

User Manual

EV AC Charger

SWACW11K400DQ

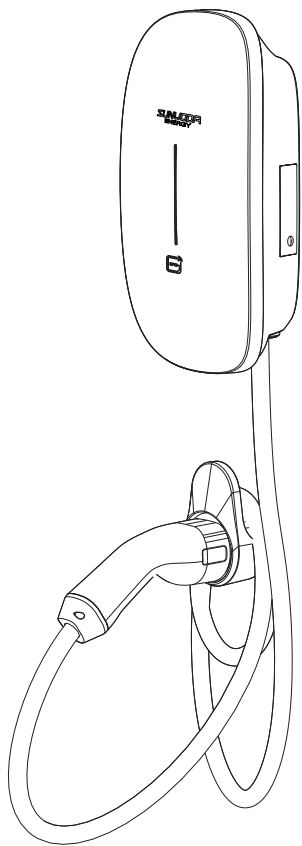


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IMPORTANT SAFETY AND LEGAL INFORMATION

Read this entire manual before installation or operation. Failure to do so may result in death, serious injury, or property damage.

Intended Audience

- Qualified electricians performing the installation.
 - End-users operating the charger.
-

Qualified Personnel

- Installation, commissioning, and maintenance must be performed by a qualified and licensed electrician in accordance with all local and national electrical codes and regulations.
-

Disclaimer of Liability

The manufacturer is not liable for damages, injuries, or failures resulting from:

- Improper installation, operation, or maintenance.
 - Failure to follow the instructions in this guide.
 - Modifications or repairs by unauthorized personnel.
 - Use of non-compatible or faulty equipment.
-

Warranty Notice

- Any damage caused by incorrect installation voids the product warranty.
 - The guide is for reference only and does not serve as a warranty of any kind.
-



NOTICE!

Some functions may be subject to change, according to the charger's latest software updates.

GLOSSARY OF SYMBOLS & TERMS

**DANGER!**

Indicates an imminently hazardous situation, which will result in death or serious bodily injury if the corresponding precautions are not taken.

**WARNING!**

Indicates a potentially hazardous situation, which can result in death or serious bodily injury if the corresponding precautions are not taken.

**CAUTION!**

Means that if the corresponding safety measures are not taken, a potentially hazardous situation can occur that may result in slight bodily injury.

**CAUTION!**

Means that damage to property can occur if the corresponding safety measures are not taken.

**NOTE!**

A note gives more data or gives some tips, to make it easier to do the steps.

Term	Description
SPD	Surge Protection Device
RCD	Residual Current Device
PE	Protective Earth
IP65	Ingress Protection rating
CPMS	Charge Point Management System
CE	Conformité Européenne
RoHS	Restriction of Hazardous Substance
Reach	Registration, Evaluation, Authorisation and Restriction of Chemicals
RFID	Radio Frequency Identification
EV	Electric Vehicle
AC	Alternating Current
PIN	Personal Identification Number

1. SAFETY

1.1 GENERAL WARNINGS

- Installation, commissioning, and service must only be performed by qualified and licensed electricians in accordance with local laws and regulations
- The charger must only be used to charge compatible electric vehicles; do not connect it to any other device or equipment.
- Do not attempt to disassemble, repair, or modify the charger, as the unit is not user-serviceable.
- Contact authorized service personnel for any necessary repairs.

1.2 INSTALLATION SAFETY

- Disconnect all upstream power (circuit breaker/rcbo) before installation, maintenance, or cleaning.
- Ensure the installation surface is solid, flat, and capable of supporting the charger's weight.
- Mount the charger at the recommended installation height and provide sufficient clearance for ventilation and cable handling.
- Use only approved copper conductors of the correct cross-sectional area. Ensure all terminations are tightened to specified torque values.
- Do not coil, twist, weld, or extend cables improperly. Keep cables away from sharp edges and heat sources.
- Seal unused cable entry points to maintain enclosure protection (ip rating).
- Ensure proper grounding through a permanent wiring system or protective earth conductor.
- Install surge protection devices (spd) if required by local regulations. Ensure the upstream breaker or emergency stop switch is clearly labeled and easily accessible.

1.3 ENVIRONMENTAL SAFETY

- Do not install or operate the charger near flammable, explosive, or corrosive materials, vapors, or steam.
- Do not install in areas with strong magnetic fields, wireless transmitters, or direct sunlight.
- Avoid locations exposed to flooding, heavy rain, or extreme weather beyond the charger's specified ratings.
- For indoor multi-charger installations, ensure adequate ventilation is provided.

1.4 OPERATING SAFETY

- Always follow the instructions in the vehicle manufacturer's manual before charging.
- Ensure the vehicle is turned off before connecting or disconnecting the charging connector.
- Insert the charging connector fully and securely into the vehicle inlet before starting a charging session.

- Do not use the charger, cable, or connector if damaged, cracked, frayed, or malfunctioning.
- Never use the charger if the enclosure, connector, or cable shows signs of water ingress.
- Do not spray liquids onto the charger or submerge the connector in water.
- Do not handle the charger or connector with wet hands.
- Keep children and pets away from the charger and charging cable. Do not allow them to play near or with the equipment.
- Arrange charging cables to prevent tripping hazards or obstruction.
- Handle the charger and cable with care. Do not drop, step on, crush, fold, or apply pressure with sharp objects.
- Store the charging connector in its holster when not in use to avoid contamination or moisture ingress.
- Radio waves from the charger may interfere with implanted medical devices such as pacemakers, cochlear implants, and hearing aids. Consult your medical device manufacturer before use.
- Adaptors or conversion adapters are not allowed to be used.
- Cord extension sets are not allowed to be used.

1.5 FIRE AND OVERHEATING PROTECTION

- Do not cover or obstruct the charger during operation.
- Stop using the charger immediately if you notice smoke, unusual smells, sparks, or excessive heat. Disconnect power from the upstream breaker or emergency stop switch and contact service personnel.
- Do not exceed the rated load capacity of the charger or site electrical system.

1.6 EMERGENCY SITUATIONS

In case of fire, smoke, or electric shock:

- Immediately stop charging using the vehicle controls or emergency stop switch.
- Disconnect power at the upstream breaker if safe to do so.
- Evacuate the area and contact emergency services.
- If the charger has been submerged, struck by lightning, or physically damaged (e.g., by vehicle impact), do not use it until inspected and approved by qualified service personnel.

2. MOUNTING PARTS

Upon receipt of the product, please verify the accessories against the list below. If any items are missing, contact us immediately.

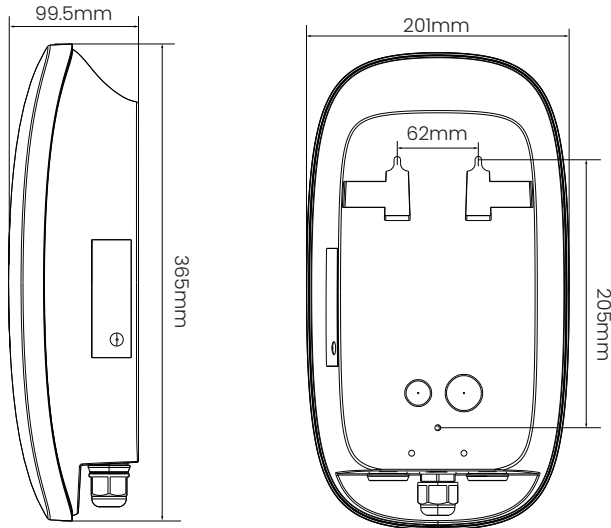
Item	Reference icon	Quantity
M4*32mm screw		7
Wall plug		7
Bootlace ferrule		5
M28 Cable grommet		1
Rubber plug		1
Cable clip		1
M3*12 screw		2
Cable holder		1
Quick guide		1
RFID card		2
M25 cable grommet		1
M20 cable grommet		1
Drilling template diagram		1

2.1 PRODUCT INTRODUCTION

The AC EV Charger is a compact charging solution designed for residential use. It supports both wall-mounted and pole-mounted installation, delivering up to 11 kW charging power with a Type 2 connector, and providing safe, efficient, and user-friendly charging for most electric vehicles.

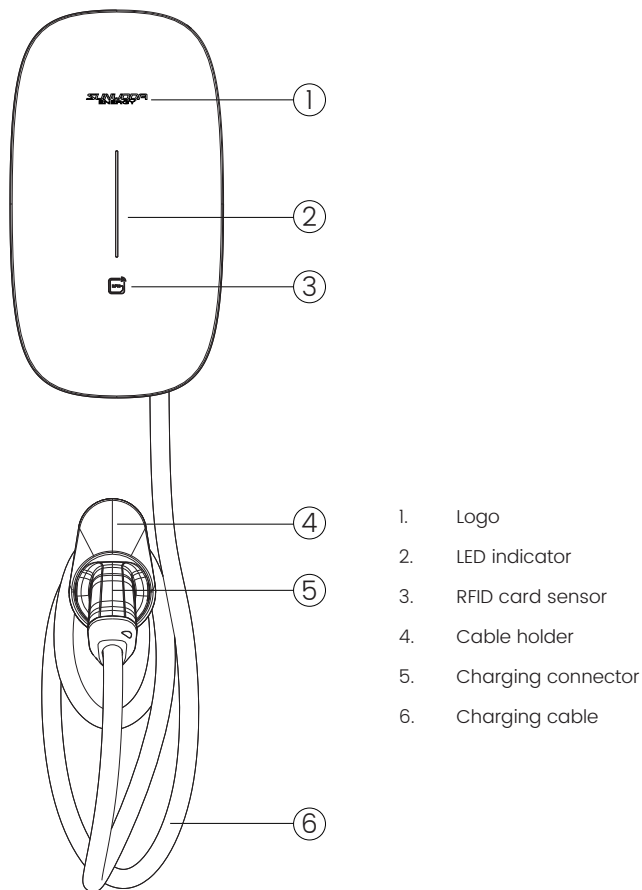
Key features include:

- **Flexible operation:** Multiple start modes available, including Plug to Charge, RFID card, and App-based control.
- **Advanced safety protection:** Integrated overcurrent, residual current (AC/DC), surge, ground, and temperature protection, ensuring safe operation under all conditions.
- **Durable design:** Rated IP65 and IK10, providing excellent resistance against dust, water, and mechanical impact, suitable for both indoor and outdoor use.
- **User-friendly interface:** Equipped with an LED status indicator and RFID card reader, making charging sessions intuitive and straightforward.



3. DESCRIPTION OF THE EV CHARGER

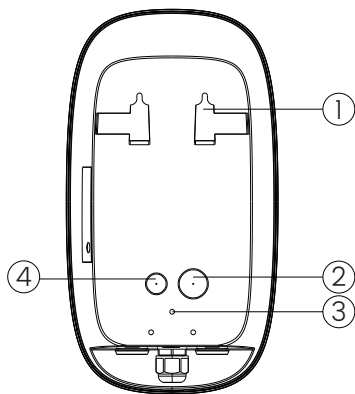
3.1 FRONT VIEW



3.2 BOTTOM VIEW



3.3 BACK VIEW



- 1. Mounting recess
- 2. Knock-out hole for AC input cable
- 3. Mounting hole
- 4. Knock-out hole for communication cable

4. SPECIFICATION

Model	SWACW11K400DQ
Power Supply	3P+N+PE
Rated Voltage	400V AC
Rated Current	16 A
Frequency	50/60 Hz
Rated Power	11 kW
Power Measurement Accuracy	2%
Charge Connector	Type 2 Cable
Enclosure	PC943
Size	365*201*99.5 mm(H*W*D)
Installation	Wall-mount/Pole-mount(Optional)
LED Indicator	Green/Yellow/Red
RFID Reader	Mifare Classic ISO/IEC 14443-A
Start Mode	Plug to Charge/RFID card/App
Embedded Leakage Current Protection	AC: 30 mA Type A DC: 6 mA
Impact Protection	IK10
Ingress Protection	IP65
Electrical Protection	Over current protection Residual current protection Ground protection Surge protection Over/Under voltage protection Over/Under frequency protection Over temperature protection
Certification	CE, RoHS, Reach

Model	SWACW11K400DQ	
Certification Standard	Safety	EN IEC 61851-1:2019
	Health	EN IEC 62311:2020
	EMC	EN 301489-1 V 2.2.3:2019
		EN 301489-3 V2.3.2:2023
		EN 301489-17 V 3.3.1:2024
		EN IEC 61000-6-1:2019
		EN IEC 61000-6-3:2021
		EN IEC 61851-21-2:2021
	Radio spectrum	EN 300328 V 2.2.2:2019
		EN 300330 V 2.1.1:2017
	RoHS	IEC 62321 Series
	Protection of network	18031-1
Operation Temperature	-30°C ~ + 50°C	
Work Humidity	5%-95%	
Work Altitude	≤2000m	

5. PRE-INSTALLATION PREPARATION

5.1 ELECTRICAL PREPARATION

- Calculate the existing electrical load to determine the maximum operating current.
- Calculate the distance to ensure minimal voltage drop.
- Use only copper conductors.
- Use copper wire that meets the specifications of local wiring regulations. The selected cable must be capable of withstanding continuous loads of up to 16A.
- The selected circuit protection device must incorporate an appropriate Type A residual current device (RCD) and corresponding electrical overcurrent protection.

5.2 REQUIRED MATERIALS

Item	Specification
AC input cable	2.5mm ²
RCBO	4P RCBO, C20, 20A, Type A, in compliance with local regulations.
RJ45 cable & connector	Cat 5e, connector (standard). Note: Required only when wired communication is used.

5.3 REQUIRED TOOLS

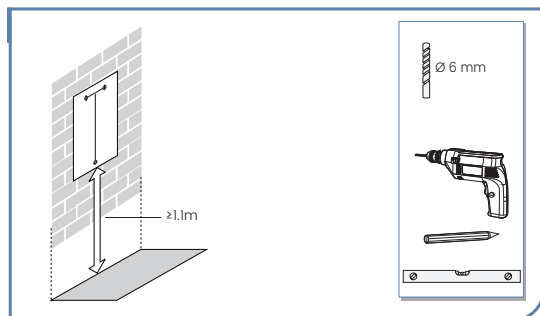
Tools	Specification
Tape measure	5 m
Marking tool	Pencil
Level	Standard
Philips screwdriver	PH2
Hammer	Standard
Drill	Drill bit: $\phi 6$ mm
Wire stripper	2.5 mm ²
Crimping tool	2.5 mm ²
Digital multimeter	Standard
Voltage tester	Standard

5.4 CONFIRM INSTALLATION POSITION

- Ensure that the parking position is within range of the charging cable.
- Ensure there is enough clearance for the charging cable to wrap around the wall charger box.
- Ensure that the charging handle can be comfortably inserted into the side of the wall charger.
- For outdoor installations, provide shelter from persistent rain.
- Install in a well ventilated space. Avoid installation and enclosed boxes close to high-power appliances and gas bottles.

6. INSTALLATION

6.1 DRILL HOLES

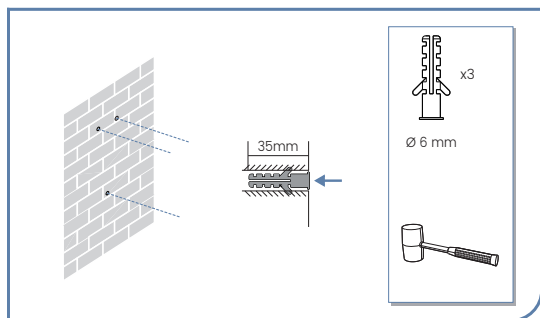


Use the provided mounting template and align it on the wall at a height of at least 1.1 meters from the ground.

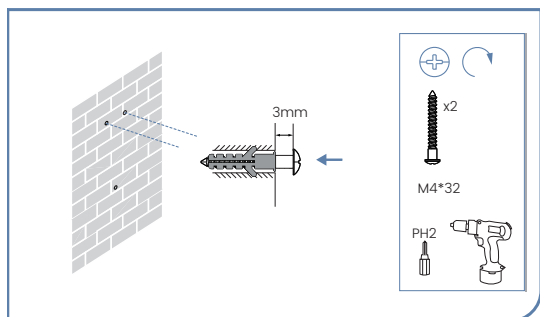
Mark the positions of the 3 mounting holes.

Use a 6mm diameter drill bit to drill 3 holes, each 35mm deep.

6.2 INSERT WALL PLUGS

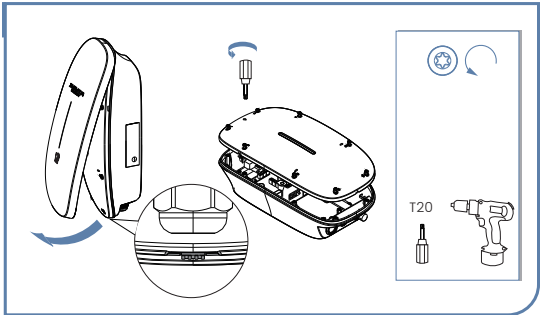


Insert three wall plugs into the drilled holes.



Insert two M4*32 screws into the upper two wall plugs.

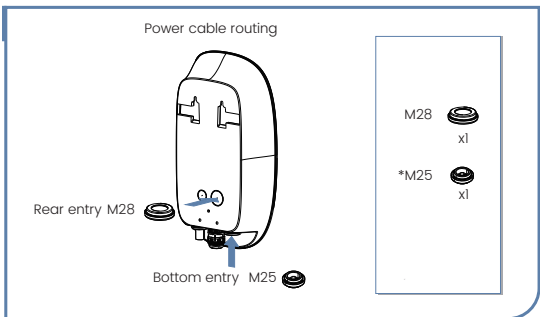
6.3 DETACH THE COVER



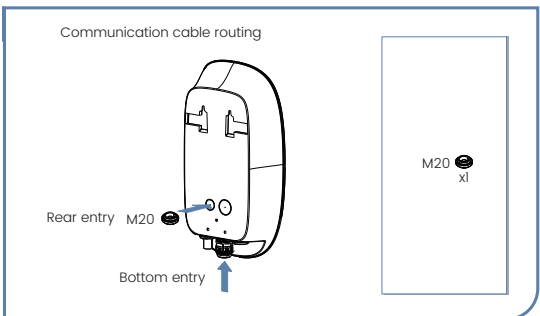
Insert your fingers into the notch at the bottom and pull the front cover outward to detach it.

Remove the middle cover by loosening the 8 screws.

6.4 CONFIRM THE CABLE ENTRY



- Bottom Entry:
Secure the AC input cable using the provided M25 cable grommet and the communication cable using the equipped cable gland.



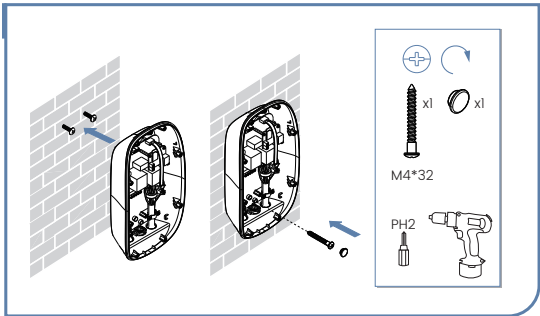
- Rear Entry:
Punch out the knock-out holes and secure the AC input cable with a M28 grommet and the communication cable with a M20 grommet.



WARNING!

If rear entry is selected, install the M25 cable grommet to seal the unused bottom AC entry.

6.5 SECURE THE ENCLOSURE ONTO THE WALL



Hang the charger onto the upper two screws.

Secure the lower middle part of the enclosure using one M4*32m screw.

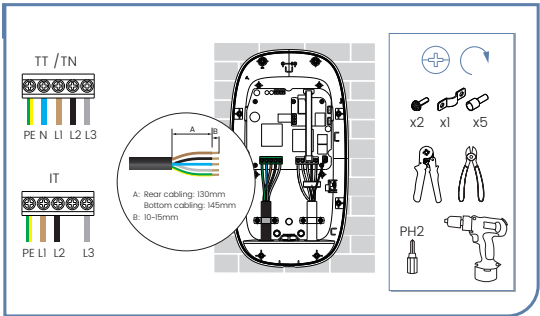
M4: 0.6-1.2 N.m

6.6 CONNECT THE AC INPUT POWER CABLE



DANGER!

Ensure that the power supply is cut off before connecting AC input wire.

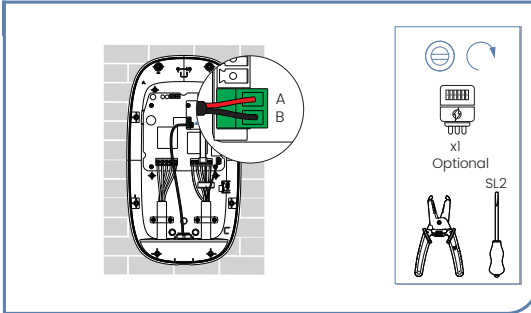


Thread the AC input cable into the cable inlet.

Strip wires to expose 10mm to 15mm of conductor and crimp them into bootlace ferrules.

Insert the wires into the terminal block and tighten them, and then secure the cable with the cable clip using two M3*12mm screws.

6.7 CONNECT THE RS485 CABLE



The AC EV charger and the inverter communicate via RS485 or CAN. If you choose to communicate with the inverter via RS485, refer to Type 1 of the wiring diagram. If you choose to communicate with the inverter via CAN, refer to Type 2 of the wiring diagram.

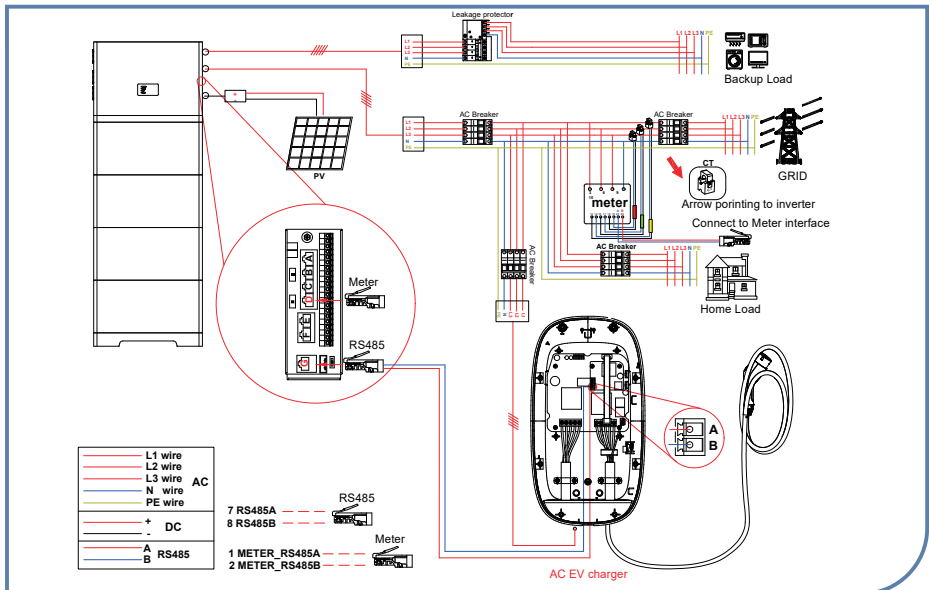


NOTICE!

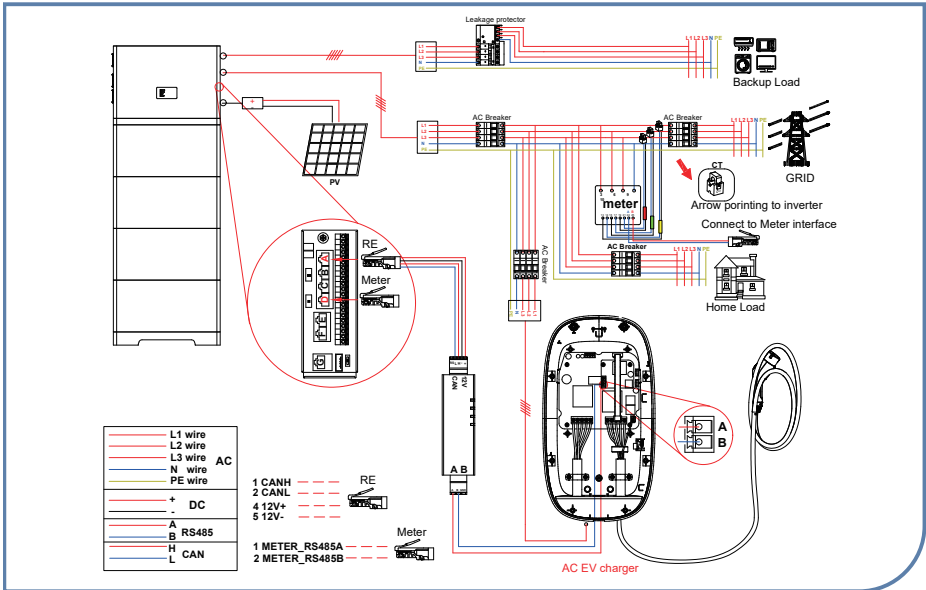
RS485 to CAN conversion requires an additional module.

6.8 ELECTRICAL CONNECTION

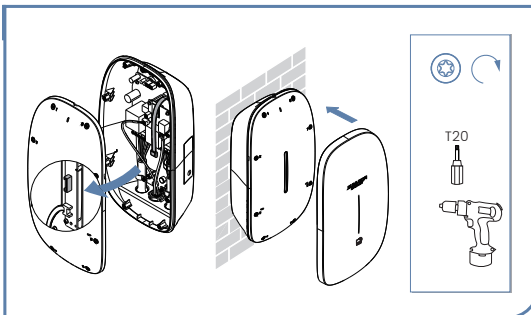
Type 1



Type 2



6.9 REATTACH THE COVER



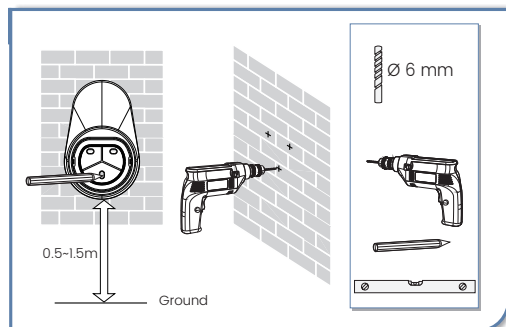
Connect the two jumper wires. Ensure they are firmly inserted and secured before proceeding to close the cover.

Tighten the eight screws in the middle cover.

Install the decorative cover back.

M4: 0.6~1.2 N.m

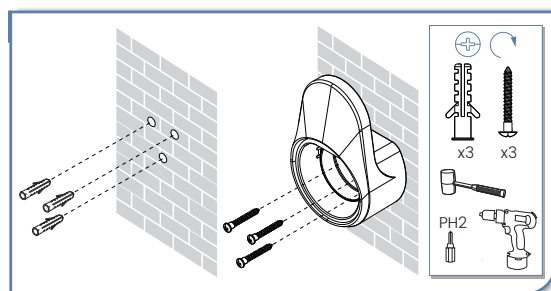
6.10 INSTALL THE CABLE HOLDER



Choose a location 0.5–1.5 meters above ground and close to the charger for convenience.

Hold the cable holder against the wall.

Use a pencil to mark the three fixing holes.



Use a 6mm diameter drill bit to drill three holes, each 35mm deep, at the marked locations.

Insert three wall plugs into the drilled holes.

Align holes in the cable holder with the ones on the wall.

Secure it using three M4*32mm screws to complete the holder installation.

M4: 0.6–1.2 N.m

7. CHARGER USAGE

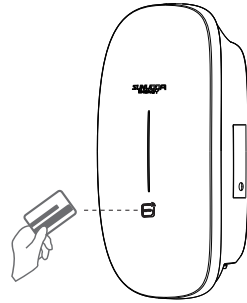
7.1 CONTROL CHARGING VIA APP

Please refer to the AC EV charger control guide to start charging.



7.2 CHARGING BY TAPPING CARD

- Plug in the charging connector, and the indicator flashes green quickly for five times.
- Tap card, and the indicator flashes yellow quickly for up to five times.
- During charging, the indicator gradually brightens, then gradually dims in green.
- Tap card and unplug the connector.



8. INDICATOR

Indicator	color	EV charger status	Indicator status
Green		Standby	Cycle: Slow flashing: on for 1s, then off for 3s.
		Charging initiated, awaiting vehicle response	Cycle: Rapid flashing twice (on for 200ms, then off for 1000ms), followed by a 3000ms off.
		Charging connector plugged in, ready for Charging	Cycle: Rapid flashing for 5 times (on for 200ms, then off for 1000ms), followed by a 3000ms off.
		Charging in progress	Cycle: gradually brightens, then gradually dims, on for 1s, off for 1s.
		Charging completed	Steady green.
Yellow		No Network/Not Connected to Server	Cycle: The green light is on for 1s, followed by the yellow light on for 1s, then off for 3s.
		Bluetooth lock	Cycle: Flashing: on for 4s, then off for 1s.
		Scheduled charging in Bluetooth mode	Cycle: Rapid flashing: on for 2s, then off for 2s.
		Insufficient Power Allocated, Pausing Charging	Cycle: Rapid flashing for 5 times (on for 200ms, then off for 1000ms), followed by a 3000ms off.
		Card Identified Successfully	Cycle: Rapid flashing: The indicator light is on for 100ms, then off for 100ms, with a maximum of 5 repetitions.
		Charger Reserved (Occupied)	Rapid flashing: on for 2s, then off for 2s
		Alarm	Steady yellow.
White		Program is upgrading	Cycle: Rapid flashing: on for 200ms, then off for 1000ms, this pattern repeats five times, followed by a 3000ms off.
		Power-On Self-Test	Cycle: Breathing light: Gradually brightens, then gradually dims, on for 1s, off for 1s.

9. TROUBLESHOOTING

Indicator color	EV charger status	Indicator status	Solution
Red	Relay adhesion	Steady red	Please contact after-sales
	Leakage current fault	Cycle: on for 500ms, then off for 500ms once, followed by 3s off.	
	CP fault	Cycle: on for 500ms, then off for 500ms, twice; followed by 3s off.	
	Overcurrent fault	Cycle: on for 500ms, then off for 500ms, 3 times; followed by 3s off.	
	Reverse polarity fault	Cycle: on for 500ms, then off for 500ms, 4 times; followed by 3s off.	
	Leakage current loop anomaly (self-check)	Cycle: on for 500ms, then off for 500ms, 5 times; followed by 3s off.	
	Input terminal overheat fault	Cycle: on for 500ms, then off for 500ms, 6 times; followed by 3s off.	
	Relay Overheat	Cycle: on for 500ms, then off for 500ms, 7 times; followed by 3s off.	
Red + Yellow	Output voltage fault	Cycle: on for 500ms, then off for 500ms, 9 times; followed by 3s off.	Please try again 10 minutes later
	Undervoltage fault	Cycle: yellow on for 2s, followed by the red flashing once (on for 500ms, off for 500ms), then 3s off.	
	Overvoltage fault		
	Overfrequency fault	Cycle: yellow on for 2s, followed by the red flashing twice (on for 500ms, off for 500ms), then 3s off.	Please try again 10 minutes later
	Underfrequency fault		
	Smart meter communication failure	Yellow on for 2s, followed by the red flashing 4 times (on for 500ms, off for 500ms), then 3s off.	Please contact after-sales
	Current transformer (CT) anomaly	Yellow on for 2s, followed by the red flashing 5 times (on for 500ms, off for 500ms), then 3s off.	

Indicator color	EV charger status	Indicator status	Solution
Red +	Charging connector lock anomaly	Yellow on for 2s, followed by the red flashing 6 times (on for 500ms, off for 500ms), then 3s off.	Please contact after-sales
Yellow	Charging connector current anomaly	Yellow on for 2s, followed by the red flashing 7 times (on for 500ms, off for 500ms), then 3s off.	
White	BOOT security verification failed or security chip is malfunctioning	Cycle: Flashing white twice (on for 200ms, then off for 1000ms), followed by 5000ms off.	
	The charger in a disabled state	Steady white	

10. ROUTINE MAINTENANCE

To prevent many of the faults listed above, it is recommended to perform basic maintenance every six months:

- Visual Inspection: Check the enclosure and cables for physical damage or wear.
- Cleaning: Use a dry cloth to clean the surface of the charger.



WARNING!

Do not use corrosive cleaners, glass cleaners, or organic solvents.

11. STORAGE & TRANSPORTATION

- Chargers should be transported in the original packages. Do not place other objects on the top of the charger.
- Before transportation, store the product in a clean, dry, and well ventilated place with a relative humidity of not more than 80% and free from corrosive gases.
- The environmental specifications for storage and transportation shall not go beyond those specified in the Technical Specifications.

12. DISASSEMBLY

- Only authorized and qualified electricians are allowed to disassemble the product.
- Power off the charger before disassembling it.
- Disassemble a charger in the reverse order of installation.

13. RECYCLING & DISPOSAL



This product should not be disposed of with general household waste. It contains electronic components and metals that may be harmful to the environment.

Please follow these steps:

- Contact your local municipality or recycling center for EV charger disposal instructions.
- Remove the device by a certified professional before recycling.
- Do not burn, crush, or disassemble the charger.