



Technical Primer

Aurora 11kW



Aurora

Technical Primer

Congratulations with your new Aurora charging station for electric vehicles, and thank you for your purchase.

To ensure a safe installation process and to fully utilize all advanced features of your new system, we advise you to read this manual carefully. Properly store this manual for future usage.

We have invested a great amount of care to provide you with a complete and comprehensible manual. As we continue to modify and further improve its contents, please refer to the following link to download the most recent version: <http://www.starcharge.com>

Contents

1 Copyright and Disclaimer	5
1.1 Disclaimer	5
1.2 Copyright	5
1.3 Warranty	5
2 Safety and Usage instructions	6
2.1 General safety	6
2.2 Summary of safety symbols on the equipment	6
3 Technical Data about the Product	7
3.1 Technical Specifications	7
3.1.1 Mains Supply Parameters	7
3.1.2 Output of the Charger / Connecting to the EV	8
3.1.3 Protection features and integrated components for Safety	8
3.1.4 Charging and access	8
3.1.5 Operating conditions and Physical aspects	9
3.1.6 Accesories	9
3.2 Appearance Overview - Case B type	10
3.3 Appearance Overview - Case C type	10
3.4 LED status Indications	11
4 Installing and Connecting the Charger	12
4.1 Package content	12
4.2 Installations site requirements	12
4.3 Tools and equipment required to install the Aurora	13
4.4 Wall Mounting	13
4.4.1 Wall Mounted Installation Steps	13
4.5 Cement Foundation requirements for mounting the metal pedestal	15
4.5.1 Installation distance of parking space for column type single pile or double pile installation	15
4.5.2 Coulmn Installation steps	15
5 Commissioning the charging pile	17
5.1 Safety instructions before commissioning	17
5.2 Wiring steps before commissioning	17
5.3 Debugging	18
5.3.1 Establishing connection	18
5.3.2 Using third party back-end	18
6 Instructions for Charging	19
6.1 Summary of charging operation	19
6.1.1 RFID-charging station with user authorization	19
6.1.2 Swiping card to start and stop charging	19
6.1.3 Scanning QR code for user authorization	20
6.1.4 Scanning QR Code to start and stop charging	20
6.2 Indicator Description	21
7 Maintenance	22
7.1 Routine Maintenance	22
7.2 Charging control logic	22
7.2.1 Logic of Building-blocks	22
7.2.2 Typical control pilot circuit	23
8 Common troubleshooting examples	24
8.1 The Charger cannot be powered ON	24
8.2 The charger is connected to the vehicle but charging doesn't get recognized by the EV	25
8.3 Input Overvoltage/Undervoltage is observed	26
8.4 Earth fault observed	26
8.5 Not fully charged, report that the battery is full or the connection is unsuccessful	27

1 Copyright and Disclaimer

1.1 Disclaimer

- This document has been subject to rigorous technical review before being published. It will subsequently be revised at regular intervals. Any modifications or amendments will be included in the future. Content of this document is compiled for information purposes only.
- Although StarCharge has put its best efforts to keep the document as precise and up-to-date, StarCharge shall not assume any liability for defects and damage which may result from the use of information contained herein.
- In no event will StarCharge be liable for direct, indirect, special, or consequential damages (incl. loss of profits) resulting from any errors or omissions in this manual. All obligations of StarCharge are stated in the relevant contractual agreements. StarCharge reserves the right to revise this document from time to time.
- Any deviation to the products including, but not limited to, customer-specific modifications (like placing stickers, SIM cards or the usage of different colours), hereafter referred to as 'Customization', can alter the final product's user experience, appearance, quality and/or lifespan.
- StarCharge is not liable for any damage to or caused by the product Customization is the main cause.
- Contact your dealer for more information on Customization versus the default product.

1.2 Copyright

All rights reserved. The disclosure, duplication, distribution and editing of this document, or utilization and communication of the content are not permitted, unless authorized in writing. All rights, including rights created by patent grant or registration of a utility model or a design, are reserved.

1.3 Warranty

StarCharge shall not be liable in any way for damage. All warranties on both the product and accessories shall become void under the following circumstances:

- The ambient temperatures during are below -30°C or above 50°C .
- The products have been installed wrong, subject to misuse or badly maintained.
- The instructions in manuals associated with operation and maintenance for the products(or parts provided at the time of purchase) of the device have not complied.
- The products are used in the vicinity of explosive, highly flammable substances or in or near water.
- There is a failure of the distribution network.

Attention

Extensive safety information is available in the relevant sections of this document. The safety instructions are intended to ensure proper practical usage. If the user does not comply with these safety regulations and instructions, the user may expose herself/himself to the risk of electric shock, fire and/or severe injuries.





2 Safety and Usage instructions

2.1 General safety

StarCharge equipment is intended exclusively for charging Electric Vehicles (EV). To ensure proper usage of the charging station, the instructions in this manual must always be complied with. Installing, Commissioning, and Maintaining this equipment may only be performed by a qualified electrician (*StarCharge certified partner*). Using this product is prohibited in the following situations

- Near explosive or Highly flammable substances.
- If the product is in or close to water sources.
- If the product as a whole or individual components of the product are visibly damaged.
- Usage by children or individuals not properly able to assess the risks associated with using this product.

2.2 Summary of safety symbols on the equipment

Symbols	Meaning
	“Warning”, which indicates a hazard. Pay attention to personal injuries or death caused by operation steps, practice or incorrect implementation. The operation after the "warning" sign can only be performed when the conditions are fully understood and satisfied.
	“Caution”, which indicates a hazard. Pay attention to the damaged or destroyed product caused by the operation steps, experiments or incorrect execution. Only after fully understanding and satisfying the indicated conditions, the operation after the “caution” mark can be performed
	"Hint", which indicates skill or useful information. Skills and useful information are marked as “Hint”. It does not contain information that warns of dangerous or harmful features.
	"Garbage disposal", which indicates electrical and electronic waste. This symbol is located on the product, in the instruction manual or on the packaging, indicating that the electrical and electronic equipment and its Materials can be reused based on their markings. By reusing old equipment materials and other forms of reuse, you can make a significant contribution to the environment

3 Technical Data about the Product

- Suitable for all vehicles complying with IEC 62196-2.
- Configurable Output power setting possibility
- MID certified meter for verifiable output power measurements
- Charge via scanning QR Code and RFID swiping card.
- The charger supports the OCPP 1.6J communication protocol i.e., the charger can communicate to the data service platform and management platform (Cloud platform) of OCPP 1.6J.
- The charger can work normally when used in an outdoor environment IP55(Case C) and IP54(Case B), IK10..
- The device has the following protection feature
 - Lightning protection
 - Overload protection
 - Leakage protection
 - Over-voltage protection
 - Under-voltage protection
 - PE (Protective Earth) detection.

3.1 Technical Specifications

3.1.1 Mains Supply Parameters

Recommended cable diameters at the input (Minimum)	UL-AWM1015 9AWG (outside diameter 13 mm-15 mm)
Nominal line input voltage	400V AC (+/- 10%)
Limits of input power	3-phase: 16 A max per phase
Nominal frequency	50/60 Hz
Connection terminals	Pin terminal:E6012-BLACK,KST*3 Round terminal:RVL5-4,KST*3 Ground terminal:AVK16RD*1
Grounding	TN system (PE wire) TT system (independently installed ground electrode)
Main MCB	400 V AC, 40A, 50/60 Hz, Tripping characteristics C
Stand-by consumption	Less than 10W

3.1.2 Output of the Charger / Connecting to the EV

Vehicle connection	1 x type 2 socket, compliant with IEC62196-2 1 x type 2 connector, compliant with IEC62196-2
Output voltage	400V AC
Maximum Charging Current	16A per phase
Maximum Output Power	11kW

3.1.3 Protection features and integrated components for Safety

Residual current protection	Type A 30mA DC current detection 6mA
Energy meter	MID certified
Power switching relay	Integrated, Simultaneous activation
Overcurrent protection	Integrated in firmware; shutdown at: 110% after 100 seconds. 125% Immediately

Attention

Your installation must comply with the standards and regulations of the region where it is located. The tables are advisory and based on proper practical functioning of the charging stations, provided that all prerequisites are satisfied.

3.1.4 Charging and access

Controllers	Central unit for sockets/connectors and communication
Communication with vehicle	LED light
Card reader	RFID (NFC) ISO/IEC 14443A/B, MIFARE 13,56 MHz, DESFire.
Internet / Networking capabilities	4G/ Ethernet/ Wi-Fi
Communication protocol	OCPP 1.6 (JSON)

3.1.5 Operating conditions and Physical aspects

Operating temperature	-30°C to +50°C (Naturally Cooled)
Relative humidity	5%-95% (No condensation)
Electrical safety class	I
Protection rating	IP55(Case C) and IP54(Case B)
Mechanical Impact	IK10

3.1.6 Accesories

Mounting post	AJGSMP1970
Dimensions (H x W x D)	1650 x 320 x 120 mm
Material	SUS304 stainless steel Electrostatic powder spraying Outdoor polyester powder coating High weather resistance PC material
Color	Silver and Black
Packaging (H x W x D)	409 x 282 x 148 mm
Weight	Approx. 5.6 k.g.
Additional RFID card	StarCharge card

Notice

If temperature exceeds the maximum values, the charging station will automatically activate Over Temperature Protection (OTP) measures.

3.2 Appearance Overview - Case B type

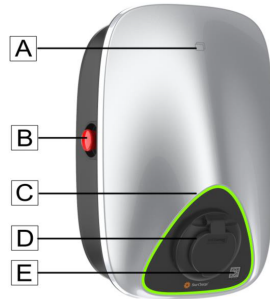


Figure 1: Aurora - Case B type

- | | |
|--|--|
| A. Swiping card area to Start/Stop charging | C. LED status indicator |
| B. Emergency stop button - To stop ongoing session immediately | D. Charging connector socket |
| | E. QR code location for authentication |

3.3 Appearance Overview - Case C type

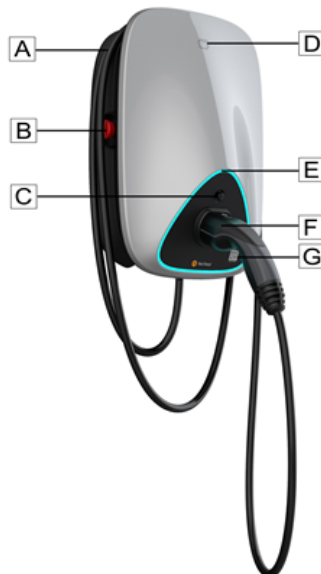


Figure 2: Aurora Case C type

- | | |
|--|---|
| A. Cable winding trough | D. Swiping card area to Start/Stop charging |
| B. Emergency stop button - To stop ongoing session immediately | E. LED Status Indicator |
| C. Charge connector unlock button | F. Position of the charging connector and cable winding bracket |
| | G. QR code location for authentication |

3.4 LED status Indications

The Aurora is equipped with a color LEDs to visualize the status of the charging station.

LED status indicator

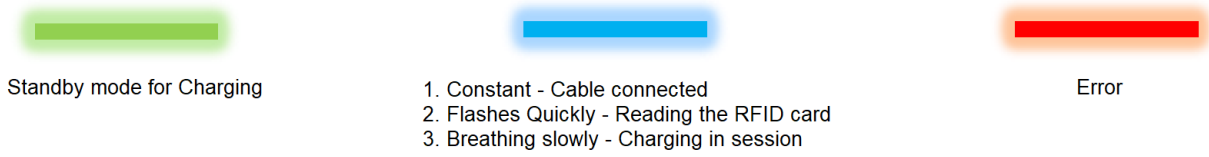


Figure 3: LED status indicator

4 Installing and Connecting the Charger

4.1 Package content

Content of the package of the charging station consists of

- Aurora Charger
- Installation manual
- Wall mounting block and assembly accessories
- 2 RFID charge cards (depending on the selected options)

4.2 Installations site requirements

While selecting a location to install the Aurora, the following criteria must be taken into account:

- The charger should not be installed close to dangerous and explosive locations. E.g Water Sources, Gas and Steam pipes.
- The installation location should be convenient for charging. While installing the charger, wiring length should be shortened as the cable resistance reduces and the power loss through the wire reduces as a consequence.
- The installation position of the charging pile should not be set at a place where the terrain is low. The installation should be vertical and the center of gravity be adequate to prevent tipping or tilting. The charger should not be placed in an environment subject to severe vibrations or high temperature.
N.B. - The recommended installation height is 70 to 120cm from the ground to the bottom side of the casing. The installation site must have a levelled and solid underground.
- The wall-mounted charging pile must be connected to the wall at least two points. The wall should withstand the weight of the charging pile and its accessories. The wall and internal lines should not be too close.
- The indoor installation protection level should be at-least IP32, and the outdoor IP54. It is recommended that the charger be installed in an environment with a sunshade.
- The charging cable (approx. 5-meter length) must not be under tension while connected to the vehicle.
- Space should be reserved for the engineering personnel to open the back plate of the equipment for inspection and maintenance. Ensure that the grounding of the charger is properly connected and inspected.
- It is recommended that customers install a circuit breaker in front of the charging pile. The miniature circuit breaker (MCB) needs to meet local regulations.
- Prevent road users from being able to drive over the cable and pedestrians from being able to trip over cables.
- Ensure that the UTP/Ethernet connection on the bottom side of the charging station is covered to prevent it from being unintentionally disconnected or used by unauthorized individuals.
- Always fully comply with local technical requirements and safety regulations and the following ambient conditions needs to be maintained.
 - Maximum atmospheric humidity of 95%
 - Ambient temperature of -30°C to 50°C.

4.3 Tools and equipment required to install the Aurora

- Line pressing pliers
- Impact drill
- Phillips screwdriver
- Screwdriver for a terminal block
- Pencil and the enclosed drill template
- Paper knife.
- Allen wrench
- Tape measure
- Tool hammer
- Expansion screws
- Mounting screws

4.4 Wall Mounting

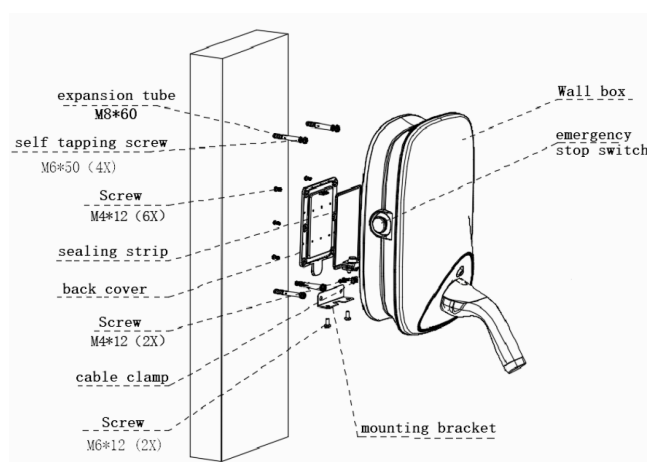
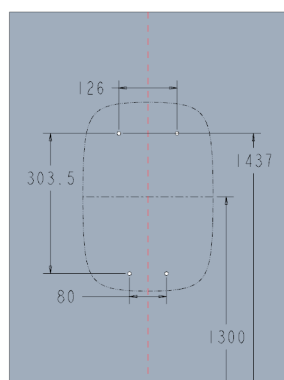


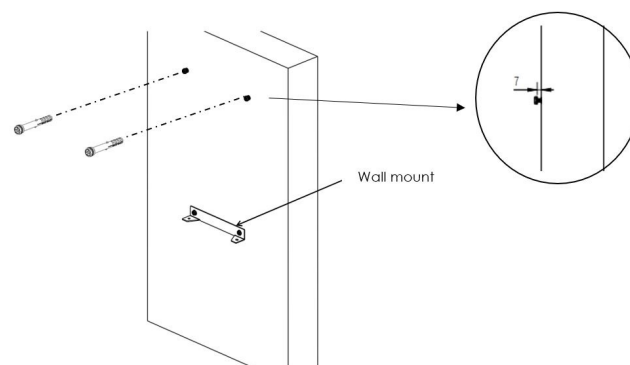
Figure 4: Mounting Aurora on the wall

4.4.1 Wall Mounted Installation Steps

1. Take the drill template from the carton packaging.



(a) Marking the drill holes



(b) Fixing the Mounting Block attachment on the wall

Figure 5: Readying the wall

2. Place the drill template at the desired location.
3. Use a spirit level to verify that the template is applied levelled.

4. Use the drill template to mark the drill holes.
5. Drill the holes at the marked points.
6. Verify the drill holes (Figure 5a).

Remark

Chargers use a same installation method between charger with charging cable (Case C) and with socket (Case B).

7. Thread the incoming cable through the large hole in the center of the rubber plug of the cable, compress the terminal, and fasten it to the wiring connector with a screw (torque 1.8 Nm, there is a wiring comparison table in the shell). The 11kW charger is connected with 5 entry cables. (Figure 6)

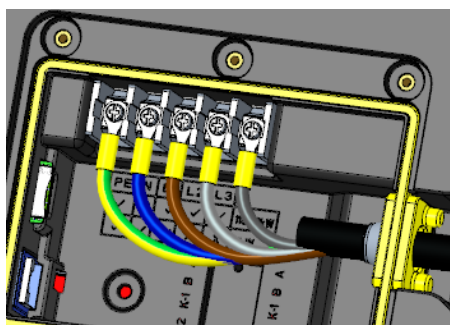


Figure 6: 11kW wiring diagram

8. Use a drill bit for the wall to open 4 holes with a depth of 70mm.
 - Install an expansion tube and use two M6 self-tapping screws to fasten the wall mount to the two holes under the wall .
 - Directly tighten the two holes on the top.
 - Insert two M6 self-tapping screws. Note that the screw head protruding height is 7mm. (Figure 5b)
9. Use six M4*12 screws to tighten the wiring compartment cover and two M4*12 screws to tighten the crimping ferrule. Note that there are two positions for the crimping ferrule depending on the thickness of the incoming cable
10. Install the pile from top to bottom, hang the pile on two expansion screws above, and then fix the bottom of the pile on the wall hanging parts with two M6 hexagonal head pattern screws. (Figure 7)

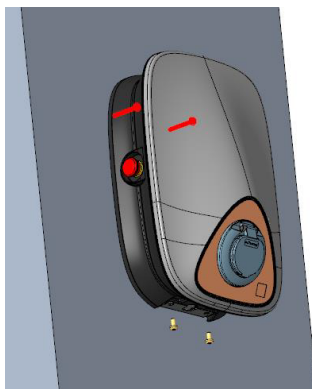


Figure 7: Fixing the pile on the wall

4.5 Cement Foundation requirements for mounting the metal pedestal

4.5.1 Installation distance of parking space for column type single pile or double pile installation

When the Column-type Single pile or Double pile is installed in a single parking space or back-to-back parking space, it is recommended that the linear distance between the vehicle block and the Center of the charging pile is not less than 1200mm, as shown in Figure 8.

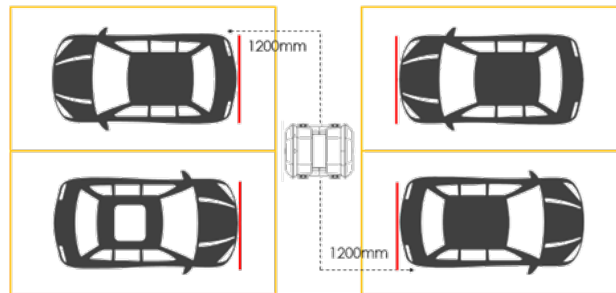


Figure 8: Installing at a parking place

4.5.2 Column Installation steps

1. To start off with Column installation, use concrete base or metal base. The general assembly scheme is shown in Figure 9a .

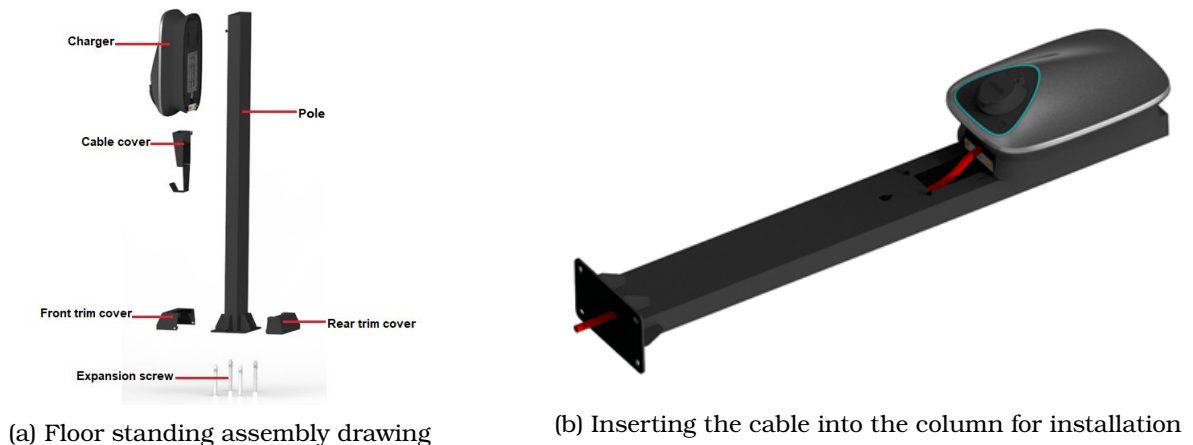


Figure 9: Installing the pedestal for Aurora

2. Lay the column horizontally and insert the wire from the bottom hole and exit from the middle hole. (Figure 9b)
3. After connecting the inlet line with the pile body, fix the pile body on the vertical column. First, use two cross M6*12 (Torque: 1.8 - 2.0 N.m) combination screws to fix the wall mount on the column.
4. Hang the pile on the column, screw in two pattern M6*12 (Torque: 1.8 - 2.0 N.m) combination screws at the bottom, as shown in Figure 10a.
5. Insert the hanger hook and guard cover into the mounting position and push them up, and then lock them from the front with two M4*12 pattern composite screws (Torque: 1.4 - 1.6 N.m) with column core head, as shown in Figure 10b.

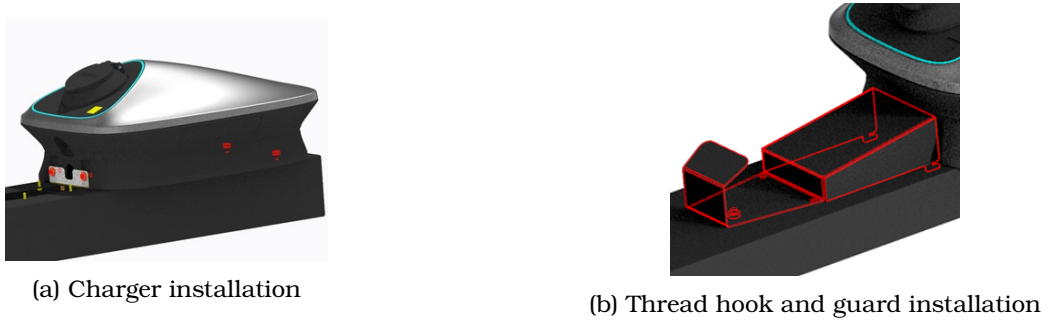


Figure 10: Pile settings for Aurora

6. Drill 4 holes with A diameter of 10mm and A depth of 150mm on the concrete floor, and the spacing between hole centers is 100mm x 200mm. Use four M10*120 expansion screws to install and tighten the charging pile posts, as shown in Figures 11a and Figure 11b.

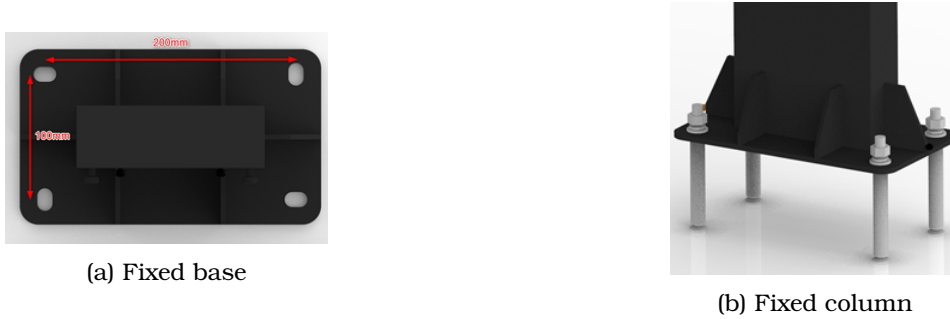


Figure 11: Pile settings for Aurora

7. Place the rear decorative cover on the bottom plate of the column. (Figure 12a)
8. Insert the front decorative cover into place from top to bottom and the back decorative cover, and fix both sides of the front decorative cover with two M4*12 flower-shaped composite screws (Torque: 1.4 - 1.6 N.m) with column core in Figure 12b.



Figure 12: Pile settings for Aurora

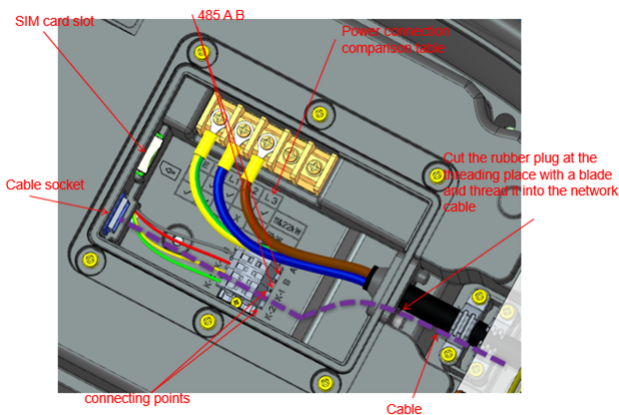
5 Commissioning the charging pile

5.1 Safety instructions before commissioning

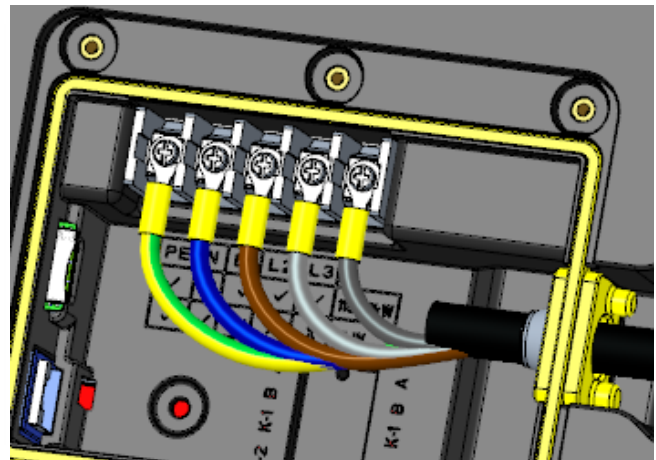
- Ensure that the charging pile is correctly connected to the power source according to the requirements of this manual.
- Ensure that the power distribution system is individually protected by appropriate circuit breakers (Residual Current Fuses).
- Ensure that the charging pile installation complies with this manual.
- Ensure that the enclosure is always closed during normal use.
- Check whether the charging cable is twisted and whether the cable, plug, and casing are intact.

5.2 Wiring steps before commissioning

- Unscrew the M4 hexagon socket countersunk head screw at the bottom. Remove the decorative cover and open the wiring window cover.
- Insert the SIM card supported by the local operator into the slot. (Figure 13a)



(a) SIM card slot



(b) Incoming wire connections

Figure 13: Making Connections

- The incoming wire passes through the metal waterproof joint at the bottom of the pile. (Figure 13b)
- Use six M4*12 screws to tighten the wiring compartment cover, and two M4*12 screws to tighten the crimping ferrule. Note that there are two positions for the crimping ferrule, depending on the thickness of the incoming cable. (Figure 14)

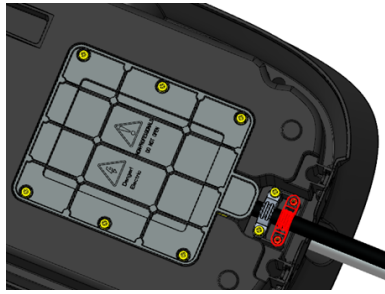


Figure 14: Install the wiring cover and the cable entry clamp

- Reinstall the wiring window cover and decorative cover to complete the installation.

Attention

If there is a gap between each part of the shell, it will affect the moisture-proof and water-proof function of the charging pile, and it is highly likely to affect the service life

5.3 Debugging

5.3.1 Establishing connection

To establish a wireless connection, the charging station must be equipped with a supported SIM card. Also, to connect to the backend, the correct settings must be configured.

5.3.2 Using third party back-end

If you use your own management system or the service is provided by a third party, please make sure that the charging pile type is registered correctly. If these settings are not properly configured in this management system, the charging pile will not be connected. After the correct registration of the back-end system is completed, the charging station can be easily connected.

Attention

The connection to the management system can only be established by arranging to start the service with the supplier. Services provided by third parties are not within the scope of StarCharge.

6 Instructions for Charging

The Charger's operation is divided into two parts,

- Charging connection from EVSE to EV through Type 2 cable.
- Starting and Ending the charging operation using authentication.

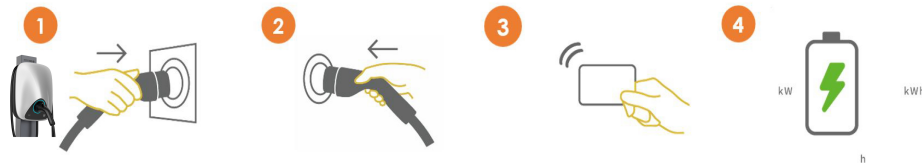
The user must first connect the charging device to the vehicle and then the LED light will turn from green in standby to blue after the connection is completed.

6.1 Summary of charging operation

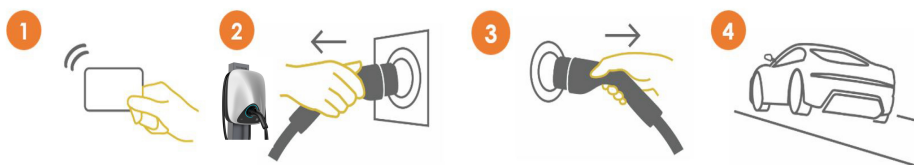
- Insert the charging connector into the vehicle and confirm that it is connected properly (Case B), the blue LED lights up means the charger is in connection status.
- When the brightness of the blue LED changes gradually, it means that the charging process has started.

6.1.1 RFID-charging station with user authorization

Starting the session



Ending the session



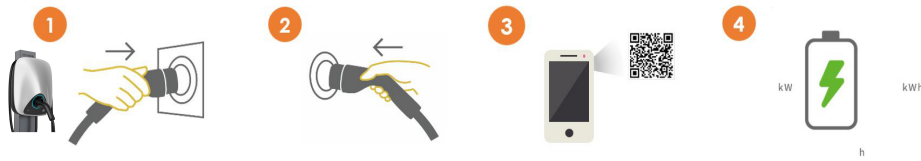
6.1.2 Swiping card to start and stop charging

Starting the Charging process

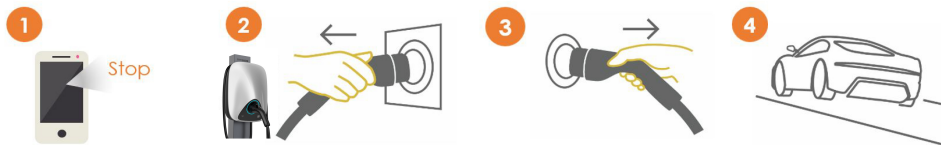
1. Placing the card above the RFID reader, the status light will flash blue if it has detected the card. Then the EVSE will do the authentication. If the authentication is successful, the status light will start pulsing blue, which means the charging process has begun.
2. Place the RFID card above the reader area; the indicator light will flash blue if the reader has detected the card. Then it will authenticate to stop. If the authentication is successful, the status light will turn green (free mode). The charging process will stop. If the startup by card swiping is not successful due to network reasons, please restart the card swiping process.
3. Pull out the connector from EV and EVSE, take out the cable, and place it gun holder. The charging session has concluded.

6.1.3 Scanning QR code for user authorization

Starting the session



Ending the session



6.1.4 Scanning QR Code to start and stop charging

Starting the Charging process

1. Open "Star Charge" or third-party app, click the QR code scan function and scan the QR code on the front of the Aurora, after successfully binded, click "Oneclick Charge" to start charging, as shown in Figure 15.

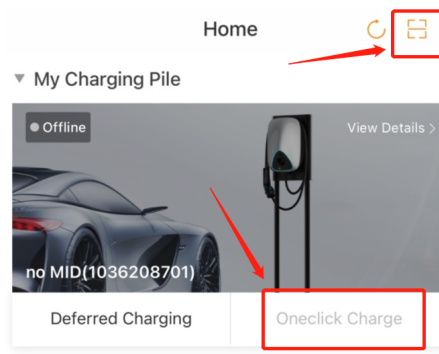


Figure 15: Mobile client interface

Stopping the Charging process

2. Open the StarCharge app or third-party app and click the "Stop" button to stop charging as shown in Figure 16. If successful, the status light will turn green to free mode and the charging process will stop.

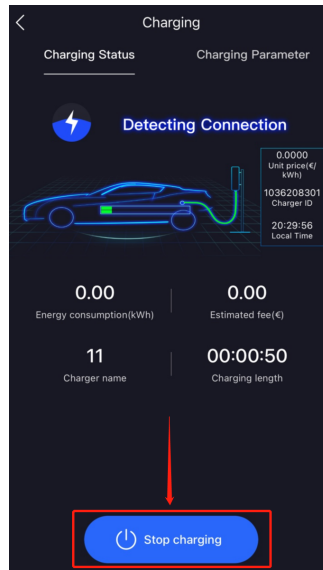


Figure 16: Stop interface

3. Pull out the connector from EV and EVSE, take out the cable, and place it back to the lock. The charging session has concluded.

6.2 Indicator Description

LED status indicator	Meaning
Constant Green	Standby
Constant Blue	Connecting
Pulsating Blue	RFID card verified
Breathing Blue	Charging
Pulsating Blue (Fast flash)	Swiping the RFID card detected
Pulsating Blue (Slow flash)	Pause in charging requested by the EV side
Constant Red	Fault

7 Maintenance

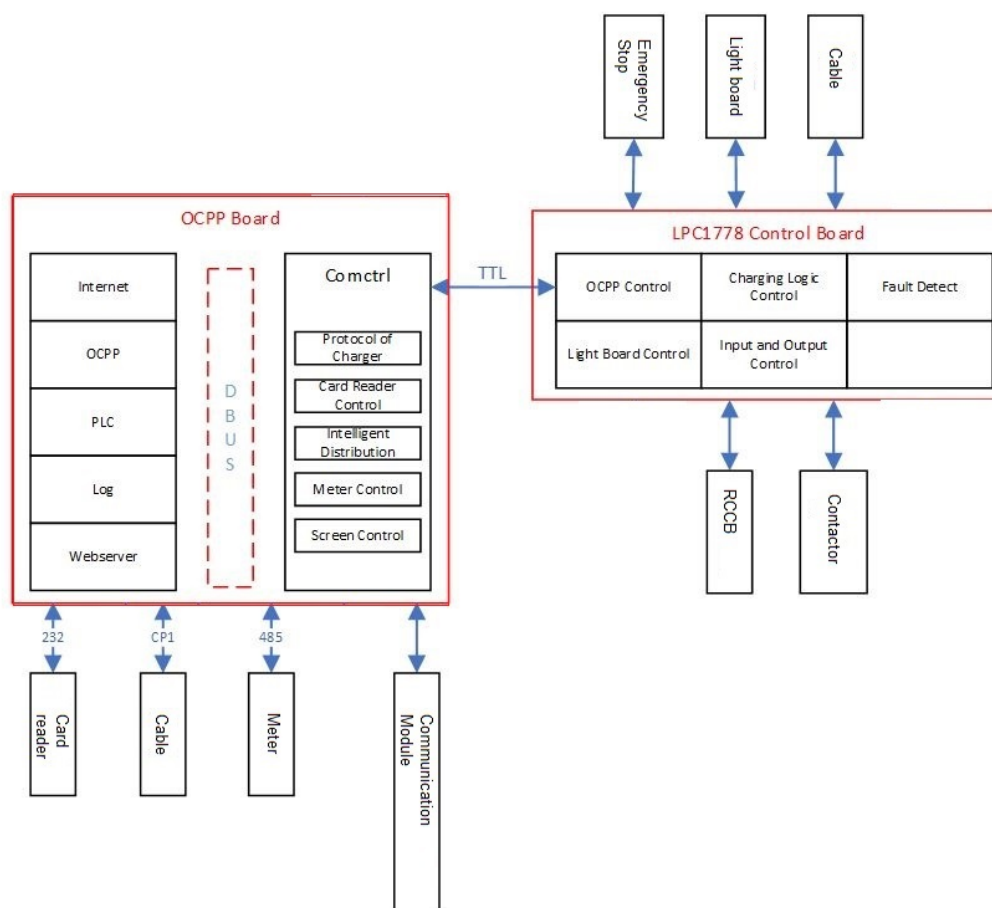
7.1 Routine Maintenance

The following table is the recommended maintenance cycle. According to the country where the charging equipment is installed and operated, the cycle needs to be changed. Please adhere to the relevant laws and regulations at the location.

Check Item	Cycle	Handling
Charging connector	Every month	Check
Leakage switch protection	Every month	Check
Emergency stop function check	Every month	Test
Dust inspection of control board	Every month	Check and Clear

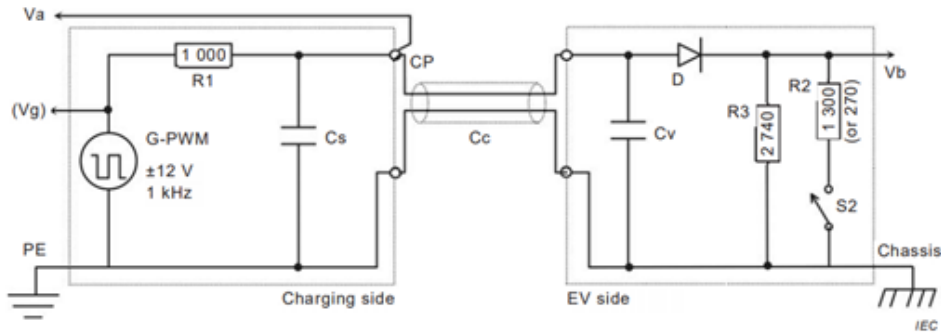
7.2 Charging control logic

7.2.1 Logic of Building-blocks



7.2.2 Typical control pilot circuit

A.2.2 Typical control pilot circuit



Key

- G-PWM PWM signal generator for pilot function
- Va Pilot wire voltage measured at EV supply equipment output
- Vg Internal voltage of PWM signal generator
- R1,Cs as defined in Table A.2
- R2,R3,Cv,D as defined in Table A.3
- Vb EV measurement of voltage, duty cycle and frequency
- CP control pilot contact
- Chassis vehicle chassis connection

NOTE The references of the components R2 and R3 have been interchanged with respect to IEC 61851-1:2010.

Timing	Action	Status	Explanation
1	Insert the charging connector	Va turns from 12V to 9V	EV is connected and Communication between EV and EVSE has not started
2	Send PWM wave	9V turns to 9V PWM	Communication has started between EV and EVSE
3	Vehicle response	S2 on	Relay is being closed
4	R2 equivalent resistance detected	9VPWM turns to 6VPWM	State charging is entered
5	Relay in the charger is on	Close K1, K2	Current delivery to EV has started
6	The battery is full and the vehicle asks to stop	S2 off	Relay is being opened, no more energy is being delivered to the EV
7	Disconnect detection R2 equivalent resistance	6VPWM turns to 9VPWM	Control Pilot (CP) voltage change to indicate charging state as been left
8	Stop sending PWM wave	9VPWM turns to 9V	Communication is stopped to the vehicle, EV is still plugged in
9	Pull out the charging connector	9V turns to 12V	EV is disconnected from EVSE

8 Common troubleshooting examples

8.1 The Charger cannot be powered ON

Phenomenon : *The Charger cannot be powered ON*

General working principle - AC400V, 3-Phase power reaches the electricity meter from the distribution cabinet and enters the charger through the air switch of the meter and charger.

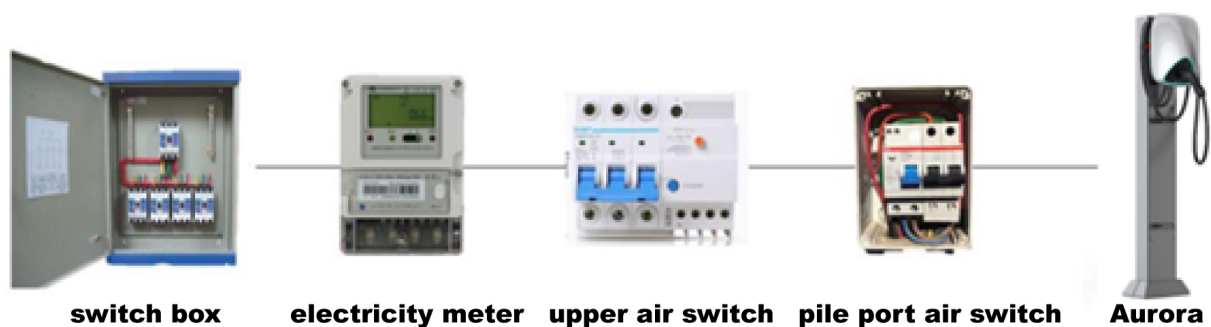


Figure 17: Power flow Scheme - Representational diagram

As shown in Figure 17, the AC power goes through the fuse, then through the varistor, and then enters the switching power supply. It is converted to DC12V to supply the mainboard.

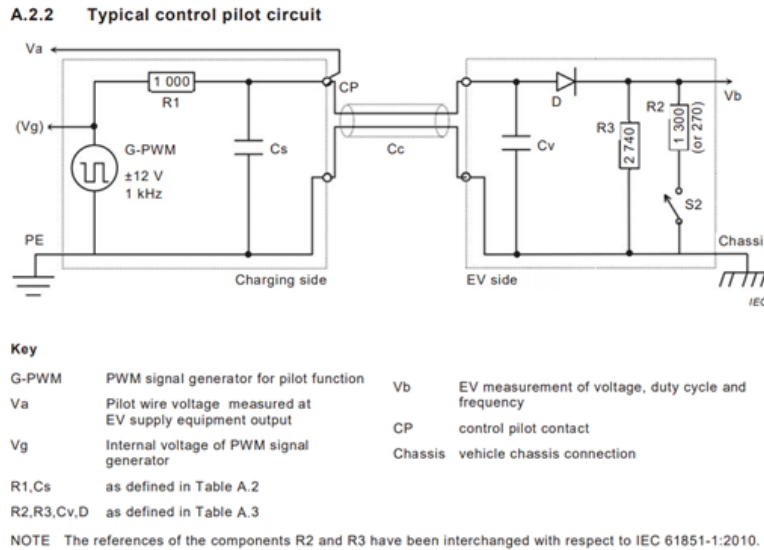
Troubleshooting tips

1. Check whether the input power is as per the norms. Make sure that the power supply is three-phase current for Aurora 11.
2. Check whether the air switch beside the charger trips. If it is, turn it ON. Check whether the power indicator is on. If it is ON, the fault is cleared. If it is still OFF, please check whether the air switch in the distribution box trips and use the same method to recover.
3. After eliminating the factors that would cause fault, measure the input, and output voltage of the air switch using a multimeter or a test pencil. If the input voltage is about 400V when the air switch is on, there is no output voltage or abnormal output voltage, the air switch is broken and replace it.
4. If the input and output voltages of the air switch are normal, there may be a fault in the charger. First, open the charger and measure whether the mainboard gets 400V. Observe the indicator light of the mainboard when the mainboard is on. If all of them are off, it is preliminarily determined that the mainboard does not have a 12V auxiliary power supply (abnormal switching power supply or fuse).
5. Check whether the input voltage of the mainboard is 400V. Check whether the input voltage of the switching power supply is 400V and the output voltage is 12V.
6. If the mainboard is normal, check whether the light board is faulty, replace the light board to check.

8.2 The charger is connected to the vehicle but charging doesn't get recognized by the EV

The light does not turn green after the charging connector is inserted in.

General working principle - After the charging connector is connected, the charger detects the resistance of R2 in the vehicle, so Va changes from 12V to 9V. At this time, the charger confirms the connection and the indicator light turns green.



Troubleshooting tips

1. Check whether dust has accumulated in the charging connector or charging socket. If so, clean it.
2. Check whether there is an issue with the charging connector. The resistance of PP to PE is 680 Ohm when the charging connector is not inserted.

Table B.2 – Current coding resistor for EV plug and vehicle connector

Current capability of the cable assembly (A)	Nominal resistance of Rc Tolerance ± 3 % ^c (Ω)	Minimum dissipation rating of resistances ^{a, b} (W)	Range of resistance Rc for interpretation by the EV supply equipment ^e (Ω)
	Error condition ^d or disconnection of plug		> 4 500
13	1 500	0,5	1 100 – 2 460
20	680	0,5	400 – 936
32	220	1	164 – 308
63 (3-phase) / 70 (1-phase)	100	1	80 – 140
	Error condition ^d		< 60

^a The power dissipation of the resistor caused by the detection circuit shall not exceed the value given above. The value of the pull-up resistor Ra shall be chosen accordingly.

^b Resistors used should preferably fail open circuit failure mode. Metal film resistors commonly show acceptable properties for this application. Dissipation ratings are chosen to avoid destruction in the case of a fault to +12 V supply.

^c Tolerances to be maintained over the full useful life and under environmental conditions as specified by the manufacturer.

^d EV supply equipment shall not provide power.

^e The minimum and maximum values of each range shall be tested. The choice of the resistance value at the transition between current levels is at the discretion of the EV supply equipment designer.

3. If the above tests are normal, try to replace the mainboard to check if the mainboard is broken.

8.3 Input Overvoltage/Undervoltage is observed

The charger stops abnormally

General working principle

1. The allowable range of the input voltage of the charging facility is 165V to 269V per phase.
2. If the input voltage is lower than 165V per phase, an undervoltage fault is reported, and if it is higher than 269V, an overvoltage fault is reported, and the charger will stop.
3. The onboard electricity meter in the charger will read the data such as the input voltage, and the mainboard will read the data of the electricity meter once every 100ms.
4. When the overvoltage and undervoltage conditions last 6s, the fault is established, and the charging will stop.

Troubleshooting tips

Check the input voltage of the charger. If the input voltage is too low or too high, we can advise the customer to replace the more stable line to meet the working conditions of the charger.

8.4 Earth fault observed

The charger stops abnormally

General working principle

The grounding mechanism is to change the amplitude of the grounding circuit through the Y capacitor charge and discharge, thereby determining the on-off of the optocoupler. After the optocoupler T5 is turned on, a negative pulse is generated, and the MCU determines whether it is grounded by detecting whether there is a negative pulse.

Troubleshooting tips

1. Check whether the charger has an independent grounding system. If it is not grounded separately, please make rectification on site and add a separate ground.
2. Check whether the grounding stud is tight and whether there is corrosion. If the stud is loose and the ground terminal/grounding area is corroded, please tighten the stud and remove the corroded parts to ensure the reliability of grounding.
3. The voltage between neutral and ground should be kept below 10V. If the voltage exceeds 10V, it is recommended to check whether the zero line is leaking or poorly grounded.
4. The cross-sectional area of the copper conductor used for grounding should be no less than 4 square millimeters. If the grounding copper wire used on site does not meet the above conditions, please replace immediately.
5. If the ground wire on site is not in good contact, try pouring proper amount of salt water on the grounding part, which can increase the conductivity.

Attention

In the end, the grounding resistance measurement value shall prevail, and the measured value should not be greater than 4 Ohm. If the charging pile is installed in an underground garage or a place where it cannot be separately grounded, when a ground fault occurs, it needs to coordinate with the community property to rectify the public grounding row.

8.5 Not fully charged, report that the battery is full or the connection is unsuccessful

The indicator light is green but there is no current.

General working principle

When the charger is normal operation and the connection is normal, the switch S1 is switched from the +12V connection state to the PWM connection state, and the power supply control device issues a PWM signal. At this time, if the vehicle S2 is closed, the voltage of "Monitoring Point 1" changes from 9V to 6V. At this time, the power supply control device closes the contactors K1 and K2 to make the AC power supply circuit conductive.

Troubleshooting tips

1. It is recommended that the customer recharge and check whether it is an accidental fault.
2. If the fault still exists, it is recommended to drive the vehicle to an external charger or a Automobile Sales Service shop charger for trial charging.
3. If there is another failure, the vehicle is judged to be faulty. It is recommended that the customer go to the 4S shop to check the vehicle.
4. Try to charge after replacing the mainboard.

For the newest version of the document, please feel free to check www.starcharge.com

Many thanks for your attention



Customer service

Preparation

If you have any questions or problems, please contact the company responsible for performing the electrical installation.

Before contacting Customer Service:

Check the troubleshooting measures in the Troubleshooting section of this manual.

Contact

Company address: No.39 Longhui Road, Wujin District, Changzhou, Jiangsu, China

Company Website: <http://www.starcharge.com>

Company E-mail: starcharge@wanbangauto.com

Customer service: +86 400 828 0768



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