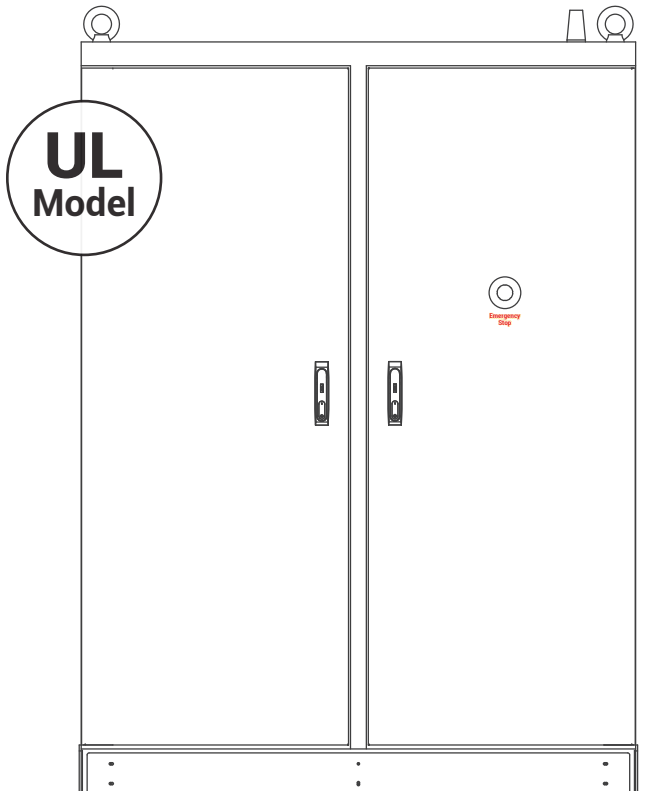


GW-EV4600-360

DC 360kW

Power Cabinet

Installation Manual



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Revision History				
Version	Date	Description	Author	
			Writer	Editor
V1.0	2024/06/03	<ul style="list-style-type: none">• Leveraged from existing standard DO360 user manual.• Added detailed view of charger (Sections 1.5).• Removed maintenance and warranty sections (Moved to troubleshooting manual).	Derick	Tammy
V1.1	2024/07/16	<ul style="list-style-type: none">• Revised the Detailed View of the Charger on page 13	Derick	Tammy

Disclaimer

This document is provided to assist in the installation, operation, and maintenance of the ESVE Model Electric Vehicle Supply Equipment (EVSE). While every effort has been made to ensure the accuracy and completeness of the information in this manual, compliance with the instructions, recommendations, or guidelines does not in itself guarantee the proper functioning of the equipment.

And the weight of each product, including packaging, typically exceeds 1000kg. Please determine the appropriate moving equipment and method on your own.

Compliance with this manual is crucial, but it does not absolve the owner/operator of their duty to follow all relevant local, national, and international codes, laws, and safety standards. The manufacturer explicitly disclaims any liability for damage or injury resulting from the installation or use of the EVSE not in accordance with these instructions or through improper, unreasonable, or unintended use.

Introduction

The DC Power Cabinet Fast Charger is the top choice to power battery electric vehicle (BEV). It is designed for quick charging in both public and private locations, such as retail and commercial parking spaces, fleet charging station, highway service area, workplace, etc.

The DC Power Cabinet Fast Charger has the advantage of easy installation. The pluggable power modules realize flexible and cost-effective installation for different types of locations. The DC Power Cabinet charger also has network communication capability. It is able to connect with remote network systems and provide drivers of electric cars real-time information, such as the location of charging stations, charging progress and billing information. The DC Output Power Cabinet Fast Charger has a clear user interface with function buttons, safety certifications and an excellent waterproof and dust proof design to provide the best choice for outdoor environments.

Standards and References

- NFPA-70 - Article 625 - Electrical Vehicle Power Transfer System
- NFPA-70E - Article 110 - General Requirements for Electrical Safety - Related Work Practices
- NFPA-70E - Article 120 - Establish an Electrically Safe Work Condition
- NFPA-70E - Article 130 - Work Involving Electrical Hazards
- Electric Vehicle (EV) Charging System Equipment [UL 2202:2009 Ed.2+R:09Feb2018]
- Power Conversion Equipment [CSA C22.2#107.1:2016 Ed.4]
- FCC CFR Title 47 Part 15 Subpart B: 2018 Class A
- ICES-003: 2020 Issue 7
- Energy Star
- California Type Evaluation Program / National Type Evaluation Program (NIST Handbook 44)
- ISO 15118 -2
- OCPP 1.6 JSON

1.Basic User Interface

1.1 Device User Interface

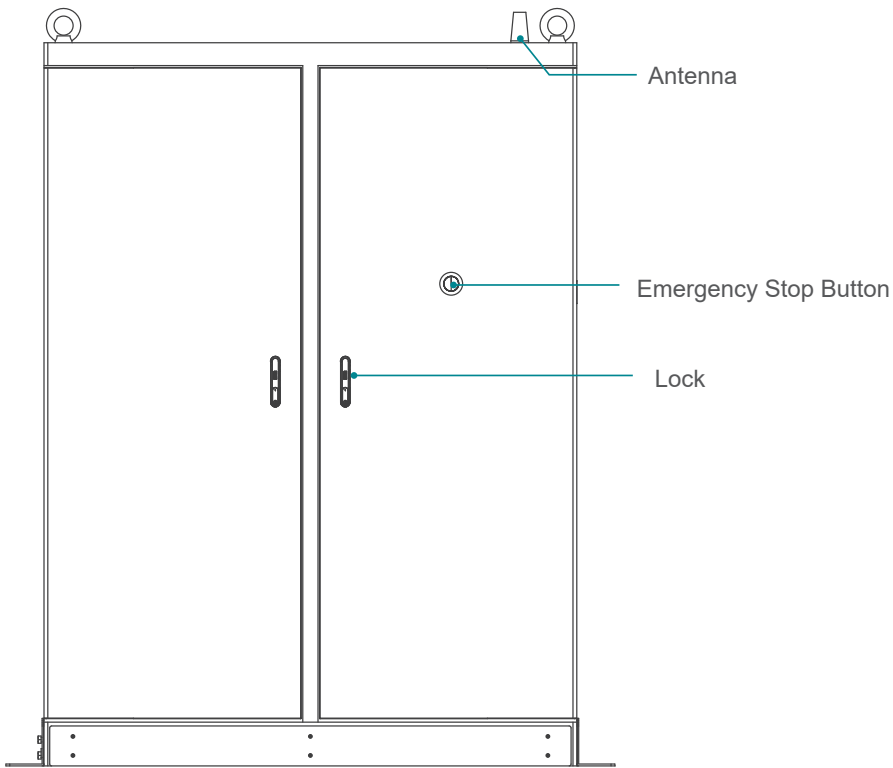


Figure 1. User Interface

1.2 Product Specifications

AC INPUT	Input Voltage	480 VAC, 3 Phase (+10%, -15%)
	Input Current Rating	466A@277Vac 549A@235Vac
	Electrical Distribution	3P+ N+ PE (Wye Connection)
	Power Grid System	TN/TT
	Frequency	50/60Hz
	Max. Input Power	391 kVA
	Power factor	> 0.99
	Efficiency	94%, at optimal V/I point
	SCCR	25kA/65kA (optional)
DC OUTPUT	Maximum Output Voltage	950Vdc
	Simultaneously output mode	0%, 25%, 50%, 75%, 100% of 360kW
	Voltage Accuracy	±2%
	Current Accuracy	±2%
	Meter accuracy	±1%
Electrical Isolation	Isolation between input and output	
Standby Power	< 100W	
Communication	External	Ethernet, Wi-Fi and 3G/4G
	Internal	CAN / RS485
Input Protection	OVP, OCP, OPP, OTP, UVP, SPD	
Output Protection	SCP, OCP, OVP, LVP, OTP, IMD	
Internal Protection	OTP, AC contactor detection, DC contactor detection, Fuse detection	
*AC breaker capacity selection	The current rating of the MCCB should be at least 600A (360kW). If an MCCB with a rating greater than 600A is selected, the gauge of the input wires must be increased accordingly to handle the higher current.	

User Interface & Control	Display	None
	User Authentication	None
	Backend support	OCPP 1.6 JSON
Environmental Conditions	Operation Temperature	-30°C to 50°C (-22°F to 122°F), will derating from 50°C (122°F) and above
	Storage Temperature	-40°C to 70°C (-40°F to 158°F)
	Relative Humidity	5%~95% RH, non-condensing
	Altitude	≤ 2000m (6561ft)
Regulations	Safety	UL2202, UL2231
	EMI/EMC	FCC CFR Title 47 Part 15 Subpart B: 2020 ANSI C63.4: 2014 ICES-003:2020 Issue 7
Mechanical Specifications	Dimensions (WxDxH)	1400x800x1900 mm (55 1/8" x 31 1/2" x 74 3/4")
	Weight (typ.)	< 1200 kg (2645.55 lb)
	DC outputs interface	Terminals x 4 sets
	Cooling	Forced Air
	Ingression Protection	NEMA3R
	Anti-vandalism	IK10

Table 1. Product Specifications

Dynamic Sharing Output mode

Dynamic Power Sharing (Four-Connector Model Only). According to the standard 360kW power cabinet DC output, the power dispenser connectors maximum output as below list:

1. The connectors will get full 360 kW when only one connector is plugged in or the rest three connectors finish the charging session.
2. Each connector will get 180kW (50%) or 90kW (25%) and 270kW (75%) output power when Two connectors are plugged in simultaneously or the rest two connectors finish the charging session, depends on the electronic vehicles' charging power request.
3. The connectors will get 90kW (25%), 90kW (25%) and 180kW (50%) output power when Three connectors are plugged in simultaneously or the fourth connector finishes the charging session, depends on the electronic vehicles' charging power request.
4. The connectors will get equal sharing (90kW each) output power when Four connectors are plugged in simultaneously. If any particular specification, please contact the manufacturer for more information.

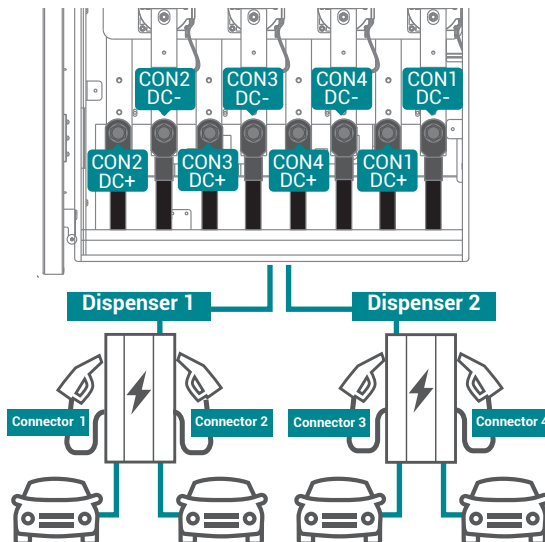


Figure 2. Dynamic mode

	Connector 1	Connector 2	Connector 3	Connector 4
One Car	360kW	X	X	X
Two Cars	180kW	180kW	X	X
Two Cars	180kW	X	180kW	X
Two Cars	90kW	X	X	270kW
Two Cars	X	90kW	270kW	X
Three Cars	180kW	90kW	90kW	X
Three Cars	90kW	180kW	X	90kW
Three Cars	90kW	90kW	180kW	X
Three Cars	X	90kW	90kW	180kW
Three Cars	90kW	90kW	X	180kW
Three Cars	90kW	X	180kW	90kW
Four Cars	90kW	90kW	90kW	90kW

Table 2. Dynamic mode

1.3 Dimensions

Unit: mm (inch)

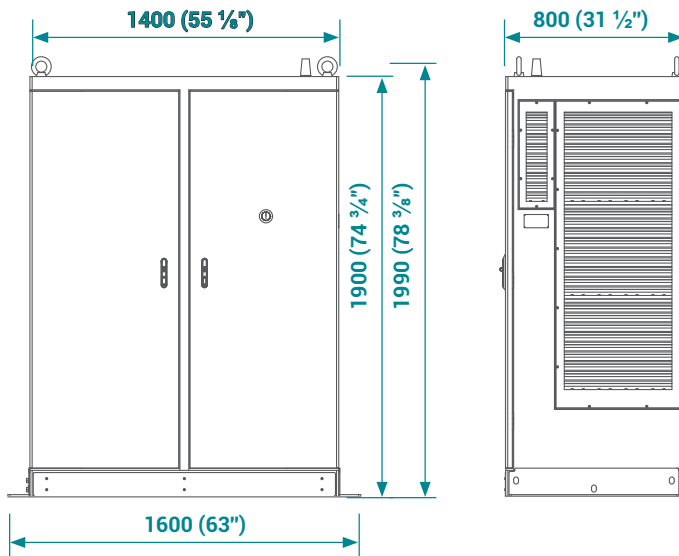


Figure 3. Device Dimensions

1.4 Direction of Cooling Airflow

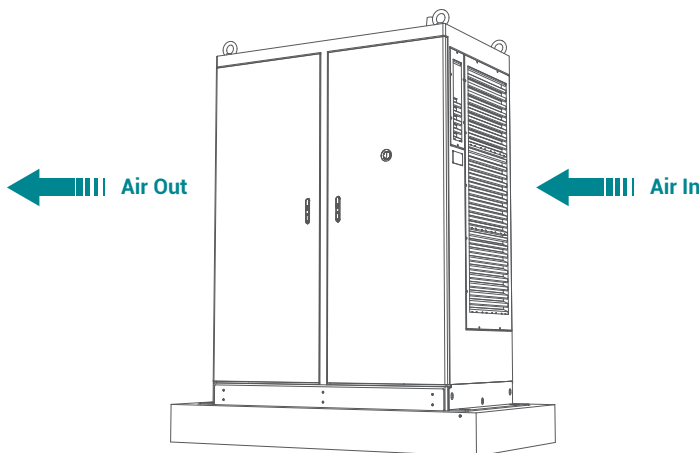


Figure 4. Airflow Direction

1.5 Detailed View of Charger

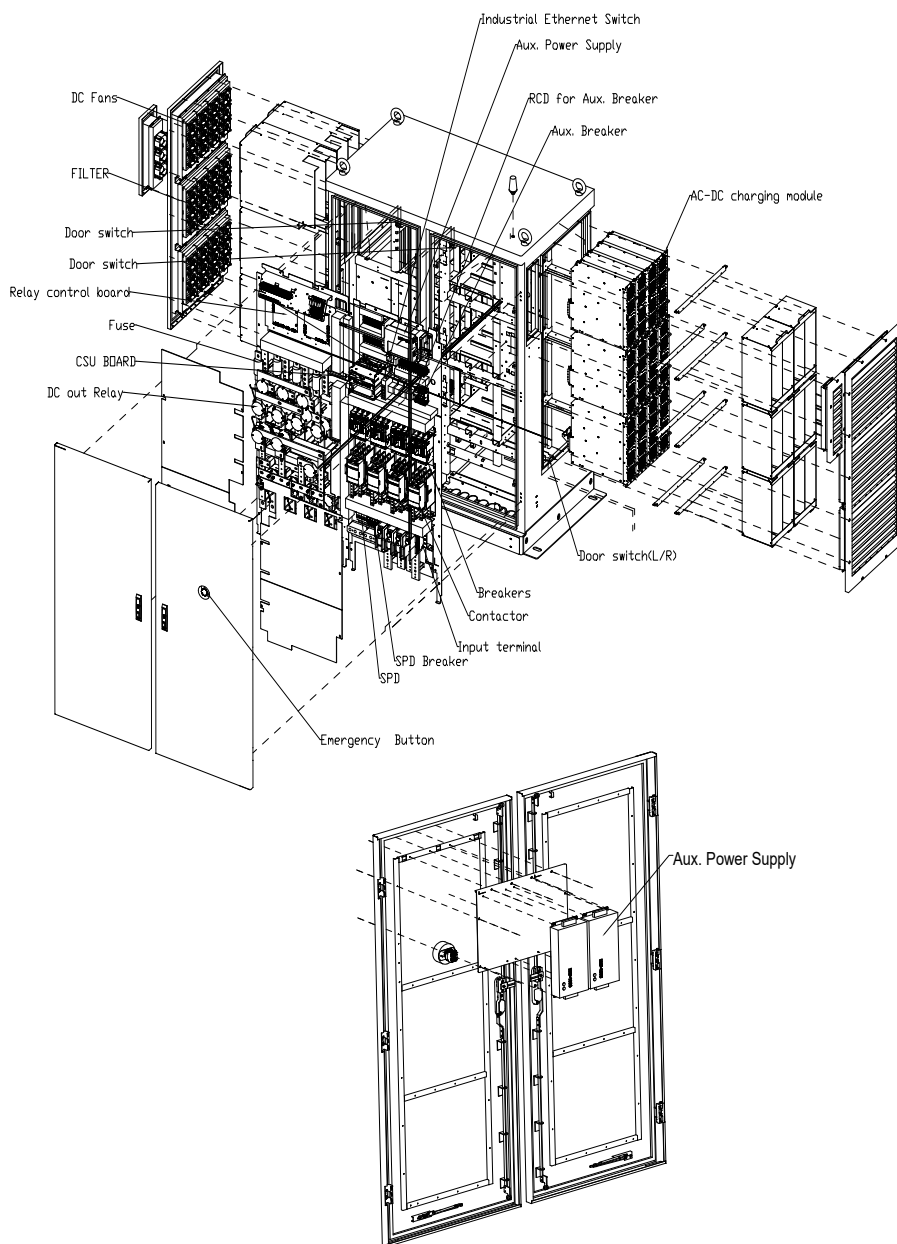


Figure 5. Exploded View

2. Unpack the Charger

- The product is Direct current (DC) charger, the packing design passed the packaging simulation test, if the packaging is damaged cause by overturning, falling or external impact during transportation, it may cause the product damage or defects. if there is any serious damage to the packaging when receiving the goods, please notify manufacturer about your findings.
- Receiving the DC 360kW Power cabinet. The product is delivered by a transport company to a warehouse or specified location where it will be handed over. Transporting the DC 360kW Power cabinet to its final location (last mile service) is not standard included in the order.

NOTE

The delivery truck unloads the pallet carrying the DC 360kW Power Cabinet. The movement of the DC 360kW Power cabinet to its final location is the responsibility of the customer / contractor.



- Checking the TiltWatch PLUS sensors: If the TiltWatch PLUS indicator is tilted over 30°
 1. Do not refuse the delivery / receipt.
 2. Make a notation on the delivery receipt and inspect cabinet for damage.
 3. If damage is discovered, leave cabinet in original package and request immediate inspection from carrier within 3 days of delivery.
 4. Contact manufacturer by mail or phone to notify us about your findings.



WARNING!

Charger weight with packing may > 1200 Kg(2645.55 lb)!
Be careful during unpack process.

STEP 1.

Please disassemble the shipping crate as follows:

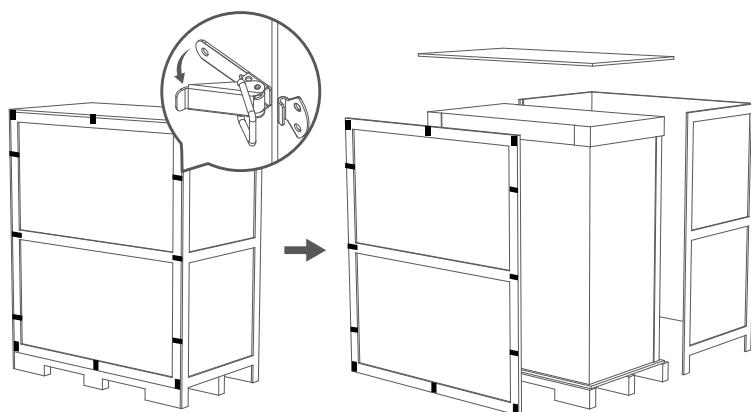


Figure 6. Unboxing 1

STEP 2.

Please remove the cardboard box and the protective internal packaging as follows:

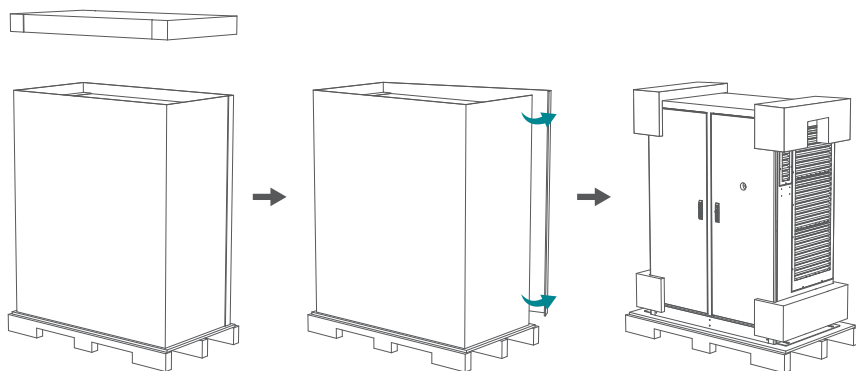


Figure 7. Unboxing 2

STEP 3.

Remove the 4 fixing screws.

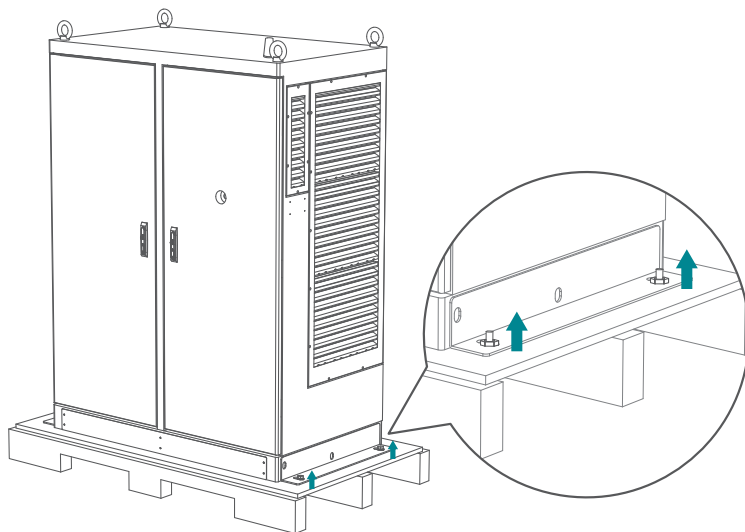


Figure 8. Detaching from Pallet

NOTE

To use lifting eye bolts to move the EVSE, please apply 6mm ($\frac{1}{4}$ inches) diameter steel wire rope to the four eye bolts as following picture. (Make sure to tighten the eye bolts before lifting.)

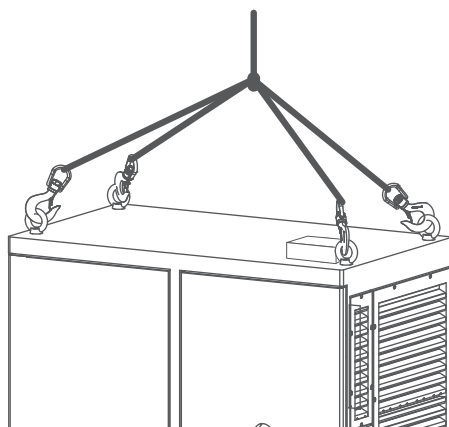


Figure 9. Moving the EVES via Crane

3. Installation

3.1 Warnings, Cautions and Notes



WARNING

Do not use this product if the power or charging cable is damaged.



WARNING

Do not use this product if the enclosure or charging connector is broken, damaged, or open.



WARNING

Do not put any tools, materials, fingers, or other body parts into the charger or EV connector.



WARNING

The EVSE should be installed only by a licensed contractor and / or licensed technician. Obey all national and local building codes, electrical codes, and safety standards.



WARNING

The EVSE should be inspected by a qualified installer prior to initial use.



CAUTION

Do not twist, swing, bend, drop or crush the charging cable. Never drive over it with a vehicle.



CAUTION

See Figure 10. Power feed must be 3 Phase WYE configuration with a TN(-S) or TT grounding system.

- TN(-S) system: the neutral (N) and the PE of the power distribution are directly connected to the earth. The PE of the charger equipment is directly connected to the PE of power distribution and separate conductor for PE and neutral (N).
- TT system: the neutral (N) and the PE of the power distribution are directly connected to the earth. The PE of the charger equipment is isolated to the PE of power distribution to the earth.

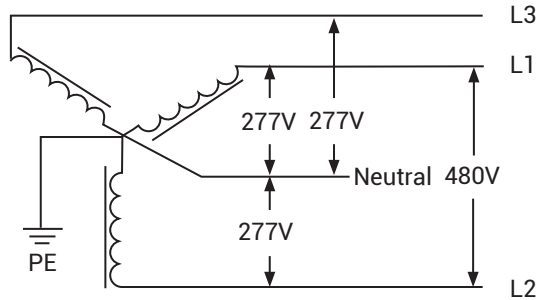


Figure 10. 277/480V Three-Phase Y Wiring Connection



CAUTION

The EVSE should be installed in an area with free-flowing air.



CAUTION

The disconnect switch for each ungrounded conductor of AC input shall be provided by installation contractor or technician in accordance with the National Code, ANSI/NFPA 70.



CAUTION

A cord extension set or second cable assembly shall not be used in addition to the cable assembly for connection of the EV to the EVSE.



DANGER

The lightning flash with arrowhead within a triangle is intended to tell the user that parts inside the product are risk of shock to person.



NOTE

Read all the instructions before using and installing this product.



NOTE

The capacity of power supply should be higher than 196kVA (180kW application) or 391kVA (360kW application) in order to have function correctly.



NOTE

The EVSE should have at least 3 feet 6 inches (1000mm) of clearance around the product. Follow NEC table 110.26 condition 2, 151-600V.



NOTE

Wi-Fi and 3G/4G signal strength should be tested during charger installation. The RSSI (Received Signal Strength Indication) should be higher than -65dBm. Poor connection quality might interrupt charging process or data transmissions.



CAUTION

The lightning flash with arrowhead within a triangle is intended to tell the user that parts inside the product are a risk of shock to person.

3.1.1 Contractor Safety Guide

Introduction

- A safe work environment for everyone - participants, installation and demolition crews, contractors and subcontractors.
- Ultimately, it is the responsibility of contractors to ensure the safety and safe work practices of their employees and subcontractors who may be working at the site on their behalf.
- This guide provides a simple reference guide with basic rules for implementation. This guide does not outline every single safety standard: it is designed to be a supplement to participants, contractors and subcontractors.
- Contractors, subcontractors and employees should cooperate with their employers and other persons in complying with safety regulations and instructions.

In particular, employees should:

1. Obtain the qualified authorization of the responsible unit in the construction area.
2. Work safe.
3. Not do anything to endanger themselves or other persons.
4. Use personal protective equipment as required and take reasonable care of it when it is not in use.
5. Report unsafe activities immediately to supervisors or the responsible person in control of the workplace.
6. Report all accidents and dangerous occurrences to the supervisor immediately after they happen.

1.Requirements for workplace conditions

- Set up suitable fencing to isolate the construction area from outside
- Close and secure all entrances when the site is unattended
- Hang warning notices nearby which show the following information: warning icon and phone number of person in charge
- Install sufficient lighting fixtures



2.Cleaning up

- Keep work areas (including accessways) free from debris and obstructions
- Keep ground surfaces tidy and flat, to avoid people tripping or being hurt by tools or other objects
- Stack and store equipment and materials in a tidy and stable manner
- Regularly clean up and dispose of waste
- Remove all surplus materials and equipment after completion of work



3.Fire hazards

- Beware of flammable materials and goods. Keep them away from work areas



4. Protection against high temperatures on the worksite

- Erect a sunshade or shed to shelter workers from the heat and sun
- Set up cooling equipment, such as exhaust fans.
- Make water dispensers available
- Provide suitable protective clothing such as hat, sunglasses and long sleeves to protect workers from heat stroke and UV rays



5. Inclement weather

- Secure all scaffoldings, temporary structures, equipment, and loose materials
- Check and implement SOP to ensure. disconnection of gas supplies, electrical circuits and equipment
- Inspect worksites to ensure protection against ingress of water or dust
- Inspect the drainage system for blockages and remove if found
- Stop all outdoor works except for emergency works



6. Ladders

- Only use ladders that meet local safety regulations.
- Do not use wooden ladders
- When working at height, it is recommended to use platforms instead of ladders
- If using a platform is not practicable, a supervisor should assess the potential risk and provide safety

- protection equipment for workers
- Use non-conductive ladders made of glass-fiber or reinforced plastic when carrying out electrical work
- Assign assistants to provide support when working on ladders
- Check all ladders for broken rungs or other defects before use and periodically
- Fully open stepladders when in use
- Do not stand on the top two rungs of a ladder
- Do not overreach when working on a ladder
- Beware of overload restrictions

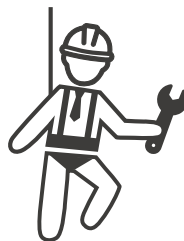


Country	Standards
British	BS1129,BS2037,EN131,EATS13/1
USA	ANSI A 14.1,ANSI A 14.2,ANSI A 14.5
Australia New Zealand	AS 1892.2-1922,AS/NZS1892.1, AS/NZS 1892.3
Canada	CSA Z11 M81

Common Standards for Ladders

7. Working at height

- Avoid working at height by using alternative tools and methods as far as practicable
- It is strongly recommended to build suitable scaffolding or work platforms
- Provide fall arrest systems for workers if it is impracticable to use working platforms
- Secure all materials and tools to prevent them falling from height



8. Lifting operations

- Have lifting gear and apparatus regularly inspected and tested by qualified persons
- Isolate and cordon off lifting areas to keep out non-construction personnel
- Ensure that lifting routes do not cross buildings or people, and avoid collision with objects
- Do not exceed safe working load limits



9. For on-site workers

- Plan all work
- Turn off power. (work with live parts de-energized whenever possible)
- LOTO (Lock Out, Tag Out)
- Live electrical work permit. (input terminals with HV after door open)
- Use personal protective equipment. (PPE)
- Safe workplace conditions and space.
- Adhere to other occupational health, safety and security codes, such as those published by OSHA.



10. Reference standards

- Adhere to the following codes:
- NFPA-70E -2021 Sec 110.3 (Electrical Safety in the Workplace)
- NFPA-70E -2021 Sec 130.4 (Shock Risk Assessment)
- NFPA-70E -2021 Sec 130.5 (Arc Flash Risk Assessment)



3.2 Required Space for Placing and Maintaining

It requires a space of 2600 x 1600 mm (102 3/8" x 63"). This space is calculated as follows:

- Size Charge W x D x H: 1400 x 800 x 1900 mm (55 5/8" x 31 1/2" x 74 7/8").
- Front side 850 mm (33 1/2"), in order to open the front door.
- Left and right side 600 mm (23 5/8"), in order to open left and right door.
- Backside 100 mm (4"), in order to guarantee an unimpeded airflow.
- The distance from ground screws to the RC concrete edges should be at least 100mm (4").

Unit: mm(inch)

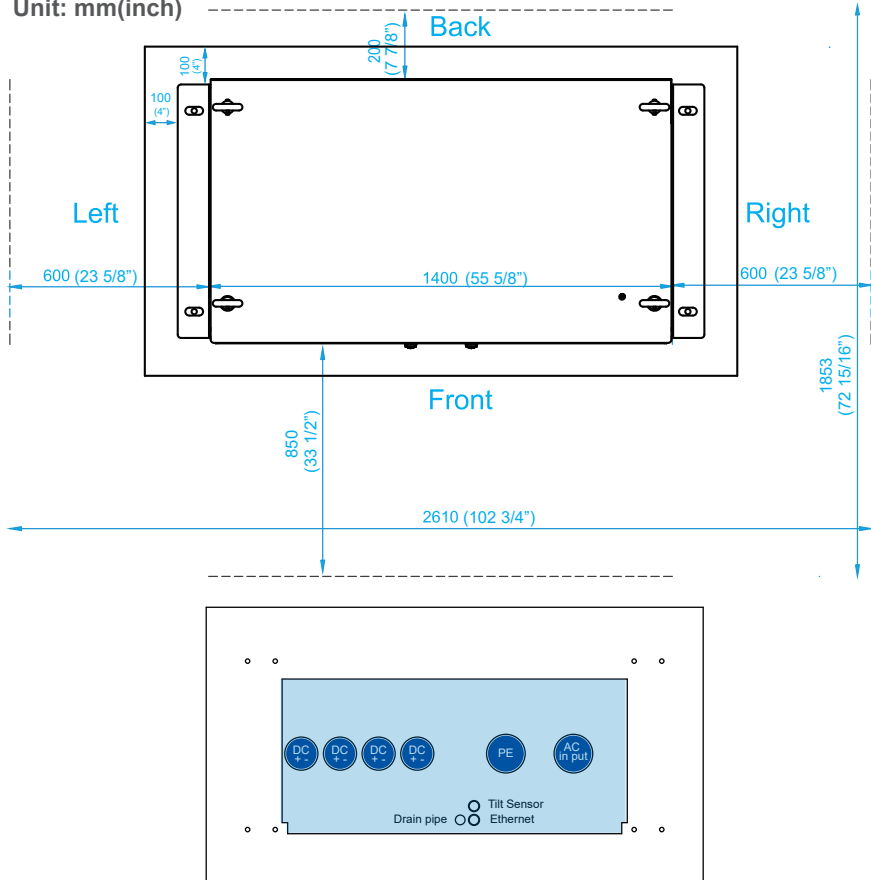




Figure 11. Placement Dimension Requirements

3.3 Recommended Tools and Assemblies for Installation

Type	Description
Philips Screwdriver	No.1, No.2
Hexagon Screwdriver	5.5mm, 7mm, 8mm, 10mm, 13mm, 17mm, 19mm, 24mm, 30mm *See the table of metric conversion
Shifting Wrench	12" (34mm)
Electrical tape	Black/15mm (0.6") Width
Combination wrench (for DC /PE CABLE)	FNW-19, FNW-24
AC Input Cable	<p>Power Line: Conductor cross section: 350kcmil(177mm²) at least, Cable x 8; L1x2, L2 x2, L3x2, Nx2. (360kW) MAX With Ring terminal for M16 screw (Inner diameter > 16mm (5/8"), Outer diameter < 51mm (2"); thick type). Recommend to use 600V, 75° C (167°F), XLPE/XHHW-2/Hypalon/Photo-Voltaic power cable.</p> <p>Protective Earth conductor : Conductor cross section: 1AWG (42.4mm²), PEX1 for TN system with ring terminal for M16 screw (Inner diameter > 16mm (5/8"), Outer diameter < 35mm (1 3/8") ; Thick type) (Conductor cross section: 1AWG (42.4mm²) and ground rod for TT system)</p>
DC Output Power Cable & PE	<p>DC Output x2 (Connector1, Liquid cooling; Connector2, Natural cooling)(The charging connectors installed on the EVSE may vary depending on the designated application.)</p> <p>Each connector is recommended to use below cable: Liquid Cooling 500A CCS1/CCS2-Conductor cross section: Conductor cross section: 250kcmil (127mm²) at least, Cable x 4 (DC+ x2, DC- x2)</p> <p>Natural Cooling 300A CCS1/CCS2- Conductor cross section: 350kcmil (177mm²) at least, Cable x 2 (DC+ x1, DC- x1) Natural Cooling 200A CCS1/CCS2, CHAdEMO 200A Conductor cross section: 3/0 AWG (85.01mm²) at least, Cable x 2 (DC+x1, DC- x1) With ring terminal for M16 screw (Inner diameter > 16mm (5/8"), Outer diameter < 40mm (1 5/8"); Thick type)</p>

	 Recommend to use 1000V , 75°C (167°F), XLPE/ XHHW-2/Hypalon/Photo-Voltaic power cable.  Protective Earth conductor: Conductor cross section: 1AWG (42.4mm ²) cable for TN system With ring terminal for M16 screw (Inner diameter > 16mm ($\frac{5}{8}$ "), Outer diameter < 35mm ($1\frac{3}{8}$ "); Thick type) (Conductor cross section: 1AWG (42.4mm ²) ground rod for TT system)
Ethernet cable	CAT6 SFTP cable 24 AWG or 26 AWG x 2 for dispenser cabinet
Slotted Screwdriver	
Socket driver	
Forklift	
Wire Stripper	
Wire cutters	
Residual Current Device	30mA type A , 3 pole (optional)
MCCB(Moulded Case Circuit Breaker)	over than or equal to 600A 3 pole; B curve If an MCCB with a rating greater than 600A is selected, the gauge of the input wires must be increased accordingly handle the higher current.



Please consult your local electrical technicians for proper installation instructions as installation requirements or conditions may vary on-site.

SCREW SIZE		RECOMMENDED TORQUE			
METRIC (MM)	ENGLISH (inches)	DIN(Nm)		ASTM (ft'lb)	
		6,9 QUALITY	8,8QUALITY	A449 TYPE	A325TYPE
M3	1/8	1	1,3	-	
M4	5/32	2,5	3		
M5	3/16	4	6		
M6	1/4	5	10	4	
M8	5/16	20	23	9	
M10	7/16	40	50	25	
M12	1/2	60	70	38	50-58
M14	9/16	100	120	54	-
M16	5/8	150	210	75	99-120

Recommended Tools for Inspection & Commissioning

Type	Description
EV or EV Simulator	Meet CHAdeMO/CCS Standard
Multi-meter	1000V
Current Probe	600Amp
RFID Authorized Card	
RFID No Valid Card	
Door Key	
Needle-Nose	
Laptop & CAT6 Cable	
Wi-Fi, 3G/4G signal quality checker	If wireless router is used, please do not leave the router in metal box for better signal strength.

STEP 2.

- Extend 3 phase 5 wires AC input cable from conduit of concrete base, AC cable expose at least 520mm(21") PE cable expose at least 380mm (15") and these wires should be with ring terminals.
- The conductor cross sectional area of input power wires should be not less than 350kcmil*2. Extend 8 wires DC output cable from conduit of concrete base, DC cable expose at least 320mm(13") and these 8 wires should be with ring terminals. The conductor cross sectional area of output power wires be recommended at section 3.4.1.
- Extend communication wire from conduit of cement base, expose at least 280mm(12").

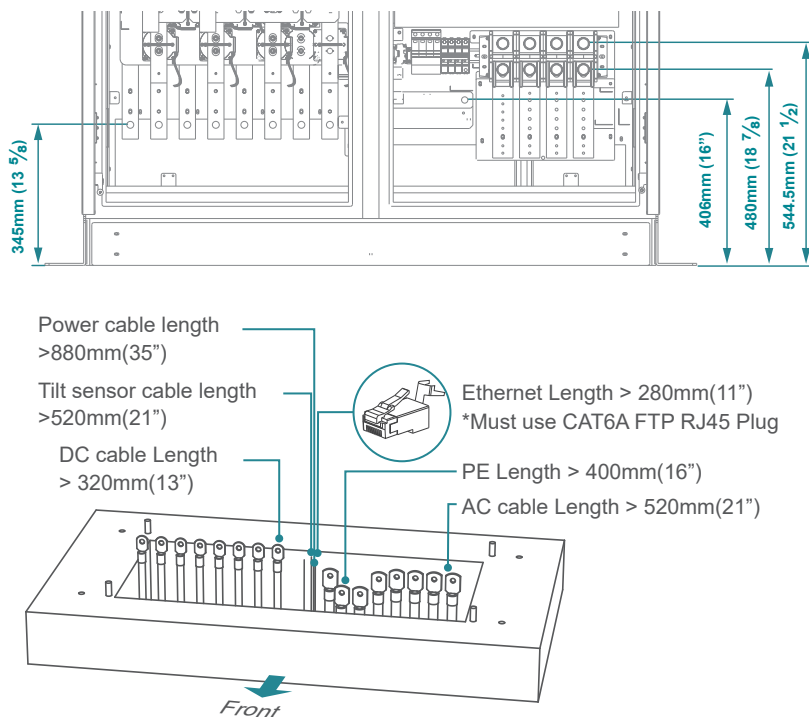


Figure 13. Cable Throughput

3.5 Two Methods of Fixing the Charger

Method 1.

Lift the charger onto the concrete base, feed all the cables through the entry hole located at the bottom of the unit; fasten the 4 pcs of M16 screw nuts on the 4 pcs of M16 mounting anchor bolt from the cement base (2 nuts for each bolt) to secure the chargers.

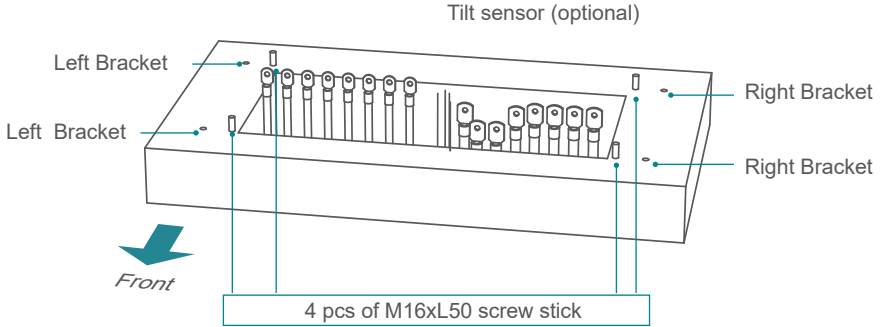


Figure 14. EVSE Placement

Method 2.

Fix the cabinet with external brackets and expansion bolts.

Lift the cabinet onto the concrete base, remove the cover metal sheet of the cabinet base, fix the L-shaped brackets on the cabinet base with the M16xL120 expansion screws (Material: Stainless steel), drill 4x $\Phi 20$ mm screw holes on the concrete base, secure L-shaped brackets on the concrete base by 4 pcs M16 expansion bolts (Material: Stainless steel).

Installation Precautions: During install the charging or stand, must ensure the equipment levelness to avoid the tilting of charging equipment affect the accuracy of tilt sensor operation.

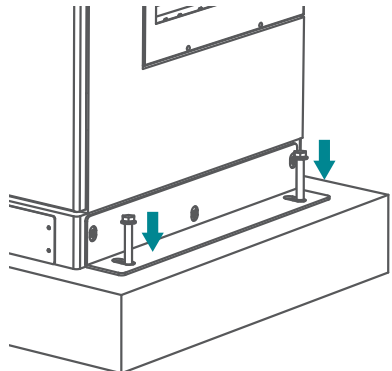


Figure 15. EVSE Attachment

NOTE

Remove the protective antenna EPE.

If remove the eye bolts on the top of the cabinet, must assemble the water-proof plastic bolts (in the accessory pack).

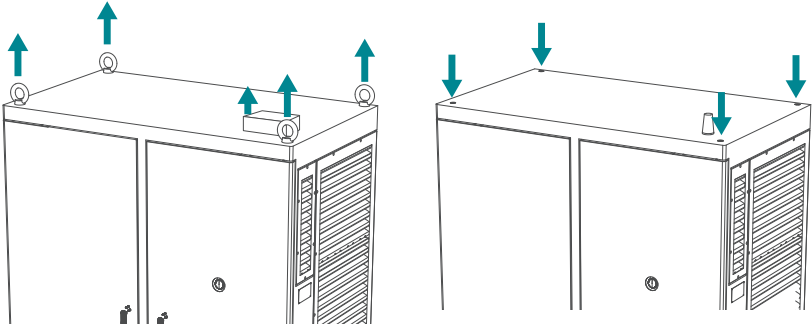


Figure 16. Base Cover Install

3.6 Cable Installation

3.6.1 Pre-work for lifting

STEP 1.

Open front door for wiring, loosen 6 pcs of screws to remove 2 set of cover plate .

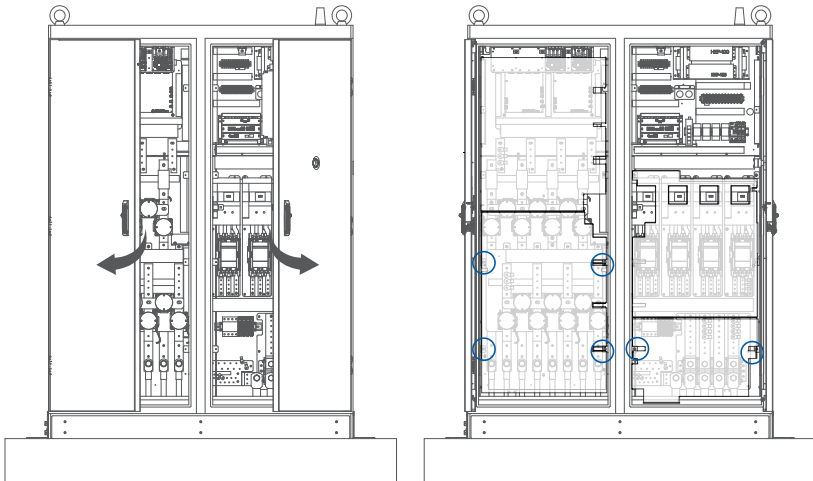


Figure 17. Cover Plate Location

STEP 2.

Unscrew 4 pcs of M5 screws of the 2 back covers, and 2 pcs of M5 nuts.

Originally, the middle nuts of back cover is half loose and so can take the 2 back covers after unscrew the screws and nuts.

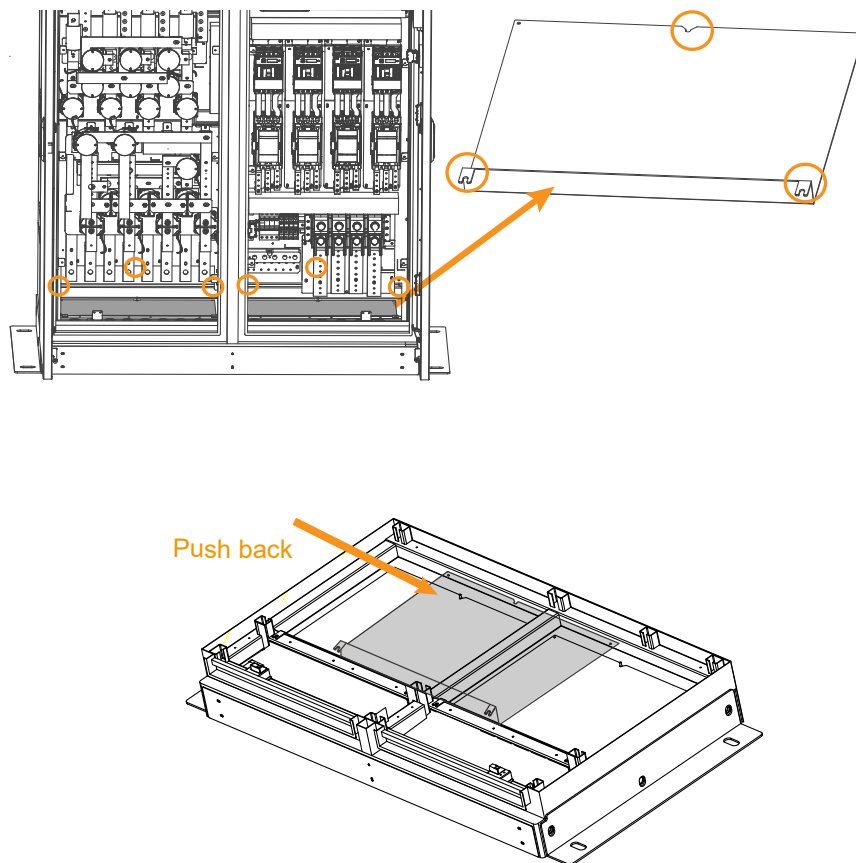


Figure 18. Remove the Cover Plate

*The purpose for the cover is prevent from invasion of insect or small animals. It can be removed while installing if needed, just loosen screws on the cover, but remember to make cover fixed as original after installation.

STEP 3.

Unscrew the 1 pcs of M5 screw of the two front covers and 8 pcs of M5 nuts, after that to take out the front cover.

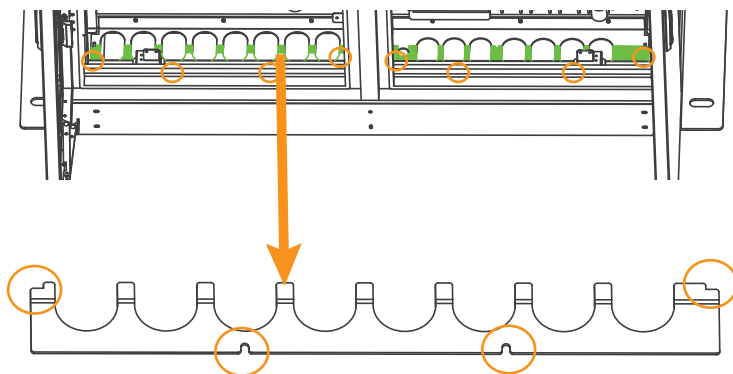


Figure 18. Remove the Front Cover

3.6.2 Installing Cable

STEP 1.

Put the pre-bending wires to to the front cover, and then put the back cover back. After put back, screw 1 pcs of M5 screws of the two front covers and 8 pcs of M5 nuts.(The structure of Generation 2 & 3 is the same.)

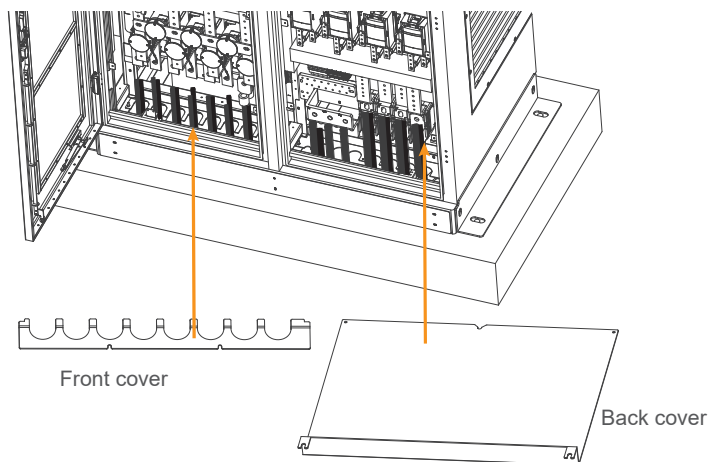


Figure 19. Installing Cable

STEP 2.

Connect the PE cable (Green/Yellow) to PE busbar plate; fasten input power cable L1 , L2 , L3 /Neutral on input terminal block accordingly. Connect DC+ and DC- power cable of CONNECTOR 1,CONNECTOR 2,CONNECTOR 3 and CONNECTOR 4 on relative position of busbar. Please fasten each wire with proper bolt and torque 350Kgf•cm/5-15 secs.

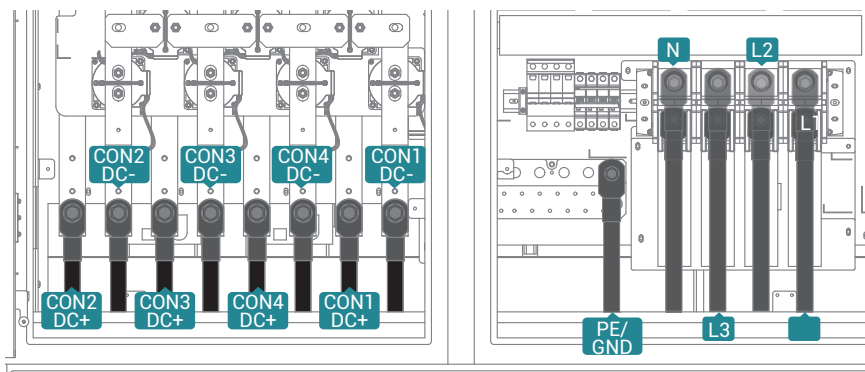


Figure 20. Cable Gland

Note

1. Precautions for the lock of the lower row of AC terminal blocks: first put the terminal -> copper row -> opening washer -> screw.
2. PE copper busbar: PE/GND is 03. Others are the PE points of the main cabinet and connector cabinet.

STEP 3.

Connect Ethernet cable :
Insert input and output Ethernet cable into paired RJ45 connectors as pictures on the right side.

1. For standard version.

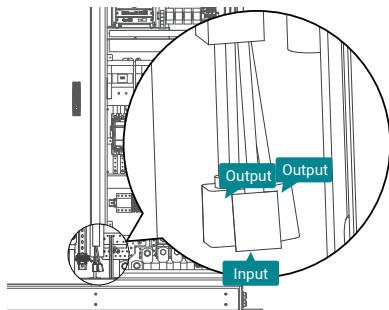


Figure 21. Ethernet cable

2. For tilt sensor version

Tilt sensor cable into insulated butt splice connectors as pictures below
(wire size: 22AWG).

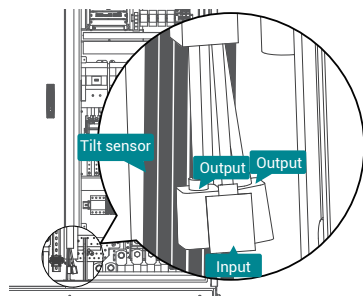


Figure 22. Tilt Sensor

STEP 4.

Connect AC power cables to power distribution box, connect the Protective Earth wire (Green/Yellow) to ground point of power distribution box. Neutral should be shorted with PE to meet TNS grounding system.

STEP 5.

To properly seal the cable entry after cables are installed, please fill and glue the cable entry with the sponge grommets provided in the accessory kit.

STEP 6.

Use adaptive flame retardants and electrical insulated foaming agent and far from conductive live part at least 12mm or other method to seal the cable entry hole to assure the NEMA3R grade of the cabinet, and prevent insects enter the cabinet.



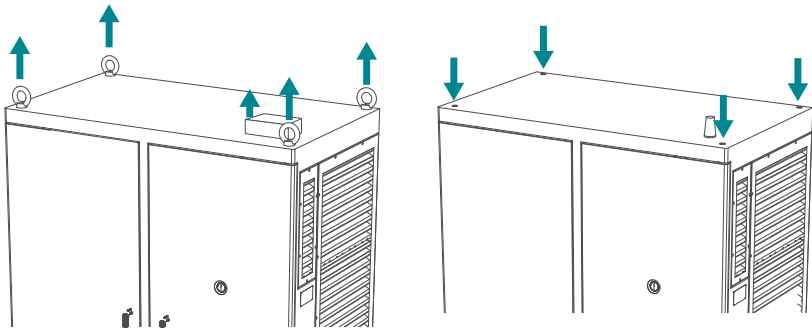
Optional:

600A MCCB B curve, with 30mA RCD type A and power meter are recommended to be used on power distribution box .

Note

Remove the protective antenna EPE.

If remove the eye bolts on the top of the cabinet, must assemble the water-proof plastic bolts (inside the accessory pack).



3.7 Seal the Cable Entry Hole

The cable entry hole needs to be sealed to maintain an IP55 rating for the EVSE.

1) Seal the hole with flame retardant material and electrical insulating foam or another sufficient method. Consult local electrical code to assure compliance and a proper seal.

3.8 Upstream Circuit Breaker Selection and Aux Power Preparation

Constructor or CPO is mandatory to select a circuit breaker which with “shunt release accessory” or relevant devices so that the safety function can be activated. If you need any recommendation models of shunt release, please contact your local agent.

Below are reference SOR reference models from ABB:

12V : SOR-C 12V DC (1SDA066321R1)

24V : SOR-C 24-30V AC/DC (1SDA066322R1)

NOTE

The SOR circuit breaker should have a maximum withstand voltage of 277Vac.

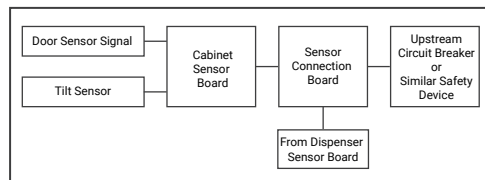


Figure 23. Functional Block Diagram

3.9 Connecting the Sensor Board

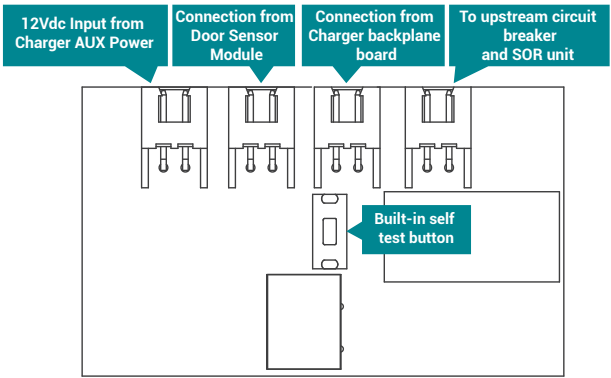


Figure 24. Sensor Board Connectors

3.10 Wire Specifications

1) Connect UL1015 22AWG 105°C 600V wires from the sensor board to the upstream circuit breaker. See Figure 25.

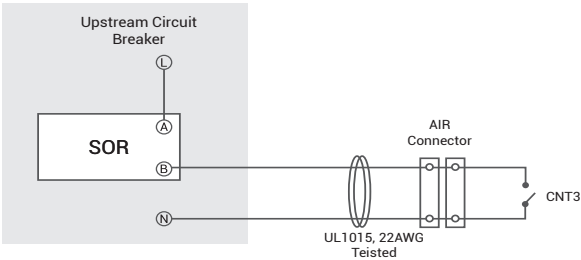


Figure 25. Control Circuit

4. Installation Inspection and Commissioning

4.1 Environmental Check

Item	Status	Remark
Ambient Temperature		
Ambient Humidity		
Sunshade		Recommended but not required.
Rain Canopy		Recommended for better charging experience and maintenance on rainy day.
Installation Altitude		$\leq 2000\text{m}$ (6560 ft)
Air Circulation / Drafty		
Dust Level		
Anti-Vandalism Measures		

4.2 External Infrastructure Readiness and Check

Item	Status	Remark
Cement (stand) Base		
Input Wirings & Terminals		Type/ Length/cross section
Key & Lock of Cabinet Door		
Fixing Screws		Type /No.
MCCB(Moulded Case Circuit Breaker)		Current rating of MCCB shall be higher than or equal to 600A (360kW) Optional: If an MCCB with a rating greater than 600A is selected, the gauge of the input wires must be increased accordingly to handle the higher current.
Residual Current Device		30mA type A
Input Electricity Capacity		
Input Electricity Configuration		Wye
Grounding Resistance		$<10\Omega$

Grounding System		TN/TT
Grid Voltage & Frequency		
Network Connection & Quality		Wi-Fi , 3G/4G > -65dBm

4.3 Power On Check

1. Turn on the external breaker of power distribution box.
2. Open the power cabinet's front door and check light indication status at power dispenser as shown in following.

#	Status Description	RED Light	GREEN Light
1	Start up	Both are blinking	
2	Standby mode	Off	On
3	Warning or Error	On	Off

3. Function check & Connection as list below.

Item	Status	Remark
Network Connection Quality		Wi-Fi , 3G/4G > -65dBm
Cooling Fans Operation & Noise		
EVSE Setting		See chapter 4 or refer to setting manual
Function of Engineer Mode		

4.4 EVSE Charging Check

Item	Status	Remark
Full Charge Test		Temperature Reading
Airflow & Noise of Cooling Fan		
Charging Record (log) Upload		

4.5 EVSE Check - System Power Override

Item	Status	Remark
Emergency Stop Button & Recovery		Set the rated load state and push the emergency stop button. Make sure: 1. The charger stops charging and the alarm sounds. 2. When the button is released and the DC connector is detached, the EVSE returns to the standby status.
Tilt sensor and Door Open sensor trigger & Recovery		Push the self test button. 1. Make sure the upstream circuit breaker is cut off.

5. Setup

5.1 Laptop Setup

Requirements:

- A laptop with a wireless Internet connection and an RJ45 port.
- Connect an RJ45 cable. See Figure 26.
- Laptop IPV4 static IP address set to 192.168.1.1. See Figure 27.

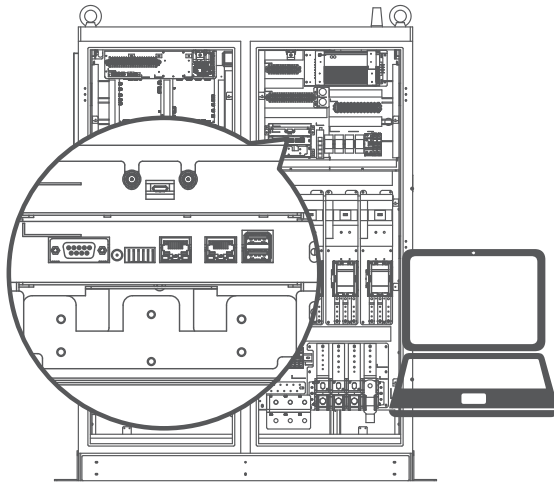


Figure 26. RJ-45 Port

Use the following IP address:

IP address:	<input type="text" value="192.168.1.1"/>
Subnet mask:	<input type="text" value="255.255.255.0"/>
Default gateway:	<input type="text" value="."/>

Figure 27. IPV4 IP address

5.2 Login to the EVSE

1) In a web browser, navigate to 192.168.1.10.

2) See Figure 28. On the EVSE Homepage, login with the credentials that follow:

- Account: admin
- Password: 1231231238

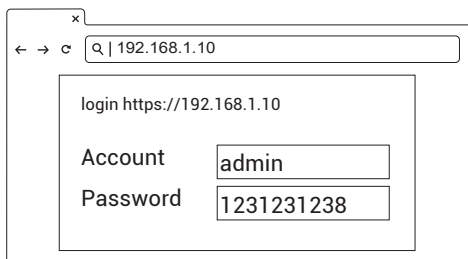


Figure 28. Login

5.3 Setup the Wi-Fi Network

1) Select Network. See Figure 29

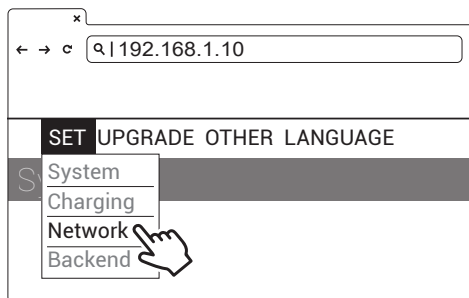


Figure 29. SET Menu

2) Select Wi-Fi Module. See Figure 30.

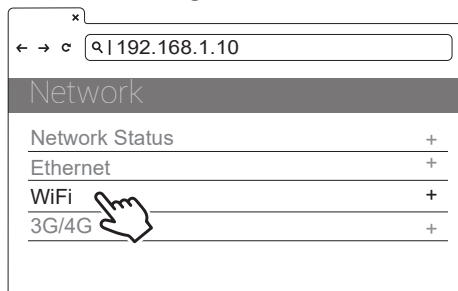


Figure 30. Network Select

3)Select Wi-Fi modes and fill in the SSID and Password, according to your requirements. See Figure 31.

192.168.1.10

SETUPGRADEOTHER LANGUAGE

WiFi Module

Mode

SSID

Password

Wifi Target Bssid Mac

DHCP Client

Set

Wi-Fi Setting	Description
Mode	Enable(station) or disable or set as AP mode
SSID	Service Set Identifier SSID
Password	Password to access to Wi-Fi
Wifi Target Bssid Mac	Fill in designated AP Mac if needed
DHCP Client	DHCP client of Wi-Fi

Figure 31. SSID and Password



WARNING

Due to varying environmental conditions, a Wi-Fi and 3G/4G module network signal test should be conducted before installation. The RSSI (Received Signal Strength Indication) should be higher than -65dBm. A signal strength lower than that can cause network disconnection or poor network reception.

5.4 SIM Card Installation

1) Open the right door. And you can see the 3G/4G/Wi-Fi module inside the cabinet.

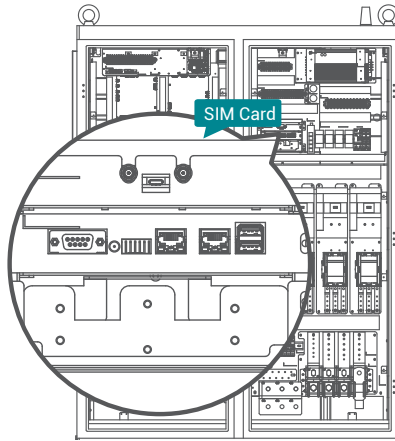


Figure 32. 4G/Wi-Fi Module Access

2) Insert a 3G/4G Micro SIM Card in the tray, make sure the gold contacts are facing down and the notch is in the upper right corner. See Figure 33.

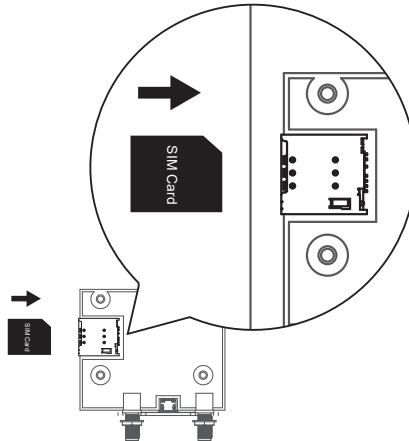


Figure 33. SIM Card Insertion

NOTE

Inserting the sim card wrong can cause damage.

5.5 3G/4G Network Setup

1) Contact your SIM provider and get the APN, PPP ID, and password.

NOTE

The PPID ID and password option may depend on your SIM provider.

- 2) Setup the laptop per 4.1, as needed.
- 3) Login to the EVSE per 4.2, as needed.
- 4) Select: SET | Network | 3G/4G. See Figure 34.

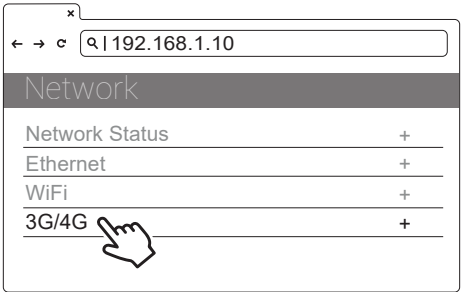


Figure 34. Network Select

5) Fill in the APN, Chap Pap Id, and Chap Pap Pwd information. See Figure 35.

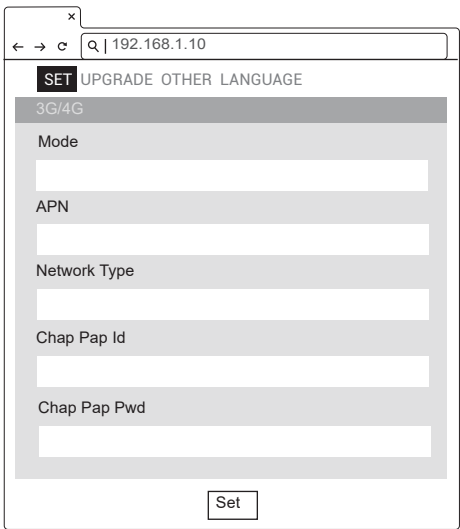


Figure 35. Network Information

6) Make sure the 3G/4G network activates.

5.6 Time Settings

Automatic setting

The time will be adjusted automatically when the EVSE connects to the internet.

Possible time servers:

- time.windows.com
- cn.ntp.org.cn
- tock.stdtime.gov.tw

NOTE

Firewall and network environment may influence the time server connection.

Manual setting

- 1) Setup the laptop per 4.1, as needed.
- 2) Login to the EVSE per 4.2, as needed.
- 3) Select: SET | Network | System Information | System DateTime. See Figure 36.

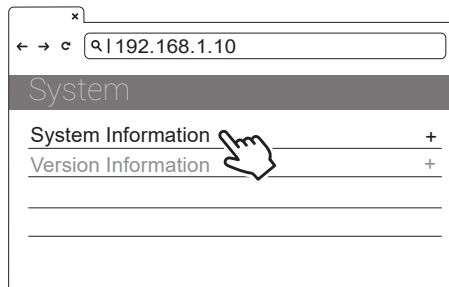


Figure 36. Date and Time Information

4) Select the calendar button on the right to set the current date and time. See Figure 37.

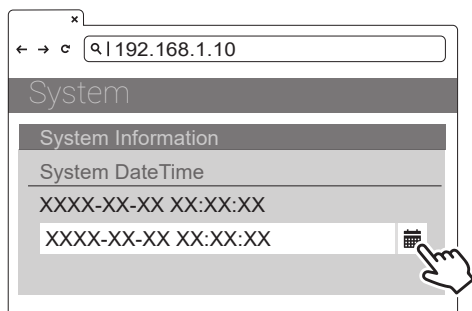


Figure 37. Select Date/Time

5) Select SET and wait until the seeing completion window appears. See Figure 38.

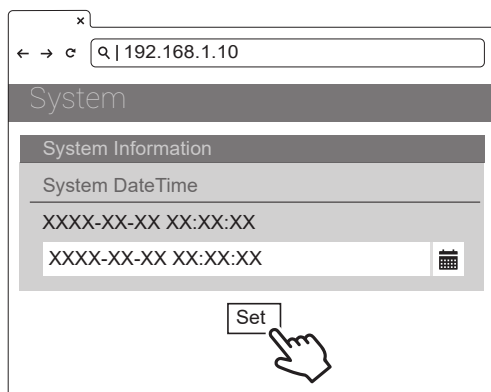


Figure 38. Set Date/Time

Appendix A - Package List

Item	Description	No.	Remark
1	EVSE-Power Cabinet	1	
2	User manual	1	
3	OQC Report	1	
4	Key of cabinet	1	
5	Waterproof Plastic Bolts	4	
6	CAT6A FTP RJ45 Plug	2	
7	M16 X L40 screws assembly	2	
8	Breaker lock & key	4	

Appendix B - Torque Requirements Table

Metric Size	Type	Steel lbf-in	Steel Kg-cm	Steel N-m	Aluminum Kgf-cm	Aluminum N-m
M2*0.4	Machine	3~4.77	3.5~5.5	0.34~0.54	3~4.5	0.34~0.44
M2.5*0.45	Machine	3~4.77	3.5~5.5	0.34~0.54	3~4.5	0.34~0.44
M3*0.5	Machine	5.5~9	6.5~10.5	0.64~1.04	5.2~8.4	0.51~0.82
M3.5*0.6	Machine	8.5~13	10~15	0.98~1.47	8~12	0.78~1.18
M4*0.7	Machine	13~18	15~21	1.47~2.06	12~17	1.18~1.66
M5*0.8	Machine	25~34	29~39	2.84~3.82	23~32	2.26~3.14
M6*1.0	Machine	45~55	52~63.5	5.1~6.22	42~51	4.11~5
M6*1.0	Hex cap	85~112	98~129	9.6~12.65	78~103	7.65~10.1
M8*1.25	Machine	106~141	122~163	11.96~15.98	98~130	9.61~12.75
M8*1.25	Hex cap	205~274	237~316	23.24~30.98	190~253	18.63~24.8
M10*1.5	Hex cap	212~382	245~440	24.02~43.15	196~351	19.22~34.42
M12*1.75	Hex cap	372~668	430~770	42.17~75.49	343~615	33.63~60.3
Imperial Size	Type	Steel lbf-in	Steel Kg-cm	Steel N-m	Aluminum Kgf-cm	Aluminum N-m
2-56	Machine	1.5~2	1.7~2.3	0.17~0.22	1.4~1.8	0.14~0.18
4-40	Machine	3~4	3.5~4.5	0.34~0.44	2.8~3.6	0.27~0.35
6-32	Machine	6~10	7~11.5	0.68~1.13	5.6~9.2	0.55~0.9
8-32	Machine	10~15	11.5~17	1.13~1.66	9.2~14	0.9~1.37
10-32	Machine	16~24	18.5~28	1.81~2.74	15~22	1.47~2.16
1/4-20	Machine	35~46	40~53	3.92~5.2	32~42	3.14~4.11
1/4-20	Hex cap	57~77	66~89	6.47~8.73	53~71	5.2~6.96
5/16-18	Hex cap	119~158	137~182	13.43~17.85	110~145	10.77~14.21
3/8-16	Hex cap	205~274	237~316	23.24~30.99	190~253	18.63~24.82
7/16-14	Hex cap	338~451	390~521	38.24~51.09	312~416	30.59~40.79
1/2-13	Hex cap	515~686	595~792	58.35~77.66	476~634	46.68~62.17



Manufacturer Contact Info Sticker

