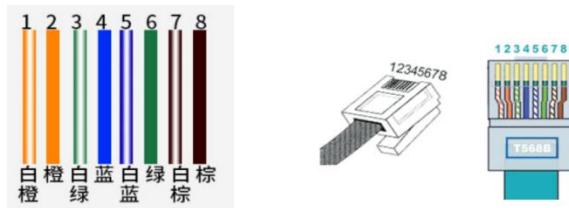


6) Insert the terminal into the bottom of the charger

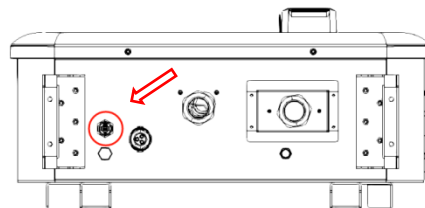
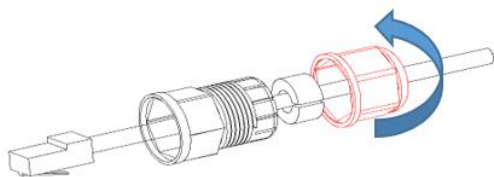


### 3.4.3 RJ45 terminal and Connection

- 1) Shield twisted pair (Category 6) network cable is recommended with connection standard 568B and wire length  $\leq 200\text{m}$ .
- 2) If the network cable is made by user, the terminal crimping way should be in accordance with standard 568B.



- 3) The RJ plug goes through the water-proof on the exterior side. Make sure the network cable securely locked and insert back to the charger as the following picture.



## 4. Configuration and Operation

### 4.1 Inspection before Commissioning

Item	Description
Location	The charger is correctly mounted at a place that is convenient for operation and maintenance.
Charger	The charger is firmly and securely installed.
Cable	Cables are correctly and firmly connected, and are adequately protected from damage

Current Leakage protection	The AC input's current leakage protection switch is reasonable
Clearance	The charger has sufficient cooling space and there is no other stuff or components are left on the top of the charger

- **Ensure that all requirements are met before commissioning.**
- **The green led indicator is steady on, indicating that the charger is in standby state.**

#### **4.2 Power-on status checking**

State	Description	LED Status
Standby	Power-on, but no gun plug-in	Steady green light
Ready to charge	Gun plugged in, but not yet started charging	Blue light on
Charging in progress	Gun plugged in, charging in progress	Blue light flashing
Fault has occurred	An error condition has occurred;	Flashing red or constantly red

## **4.3 Charging Operation**

### **1) Connect the charger to electric vehicle**

1. Plug the charging connector into the EV charger.
2. After plug-in, please check the connector is connected correctly and tightly.
3. When the connection is correctly established, the charger's LED indicator will be a blue light, which indicates that the charger is ready for charging.

### **2) Start charging & stop charging**

1. Scan the RFID card on the identification area of front panel, which will start the charging activity.
2. When the EV is fully charged, the charging process will stop.