PROJECT EV

APEX

Instruction Manual

APEX Series EV Chargers 7.3KW / 22KW

Contents

Contact Information

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Safety Information

Project EV chargers are designed and tested in accordance with international safety requirements. However, certain safety precautions must be taken when installing and operating this. The installer must read and follow all instructions, cautions and warnings in this installation manual.

- All operations including transport, installation, start-up and maintenance, must be carried out by qualified, trained personnel.
- The electrical installation & maintenance of the charger shall be conducted by a licensed electrician and shall comply with local wiring rules and regulations.
- Before installation, check the unit to ensure it is free of any transport or handling.Unauthorized removal of necessary protections, improper use, incorrect installation and operation may lead to serious safety and shock hazards or equipment damage.
- Do not install the equipment in adverse environmental conditions such as in close proximity to flammable or explosive substances; in a corrosive or desert environment; where there is exposure to extreme high or low temperatures; or where humidity is high.
- Do not use the equipment when the safety devices do not work or are disabled.
- Use personal protective equipment, including gloves and eye protection during the installation.
- Inform the manufacturer about non-standard installation conditions.
- Do not use the equipment if any operating anomalies are found. Avoid temporary repairs.
- All repairs should be carried out using only approved spare parts, which must be installed in accordance with their intended use and by a licensed contractor or authorized Project EV service partner.
- Liabilities arising from commercial components are delegated to their respective manufacturers.

	Danger - Danger indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Warning - Warning indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Caution - Caution indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	CE - The charger complies with the requirements of the applicable CE guidelines.
	UKCA - The charger complies with the requirements of the applicable UKCA guidelines.
	Beware of hot surface - The charger can become hot during operation. Avoid contact during operation.
	Danger of high voltages - Danger to life due to high voltages in the charger.
	Danger - Risk of Electric Shock
	Read the manual carefully.
	Product should not be disposed as household waste.

Product Handling

To ensure safety, the following points should be paid attention to:

- All accessories are placed separately during transport or handling.
- Avoid violent shock and impact.

Out of the box inspection

- Please open the charging pile packaging and verify all parts according to the attachment list.
- Check the charging pile for damage in transport. If damage or missing parts are found, do not install and inform the carrier and dealer. Determine if this machine is the model that you want to purchase.
- Note: Please keep the packing boxes and packaging materials for future handling.

Install

- Pre-installation preparation

The following tools are required for the installation:
Screwdriver, spirit level, cable strippers, crimping pliers

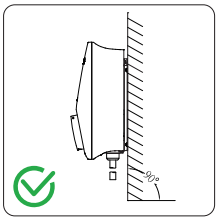
- Installation precautions

Please strictly follow the wiring requirements and correct access. Please confirm that all fasteners are locked to secure the charging pile.

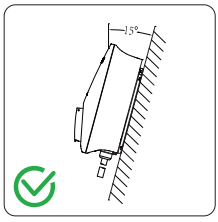
- Installation placement environment and location

- The area where the charger must be placed must be well ventilated, far away from water, combustible gas and corrosive agent.
- Ensure that the ground or installation platform can withstand the weight of the charger.
- If the charger is disassembled and used at low temperature, there may be ingress of moisture, be sure to wait for the charger to be completely dry. Once dry, the unit can be installed and used normally. Otherwise there is danger of component failure.
- Please place the charger near the mains input or near an isolation switch to disconnect and cut off the power supply in an emergency.

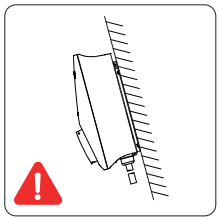
Note: The actual installation needs to comply with current wiring regulations and local safety regulations.
Ensure that the wall or column is vertical or positive 15 ° before installation.

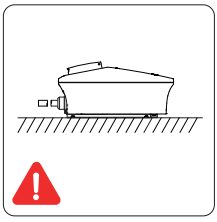


Vertical



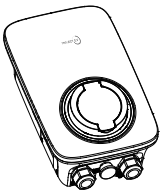
Front


Tilt Back


Tilt Flat

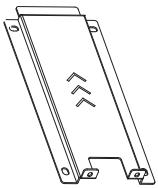
Packaging List

A



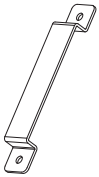
EV Charger
Quantity: x1

B



Mounting Backplate
Quantity: x1

C

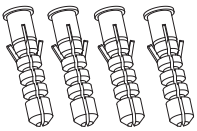


Mounting Bracket
Quantity: x1

D

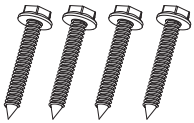
RFID Card
Quantity: x2

E



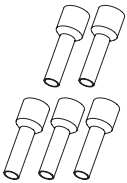
Wall Plugs
Quantity: x4

F



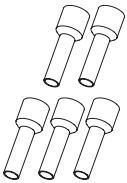
Fixing Screws
Quantity: x4

G



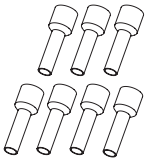
Tubular Terminal (EVN10-12)
Quantity: x5

H



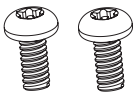
Tubular Terminal (EVN6012)
Quantity: x5

I



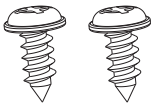
Tubular Terminal (EVN0508)
Quantity: x7

J



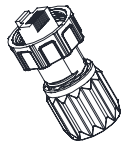
Tamper Proof Screw
Quantity: x2

K



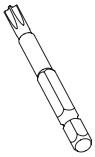
Self-Tapping Screw
Quantity: x2

L



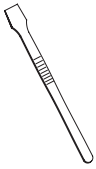
RJ45 Connectors
Quantity: x1

M



Tamper Proof Screw Motorised Screwdriver Bit
Quantity: x1

N

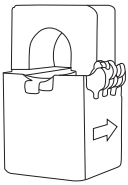


Front Cover Removal Tool
Quantity: x1

O

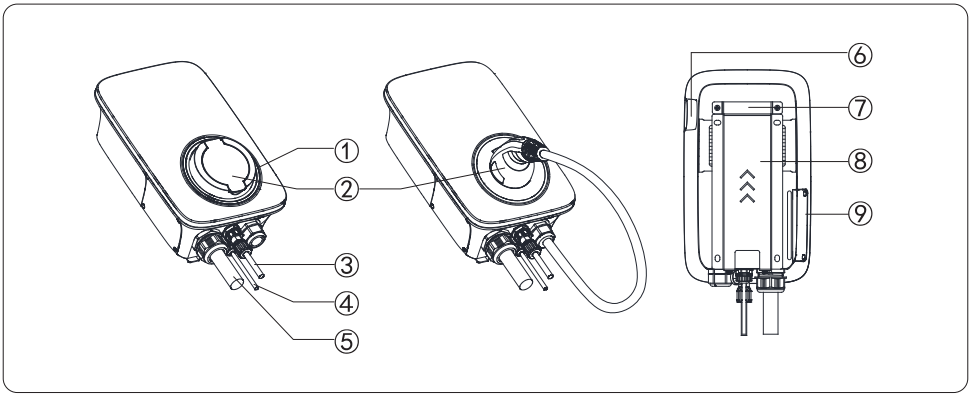
Quick Installation Guide
Quantity: x1

P



CT Clamp
Quantity: x1
*Only supplied in APEX-7S-X

Product Introduction



① Meaning of lights
- ·Green breathing light - standby status
- ·Blue steady - EV Plug inserted status
- ·Blue breathing light - charging start status/pause
- ·Blue running light - charging status
- ·Green steady - charging end status
- ·Red steady - charger fault, shutdown protection
- ·Yellow steady - locked status

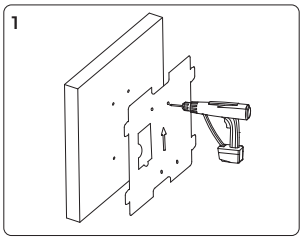
② Socket or Plug
③ RJ45 Communication wire
④ **RS485 Communication wire**
⑤ Incoming cable
⑥ Stop button
⑦ Mounting Bracket
⑧ Mounting Backplate
⑨ Side cover

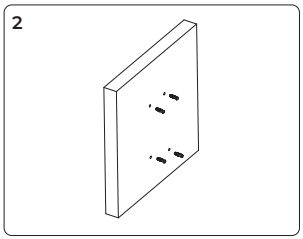
Installation - Mounting

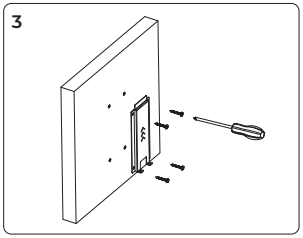
Wall-Mounted Installation Method:

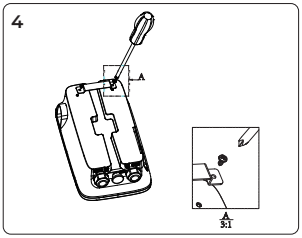
1. Open the package and mark 4 holes in the wall (φ 8 * 50mm).
2. Fit into the wall plug.
3. Attach the mounting backplate with screws to the mounting wall.
4. Attach the bracket to the charger.
5. Hang the charger into the mounting back plate and screw it.
6. Installation completed.

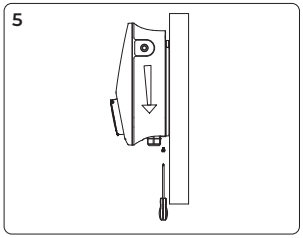
Note: Installation wall angle 90°±15, thickness > 50mm

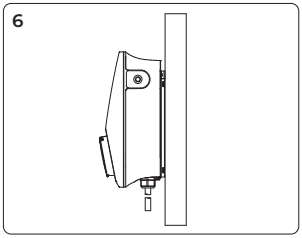






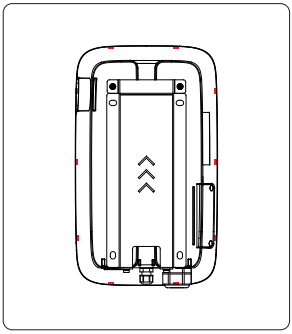


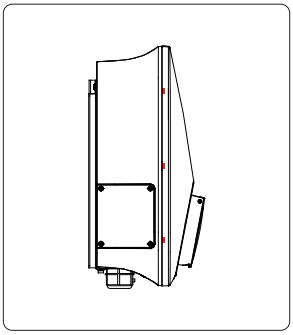


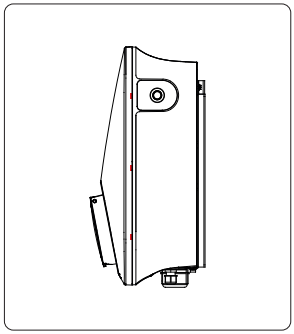


Removing the Base Cover Plate to Change Colour

1. Using a flat-headed screwdriver, push in the tabs connecting the front plate to the charging unit. There are 10 tabs in total, located in the red positions below.





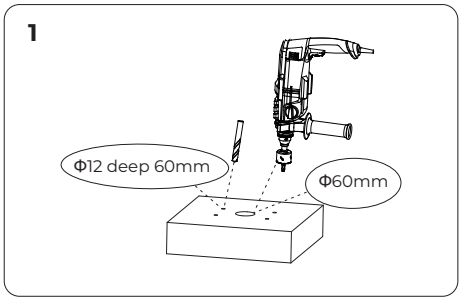


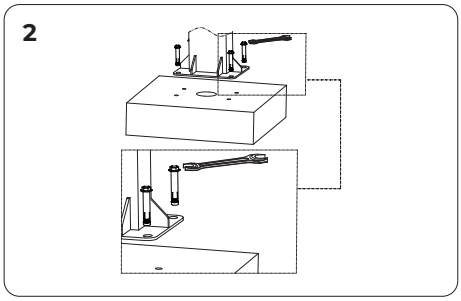
Installation - Mounting

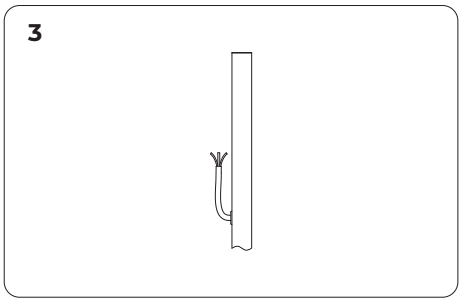
Post Mounted Installation Method (Using Additional Product Code APEX-SPOST)

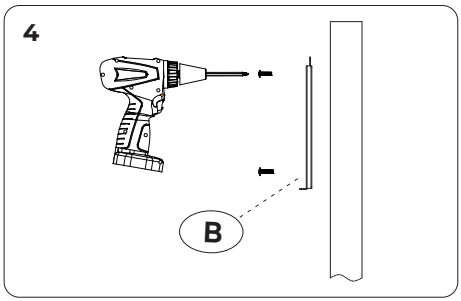
1. Drill four holes in the concrete or solid floor, each measuring 165mm by 95mm with a diameter of 10mm and a depth of 50mm. Additionally, drill one central hole with a diameter of up to 60mm for cable entry to the post supplying the charge point.
2. Install and fix the anchor screws.
3. The mains cable runs through the column hole through the bottom of the column.
4. Install the backplate to the post/column with screws.
5. Attach the bracket to the charger.
6. Hang the charger into the mounting back plate and secure it.
7. Installation completed.

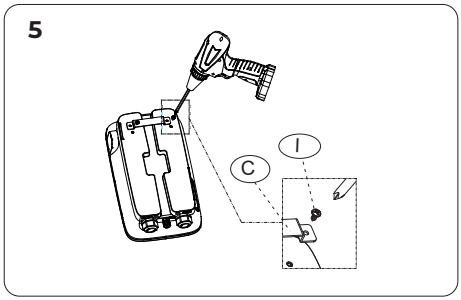
Note: The angle of cement ground 90°±15

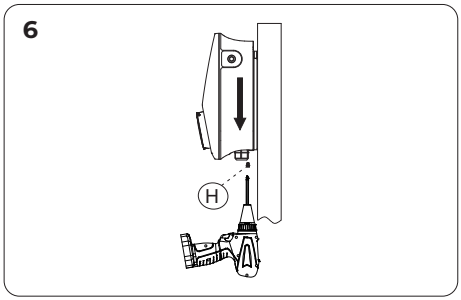












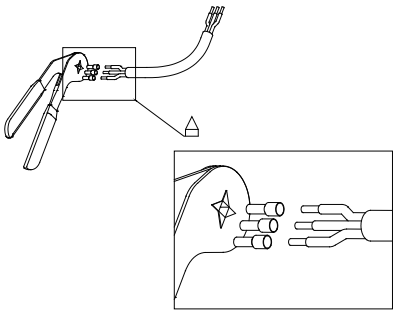
Please Note: These instructions are only applicable when using APEX-SPOST

Installation - Electrical Connection 7KW

Electrical Connection

Step 1: Insert mains cable into the gland.
Step 2: Open the side cover, insert the cable and tighten the gland.
Step 3: Unscrew the terminal screws. Terminate cables, and replace the side cover.

1



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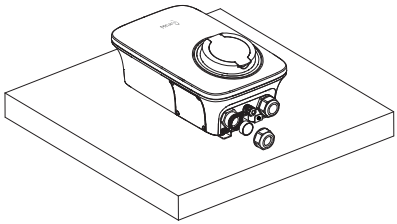

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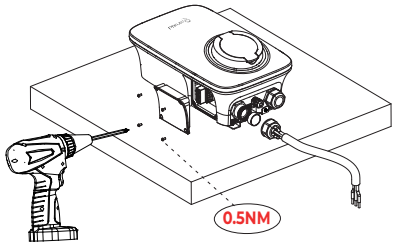

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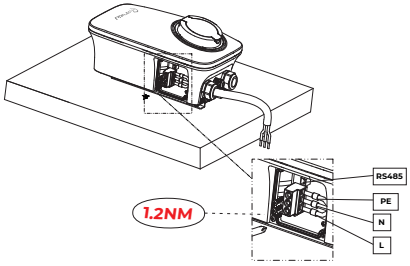
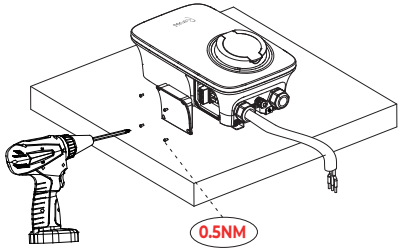


Note: this unit should be supplied by a 32amp Type A protective device, and/or the installation should comply with all local regulations.

It is recommended to use 7-9 AWG (wire diameter 6-10mm²) cable. Trim all cables to 50mm (as shown in figure) and peel off the insulation sheath to expose the conductor by about 10mm.

5



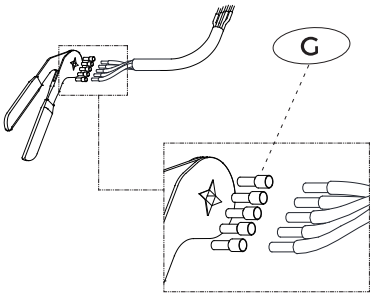
Note: Please refer to the local cable model and color during actual installation.

Installation - Electrical Connection 22KW

Electrical Connection

Step 1: Crimp the tubular terminal (G) and cable with crimping plier
Step 2: Unscrew the gland nut and puncture the wire-through hole.
Step 3: Open the side cover, insert the cable and tighten the gland.
Step 4: Unscrew the terminal screws. Terminate cables, and replace the side cover.

1



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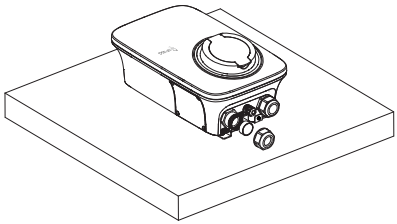

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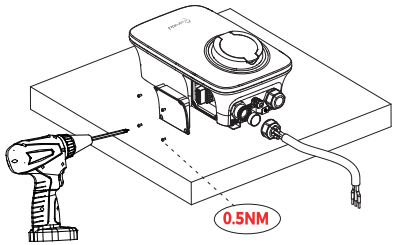

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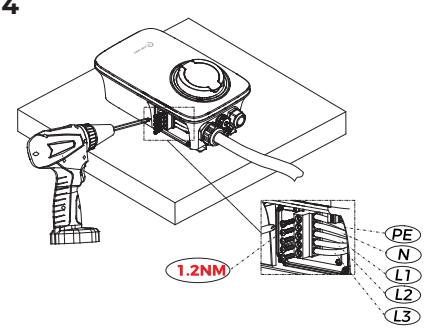
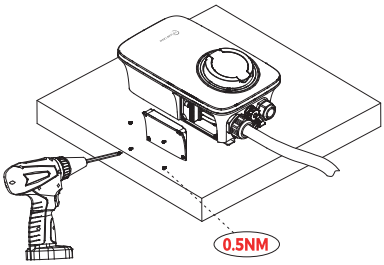


Note: this unit should be supplied by a 32amp Type A protective device, and/or the installation should comply with all local regulations.

It is recommended to use 7-9 AWG (wire diameter 6-10mm²) cable. Trim all cables to 50mm (as shown in figure) and peel off the insulation sheath to expose the conductor by about 10mm.

5

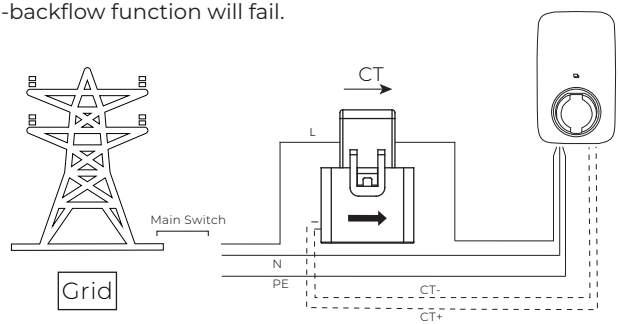


Note: Please refer to the local cable model and color during actual installation.

Installation - CT Connection (Optional)
Only Supplied in APEX-7S-X

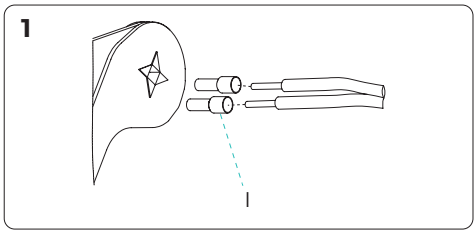
CT sensor connections (optional)

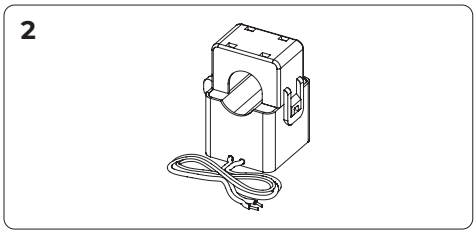
The CT should be clamped on the main live line of the grid side. The arrow on the CT should be pointing away from the grid. If the CT is fitted in the wrong orientation, anti-backflow function will fail.

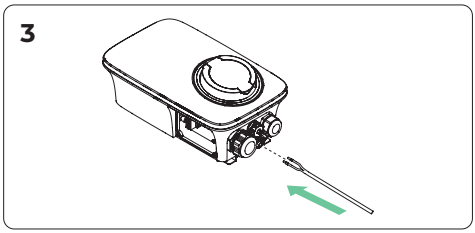


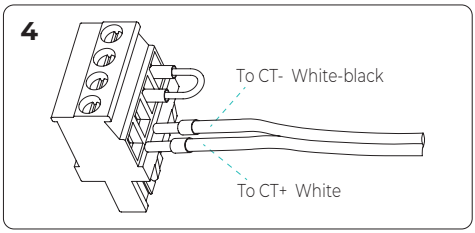
Note: The availability of network connectivity is dependent on the model variant.

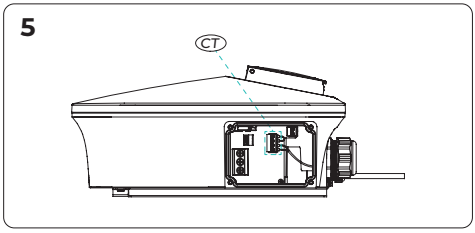
1. Use crimping pliers to crimp the tubular terminal (I) and cable.
2. Take out the CT Sensor.
3. Install the communication cable from the communication port.
4. Install the cable into the signal terminal, tighten the screw and compress the tubular terminal.
5. Fix the male and female ends of the signal terminal by connecting them.











Installation - Meter Connection (Optional)

If you have an early-generation unit that comes with a meter, the meter must be installed in order to use the load balancing or solar features described below.

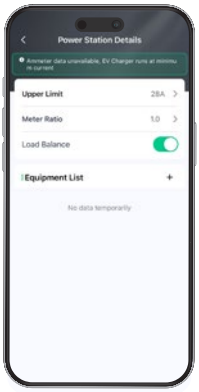
CT CLAMP CLOSE UP

CT clamp for solar or load balancing gets installed around the live cable from the main fuse. The arrow points to the flow of electricity, and when solar is producing, the CT clamp registers this as a minus figure. This is how the charger knows the difference between mains and solar.

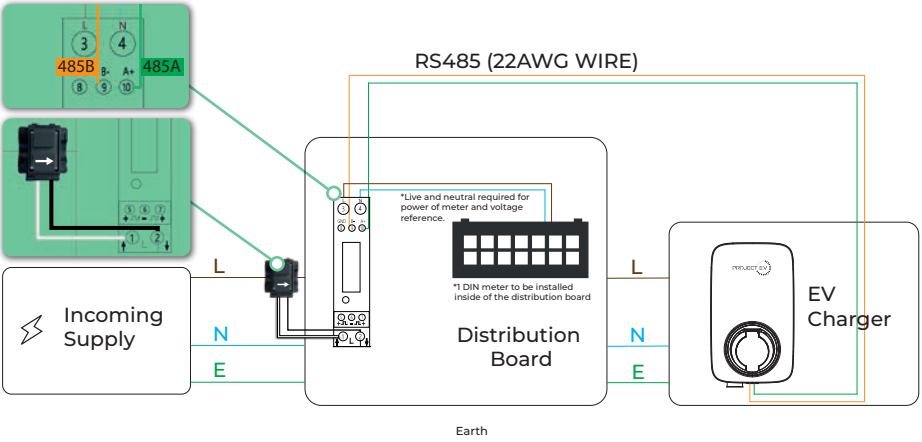
METER DATASHEET

Please Note:

- **There is a fly lead of 3m.**
- **If this is not installed correctly the charger will not see solar generation.**
- **Terminals (located on charger): RS485A and RS485B**
- **This needs to match with numbers 9 and 10 on the meter**



Set upper limit to required value



Please note: The black and white cables for the CT Clamp must be connected as shown in the diagram to ensure accurate readings.

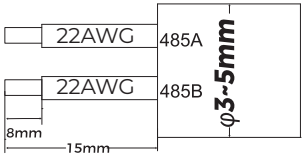
Continue...

Installation - Meter Connection (Optional)

Electrical Connection - RS485 (22AWG Wire Recommended)

Step 1: Trim all cables (wire diameter 0.3mm²) to 15mm (as shown in the figure), peel off the insulation sheath to expose the conductor by about 8mm.
Step 2: Crimp the tubular terminal (H) and cable with a crimping plier.
Step 3: Open the side cover. Install the communication cable.
Step 4: Install the cable into the signal terminal, tighten the screw and compress the tubular terminal.
Step 5: Fix the male and female ends of the signal terminal by connecting them.
and replace side cover.

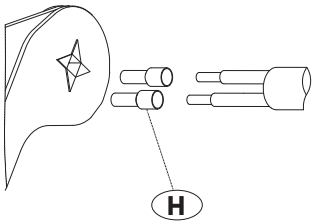
1



485A: Brown/Red/Green or Yellow wire

485B: Blue/Black wire

2



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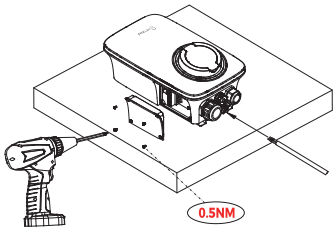
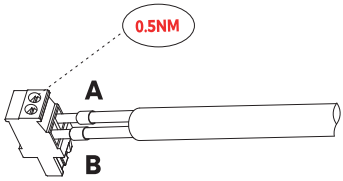


4



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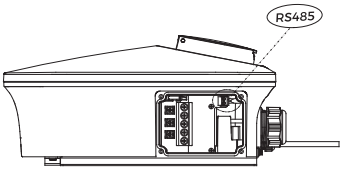

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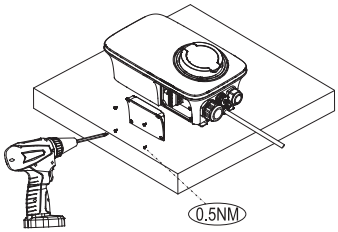


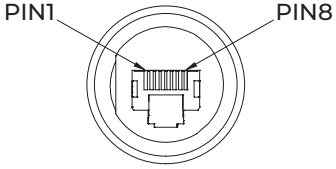
Note: please refer to the local cable model and color during actual installation

Installation - Network Connection - LAN

Network connection (optional)

- For Ethernet:

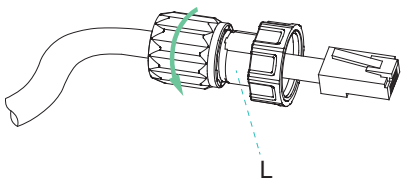
The network cable interfaces of the charging pile are as follows:



PIN	1	2	3	4	5	6	7	8
Color	White/Orange	Orange	White/Green	Blue	White/Blue	Green	White/Brown	Brown

1. Pass the network cable through connector (L) and connect the network cable to the RJ45 connector.
2. Unscrew the dust cover. Insert the RJ45 communication connector on which the network cable is installed into the Ethernet port.
3. Tighten the connector nut to complete the installation.

1



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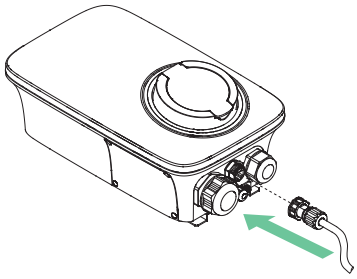

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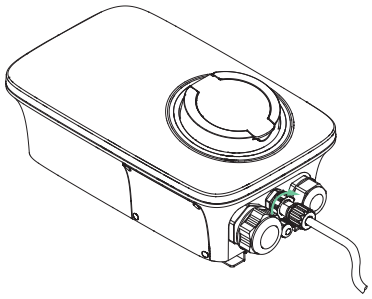


Note: Please refer to the local regulations on the cable model and color during installation.

The availability of network connectivity is dependent on the model variant.

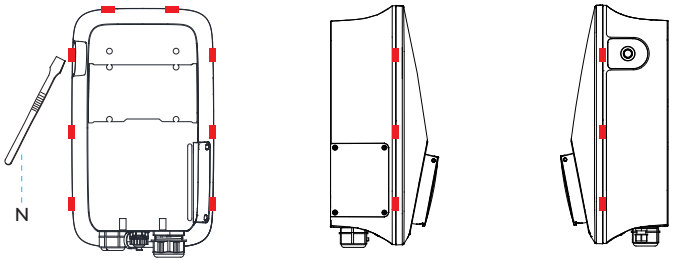
Installation - Network Connection - 4G

- For 4G:

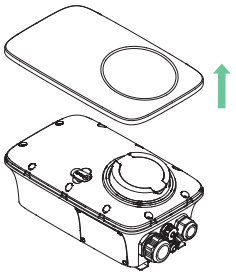
1. Using a Front Cover Removal Tool(N), push in the tabs connecting the face cover to the charging unit. There are 10 tabs in total, located in the positions marked in the following picture.
2. Open the face cover.
3. Open the SIM card cover and insert the SIM card (When inserting the SIM Card, please make sure the direction must be the same as the picture shown below).
4. Close the SIM card cover, install the face cover, and complete the installation.

***The availability of network connectivity is dependent on the model variant.**
***Access PointName (APN) will be required for the specific Sim Card.**

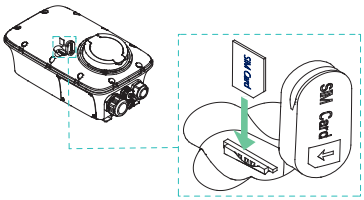
1



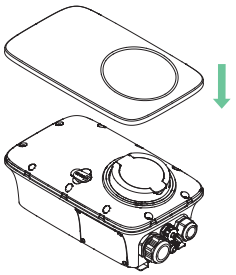
2



3



4

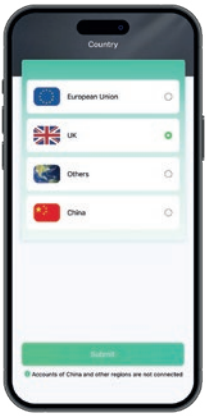


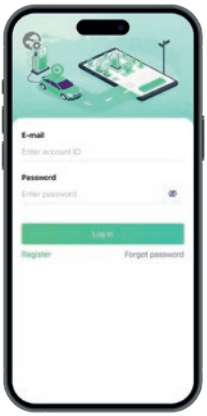
The APEX App

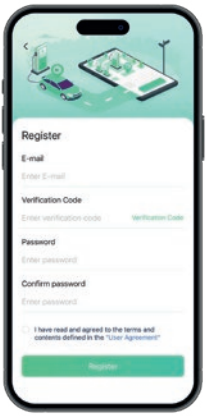
Download the APEX app from the Google Play or Apple app store.

Registering an account

1. Select the country where you would like the account registered to.
2. Press Register to enter registration page.
3. Fill in all details provided, and enter verification code sent to your email address.

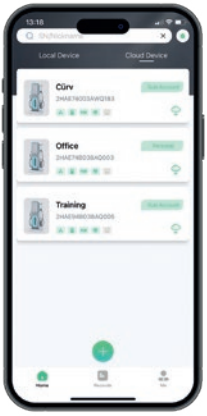






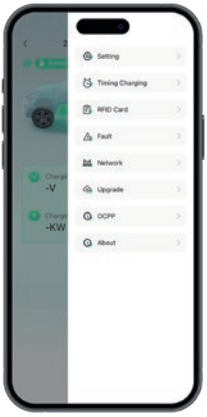
Adding a chargepoint

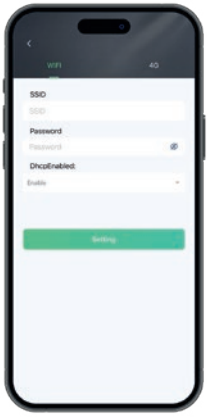
1. Click on the add button, and scan the QR code or enter the serial number located on the side of the chargepoint. Enter a nickname for the chargepoint. Your charger will then appear on the screen as shown below.

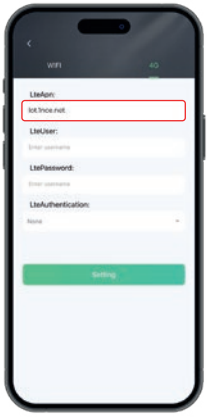


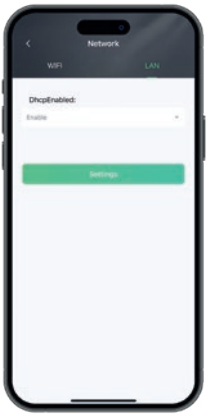
Adding the charge point to a network

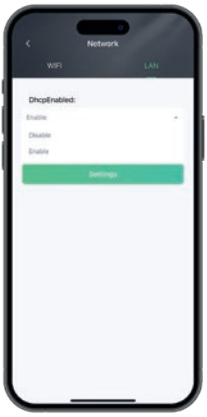
1. Click on the three dots in the right corner of the screen.
2. On the drop down menu, click on network.
3. Choose either WIFI, 4G or LAN depending on which unit chosen and enter details.
4. For WIFI, please enter your WIFI name and password and press Settings to save and return to the settings menu
5. Access Point Name (APN) will be Iot.1nce.net if you are using a Project EV purchased Sim Card.
6. For LAN, either leave DHCP enabled and press settings or change to manual and enter your custom configurations as listed and press Settings to save and return to the settings menu
7. The charger will now be connected to a network.

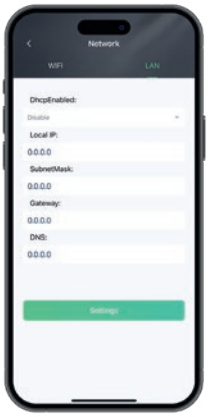










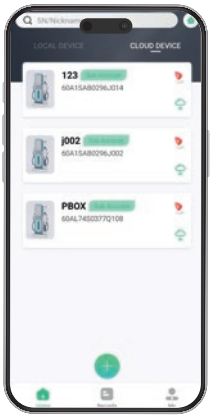


The APEX App - Anti Tamper Switch

Anti Tamper Switch

In December 2022, regulations were enforced for all chargepoints to be installed with an anti-tamper switch for security measures. If the side door of the unit is not secured properly, the anti-tamper sitch will remain active. Please make sure the side door of the unit is securely shut, after the installation process is complete.

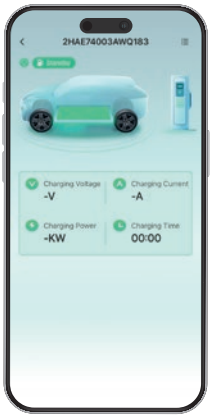
If fault persists, please contact technical@projectev.co.uk

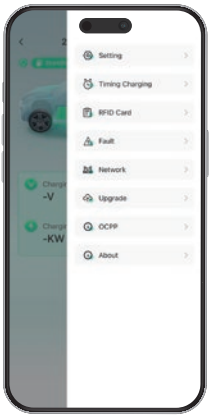


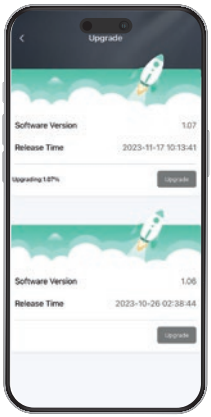
The APEX App - Upgrading

Upgrading Firmware

1. Click on the three dots in the right corner of the screen.
2. On the drop down menu, click on upgrade.
3. Select the firmware you want to upgrade to.







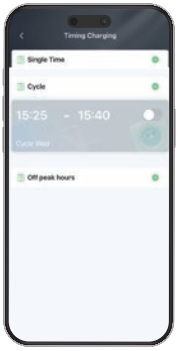
The APEX App - Scheduling

Scheduling a charge

1. Click on the three dots in the right corner of the screen.
2. On the drop down menu, click on settings.
3. Press Timing Charging.
4. For a one time schedule, press add single and enter the scheduled charge time.
5. For a regular cycle, press add cycle and choose the days and times of the scheduled charge times.

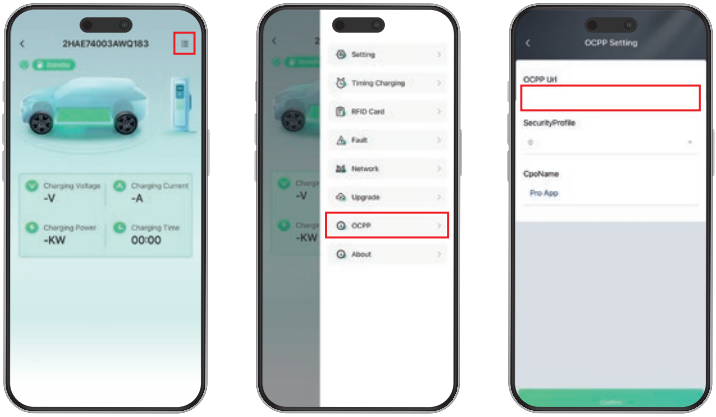
Off-Peak Random Start Function

When a user add a schedule to the app, the app will randomly add 0-10 minutes to the start time set by the user. The charging post then randomises another 0-59 seconds on to the start.



OCPP Setting

1. Click on the three dots in the right corner of the screen.
2. On the drop down menu, click on OCPP.
3. Enter the back-office URL.

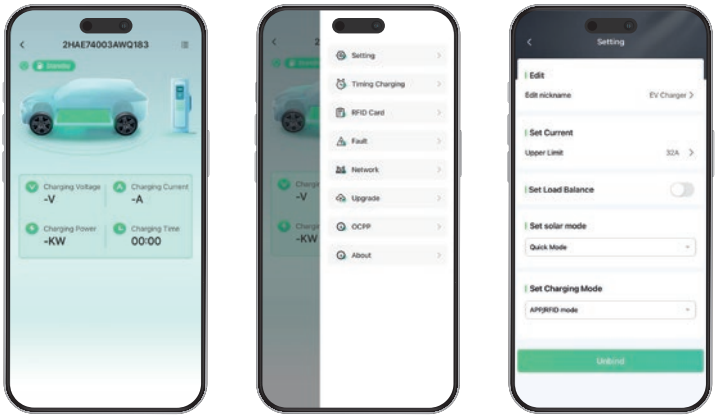


Please note: If URL removed, it will be redirected back to default URL automatically.

The APEX App - Setting

Accessing the setting menu

1. Click on the three dots in the right corner of the screen.
2. On the drop down menu, click on setting.
3. Adjust all settings required.

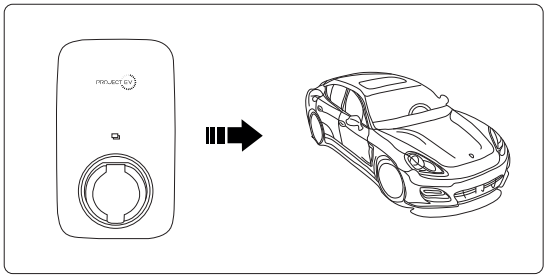


Charging Mode and Operation

Users can set three charging modes through the charging mode setting interface of the APP: controlled, locked, plug and charge.

A. Plug & Charge

Charging will start automatically after EV plugged in. If you want to stop the charging, just press the stop button on the side of the charger.



• Start Charging:

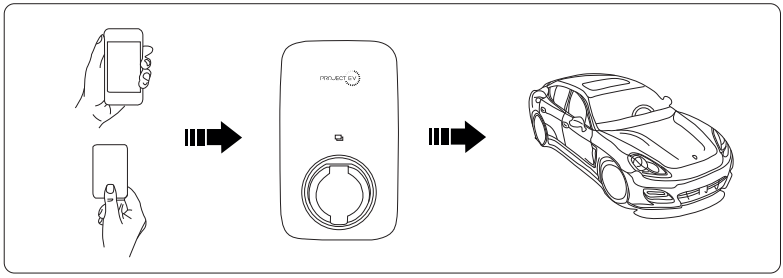
1. Set the charger to the Plug and Charge mode
2. Insert the charging plug into the EV
3. Charging session started

• Stop Charging:

Press the stop button on the side of the charger.

B. RFID

Initiate or cease charging by using APP or by swiping RFID card on this mode. You can also use APP for Reservations.



The controlled mode with RFID card

• Start Charging:

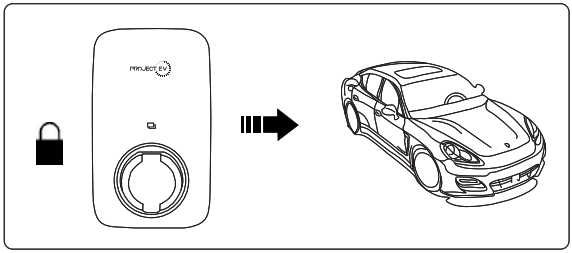
1. Set the charger to the Controlled mode
2. Insert the charging plug into the EV
3. Swipe card
4. Waiting for authorizing
5. Charging session started

• **Stop Charging:**
1. Swipe card
2. Charging session end

C. App Mode
• **Start Charging:**
1.Set the charger to the Controlled mode
2. Insert the charging plug into the EV
3. Click to Start the Charge on the APP
4. Waiting for authorizing
5. Charging session started

• **Stop Charging:**
1. Click to Stop the Charge on the APP
2. Charging session end

D. Locked Mode
On this mode, the charger is locked and cannot be used.



Charging Status Indicators

LED Indicator Description	Definition
Green Flashing	Device Available
Blue Steady	EV Connected - User not authorised
Blue Flashing	Authorised - Wait for charging
Blue Rotating Light	Charging
Blue Flashing	Charging Suspension
Green Steady	Charging Finish - Wait for Unplug
Yellow Steady	Charging Locking
Red Steady	Device Fault

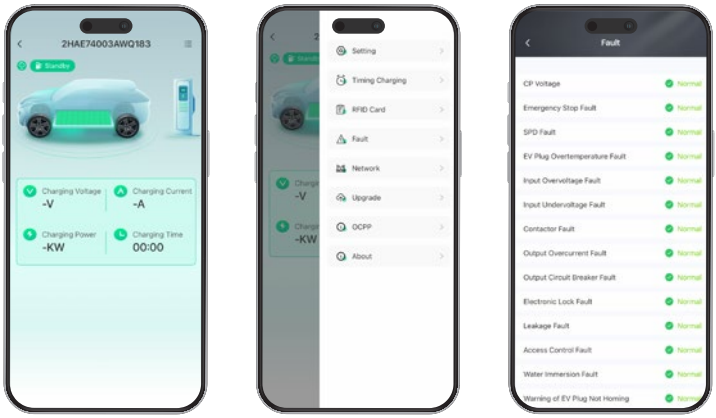
Troubleshooting

If fault occurs, users can check the fault information on the APP.

Fault Code on App	Solution
Electronic Lock Fault	Set the electronic lock status to the correct position. Or seek help from us.
Emergency stop fault	Reset the emergency stop button. Or seek help from us.
Abnormal CP voltage	Seek help from us.
Abnormal AC output contactor	Seek help from us.
Over current	Reduce output current. Or seek help from us.
Over voltage	Wait for the grid voltage to return to normal. Or seek help from us.
Undervoltage	Wait for the grid voltage to return to normal. Or seek help from us.
Electric leakage	Seek help from us.
Reverse connection of lin N	Correctly connect P and N lines. Or seek help from us.
Anti Tamper Switch	Wait for the anti tamper switch to return to normal. Or seek help from us.
Over temperature of charging interface	Wait for the temperature of charging interface to return to normal. Or seek help from us.

Finding a Fault

1. Click on the three dots in the right corner of the screen.
2. On the drop down menu, click on faults.
3. Check the faults list to find out which fault is happening.



Dynamic Load Balancing

Set Up Dynamic Load Balancing for Commercial Use – APEX Series.

Scan the QR code to read the Dynamice Load Balancing Instruction Manual

Warranty

Limited Warranty Policy – APEX Series

i. Scope of Warranty

Plese see www.projectev.co.uk for warranty information.

enquiries@projectev.co.uk
0333 733 0333

www.projectev.co.uk