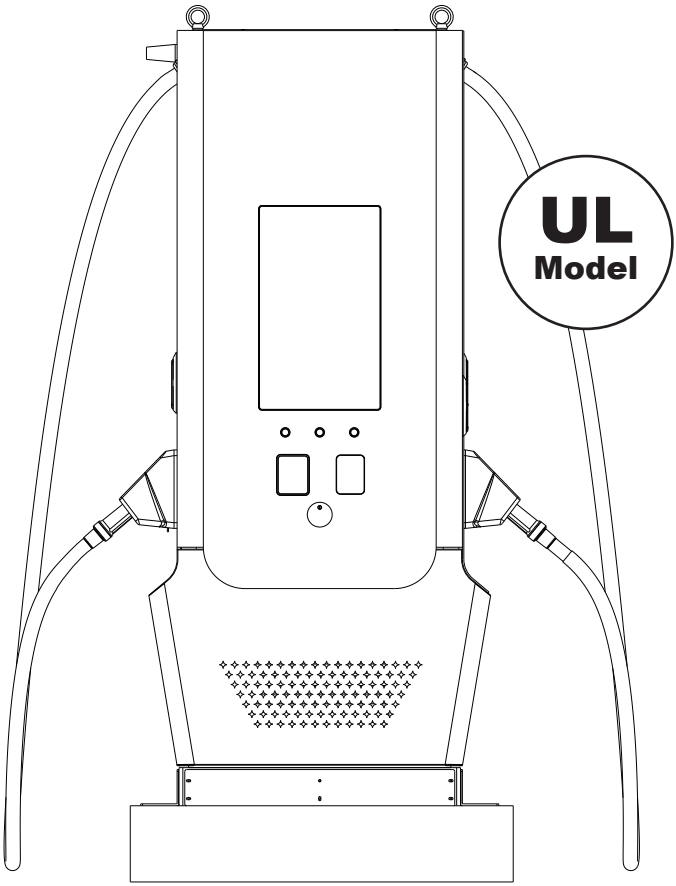
DT160-DT240 Standalone DC Fast Charger

Installation Manual



W84A99900355-RB2

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Revision History				
Version	Date	Description	Author	
			Writer	Editor
V0.0	2024/01/30	• First issue	Clara	Clara
V1.0	2024/010/07	• Modify the DT240 Explosion Diagram • Modify Section 3.12: Breaker Lock Removal	Clara	Tammy
V1.1	2025/05/20	• Revise M5 screw quantity of packing list.	Natalia	Vivian

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 700kg. 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 intent of this manual is to provide a guide for the installation of the Standalone DC Fast Charger. The owner/operator of the charger is responsible for contracting an installer, and must make sure that all national/local codes, laws, and regulations are complied with during the installation.

Compliance with the information in this manual does NOT relieve the owner/operator of their responsibility to comply with all applicable codes and safety standards.To provide feedback on the contents of this manual or request additional information please contact your supplier.

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 / OCPP 2.0

1. Specifications and Features

1.1. Device User Interface

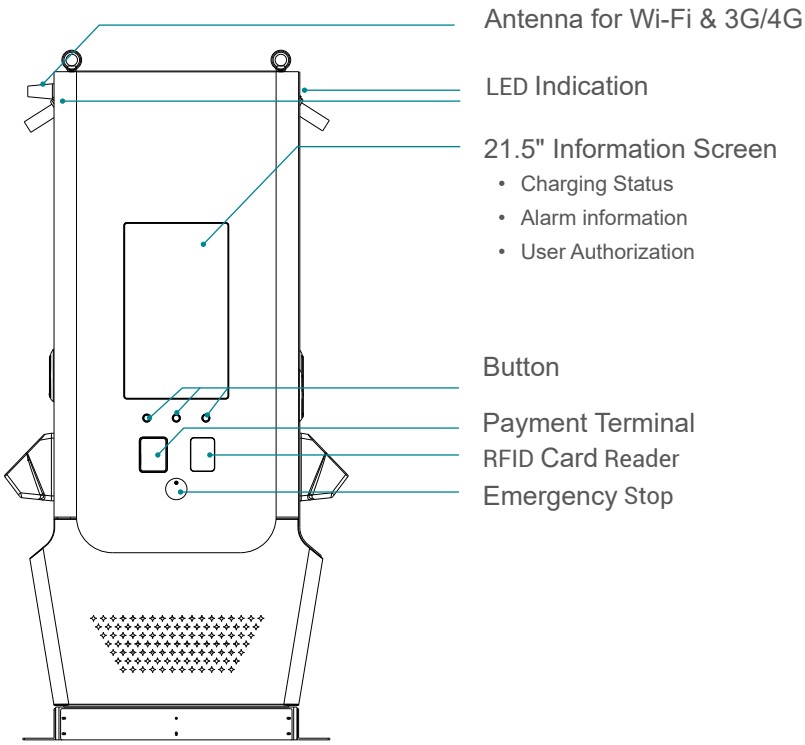


Figure 1. User Interface

1.2. Product Specifications

DT160/200/240 Series		
AC Input	Voltage Rating	3Φ480Vac (+10%, -15%)
	Max. Input Current	**160kW:** 207A@277Vac **200kW:** 259A@277Vac **240kW:** 310A@277Vac
	Electrical Distribution	3P+ N+ PE (Wye configuration)
	Power Grid System	TN/TT
	Frequency	50/60Hz
	Power Factor	> 0.99 at full load
	Efficiency	> 95%, at optimize V/I point
	Current THD	< 5% at full load
	SCCR	65kA
DC Ouput	Output Voltage Range	DC 200 ~ 950V (CCS) DC 200 ~ 500V (CHAdeMO)
	Maximum Output Current	Please refer to table 1
	Maximum Output Power	160kW-240kW
	Simultaneously Output Mode	Dynamic Load distribution Please refer to table 2
	Voltage Accuracy	±2%
	Current Accuracy	±2%
Electrical Isolation	Isolation between Input and Output	
Standby Power	< 150W	
Communication	External	Ethernet, Wi-Fi and 3G or 4G
	Internal	CAN Bus/ RS485
Input Protection	OVP[*1], OCP*[2], OPP[*3], UVP[*4], GFCI[*5], SPD[*6]	
Output Protection	SCP, OCP, OVP, LVP[*7], OTP[*8], IMD[*9]	
Internal Protection	OTP, AC contactor detection, DC contactor detection, Fuse detection	

Load Management	Via OCCP 1.6/2.0 JSON	
User Interface and Control	Display	21.5" Touch Media Display
	Button	Right Button: Select Connector Middle Button: Select function Left Button: Select Connector
	User Authentication	RFID: Support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966),Backend OCPP: 2D barcode, APP, Mobile Payment, 3rd party payment systems
	Backend Support	OCPP 1.6/2.0 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 (6560 ft)
Regulations	Safety	UL2202, UL2231 – U.S CSA C22.2#107.1:2016 – Canada
	EMI/EMC	FCC CFR Title 47 Part 15 Subpart B: 2020 ANSI C63.4: 2014 ICES-003:2020 Issue 7
	Charging Interface	CHAdeMO Ver 1.2 CCS DIN 70121 IEC ISO 15118
Mechanical Specifications	Dimensions LxWxH	1047 x 662 x 2037 (mm) without CMS 1205 x 662 x 2200 (mm) with CMS
	Weight (typ.)	<700kg with two charging plugs
	DC Charging Connector	See Table 3
	Cooling	Liquid cooling or Natural cooling
	Ingression Protection	NEMA 3R
	Anti-vandalism	IK10,excluding LCD & RFID cover

Table 1. Product Specifications

*[1] OVP= Over Voltage Protection, *[2] OCP=Over Current Protection, *[3] OPP=Over Power Protection,
*[4] UVP=Under Voltage Protection, *[5] GFCI=Ground-Fault Circuit Interrupter, *[6] SPD=Surge Protection Device,
*[7] LVP=Low- Voltage Protection, *[8] OTP=Over Temperature Protection, *[9] IMD=Insulation Monitoring Device

Table 1 Maximum Output Current

Plug Code	160kW	200kW	240kW
T CCS1 300A	300A@200Vdc ~ 533Vdc when output voltage up to 950Vdc the output current is 168A	300A@200Vdc ~ 666Vdc when output voltage up to 950Vdc the output current is 210A	300A@200Vdc ~ 800Vdc when output voltage up to 950Vdc the output current is 252A
A CCS1 375A	375A@200Vdc ~ 426Vdc when output voltage up to 950Vdc the output current is 168A	375A@200Vdc ~ 533Vdc when output voltage up to 950Vdc the output current is 210A	375A@200Vdc ~ 640Vdc when output voltage up to 950Vdc the output current is 252A
I CCS1 300A boost 500A	500A@200Vdc ~ 320Vdc when output voltage up to 950Vdc the output current is 168A	500A@200Vdc ~ 400Vdc when output voltage up to 950Vdc the output current is 210A	500A@200Vdc ~ 480Vdc when output voltage up to 950Vdc the output current is 252A
V CCS1 500A (Liquid Cooling)	500A@200Vdc ~ 320Vdc when output voltage up to 950Vdc the output current is 168A	500A@200Vdc ~ 400Vdc when output voltage up to 950Vdc the output current is 210A	500A@200Vdc ~ 480Vdc when output voltage up to 950Vdc the output current is 252A
J CHAdeMO 120A	120A@200Vdc ~ 500Vdc	120A@200Vdc ~ 500Vdc	120A@200Vdc ~ 500Vdc
K CHAdeMO 200A	200A@200Vdc ~ 500Vdc	200A@200Vdc ~ 500Vdc	200A@200Vdc ~ 500Vdc
W CHAdeMO 200A boost 350A	350A@200Vdc ~ 457Vdc when output voltage up to 500Vdc the output current is 320A	350A@200Vdc ~ 500Vdc	200A@200Vdc ~ 500Vdc

Table 2. Maximum Output Current

Table 2 Dynamic Sharing Output Mode

DT160

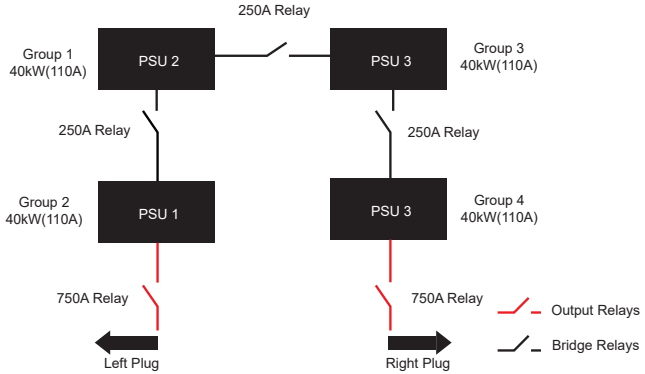


Figure 2. DT160 Dynamic Sharing Output mode

	Left Plug	Right Plug
1	0kW	160kW
2	40kW	120kW
3	80kW	80kW
4	120kW	40kW
5	160kW	0kW

Table 3. DT160 Dynamic Sharing Output mode

DT200

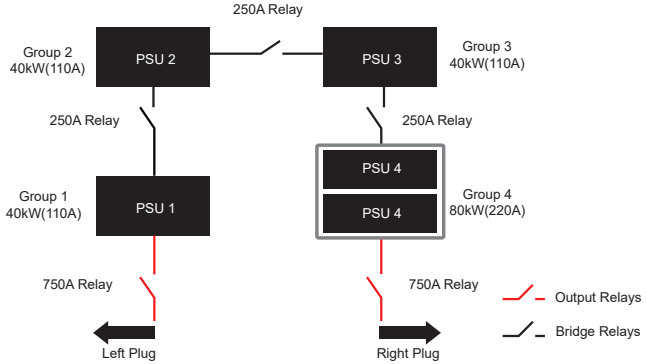


Figure 3. DT200 Dynamic Sharing Output mode

	Left Plug	Right Plug
1	0kw	200kw
2	40kw	160kw
3	80kw	120kw
4	120kw	80kw
5	200kw	0kw

Table 4. DT200 Dynamic Sharing Output mode

DT240

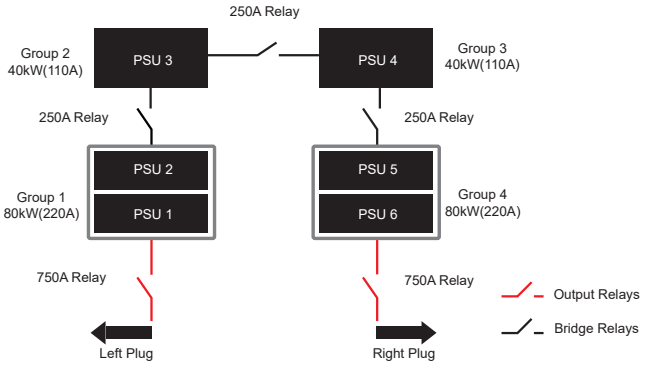


Figure 4. DT240 Dynamic Sharing Output mode

	Left Plug	Right Plug
1	0kw	240kw
2	80kw	160kw
3	120kw	120kw
4	160kw	80kw
5	240kw	0kw

Table 5. DT240 Dynamic Sharing Output mode

1.3 Dimensions

Unit: mm

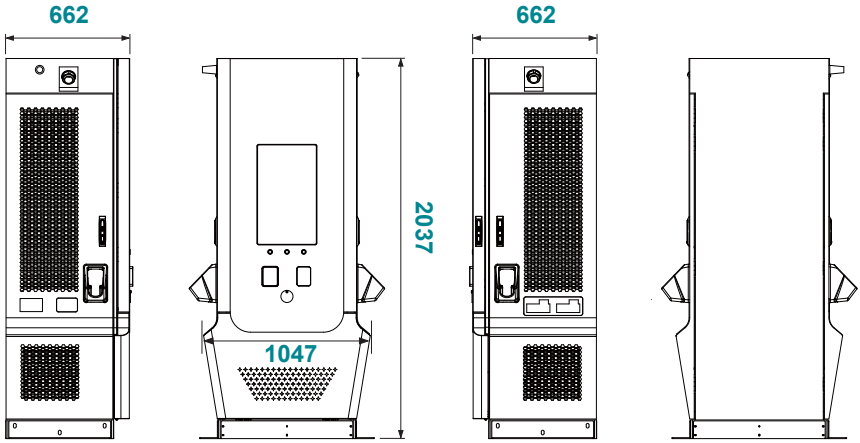


Figure 5. Dimensions

1.4 Airflow Direction

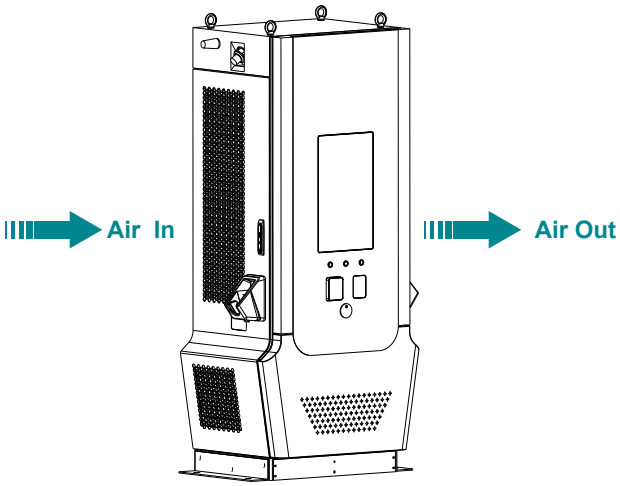


Figure 6. Airflow Direction

1.5 Detailed View of Charger

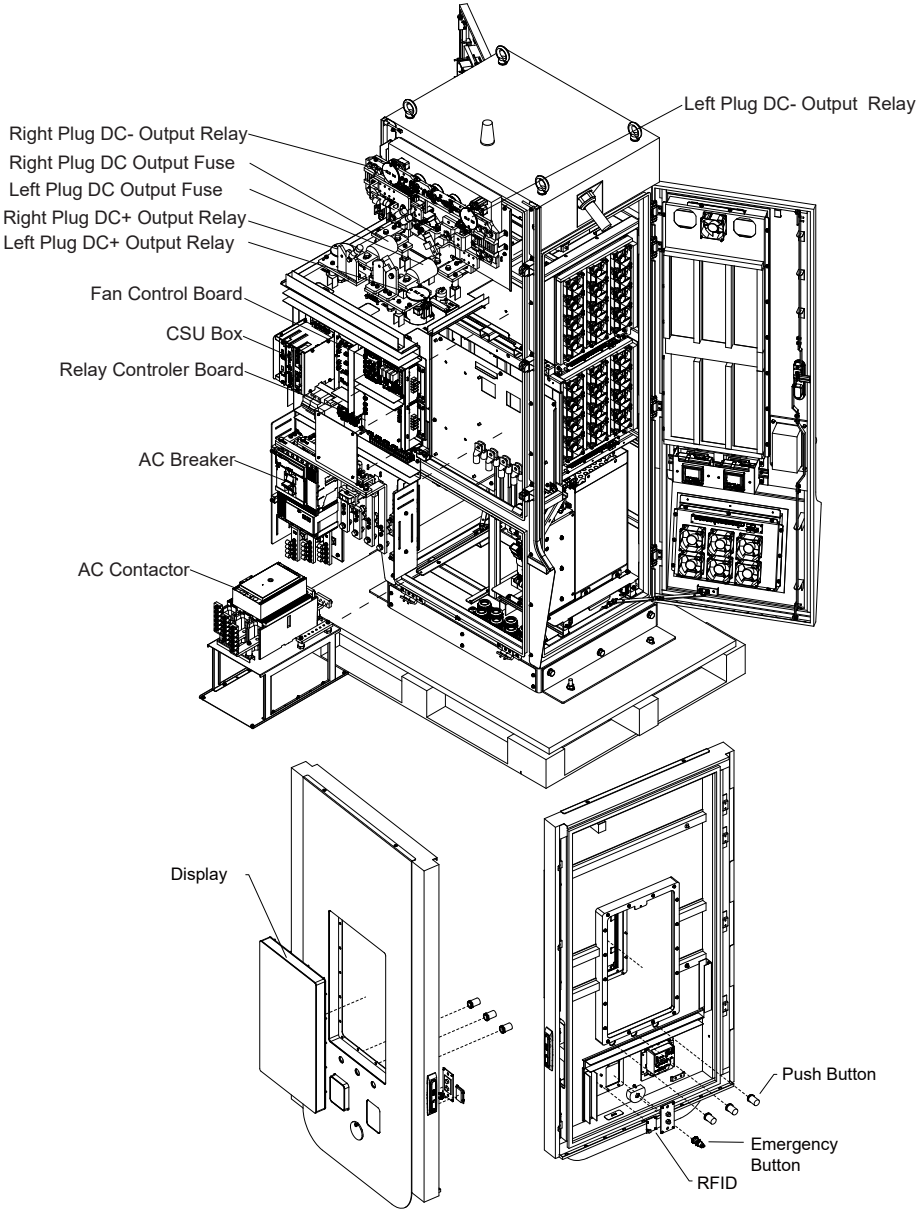


Figure 7. Detailed View of Charger

NOTE

The emergency botton cover can be only opened counter clockwise while credit card reader is installed.

1.6 Version Description

The DT240-DT160 series is available in many different configurations. See Table 6 for available model numbers and their corresponding features.

Version	Left DC Connector	Right DC Connector
DTWU242J0V	CHAdeMO	CCS1
DTWU242V00	CCS1	-
DTWU242V0V	CCS1	CCS1

Table 6 . Version Number Features

NOTE
The letter “X” represents a variance in function.

1.6.1 Naming Rule

Example: See Table 4, Table 5 and Table 6.

DTWX^{1}X^{2}X^{3}X^{4}X^{5}X^{6}X^{7}X^{8} X^{9} X^{10} X^{11}−RW*

X^{1}			
E	CE	P	DC Meter
R	CNS	M	AC Meter

Table 7. X^{2}–X^{7}

X^{2}X^{3}X^{4}		X^{5}X^{6}X^{7}	
X^{2} X^{3} X^{4} = (X^{2} × 10 + X^{3}) × 10^(−1 + X^{4})kW		Connector/Socket 1, 2 and 3 from left to right	
162	160kW	U/E	CCS1 200A/CCS2 200A
202	200kW	R	CCS2 250A
242	240kW	D	CCS2 300A
		T	CCS1 300A
		I	CCS1 300A boost 500A
		Q	CCS2 300A boost 500A
		F	CCS2 500A(Liquid Cooling)
		G	GB 250A
		J	CHAdeMO 120A
		K	CHAdeMO 200A

Table 8. X^{2}–X^{7}

X[8]		X[9]		X[10]X[11]	
Network Option		Generation, depends on different models		Customization letter	
D	Ethernet + WiFi + 4G	1	Standard 21.5"	WN	Standard cabinet 5m
3	Payter (payment terminal)	2	Standard 21.5" New Design	WS	Standard cabinet 7m

Table 9. X[8]–X[11]

2. Unpacking and Moving

The EVSE will be delivered on a pallet to a warehouse or specified location. Transportation to the final destination is the responsibility of the customer / contractor.

Damage to the packaging caused by tilting, falling, or impact during transportation can cause damage or defects. If there is any serious damage to the packaging when receiving the unit, notify the supplier.

NOTE

The TiltWatch indicator turns red if the package was tilted over 80°. If the indicator is red:



1. Do not refuse the shipment or receipt.
2. Note the red indicator on the delivery receipt.
3. Inspect the cabinet for damage.
4. If damage is discovered, leave the cabinet in the original package and request inspection from the carrier within 3 days of delivery.
5. Contact the supplier by mail or phone.

WARNING

The EVSE with its packaging can weigh up to 1679.93lbs (762kg). Be careful when unpacking.

	without packing weight	with packing weight
160kW	1201.52lbs (545kg)	1578.51lbs (716kg)
200kW	1252.23lbs (568kg)	1629.22lbs (739kg)
240kW	1302.94lbs (591kg)	1679.93lbs (762kg)

Table 10. charger weight

1) Remove the wooden sides of the package. See Figure 8.

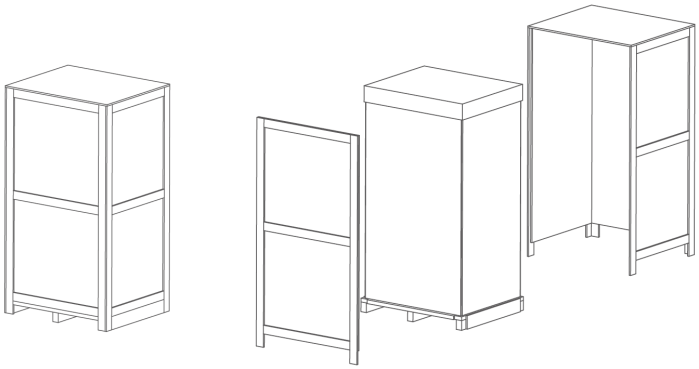


Figure 8. Unboxing 1

2) Remove the carton, packing cushion, and film. See Figure 9.

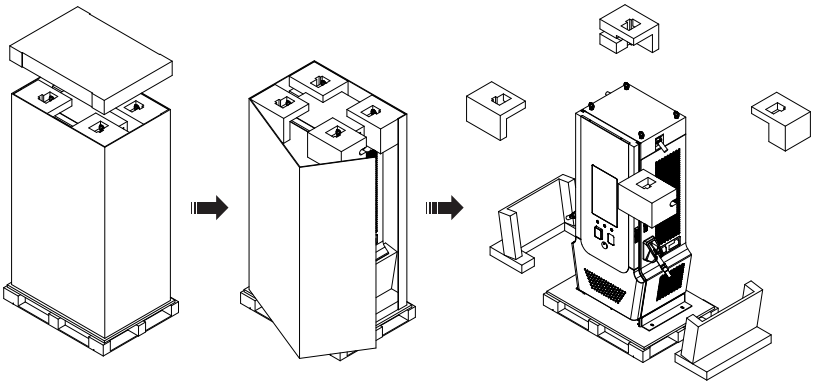


Figure 9. Unboxing 2

3) Remove the 4pcs M12 bolts that attach the EVSE to the pallet. See Figure 10.

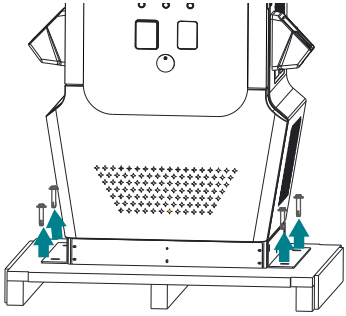


Figure 10. Detaching from Pallet

4) To move the EVSE using a crane, attach a bridle hitch with four legs to the eye bolts using ¼ in. (6mm) diameter steel cables. Each leg of the hitch should be 31.5 in. (800mm) in length. See Figure 11.

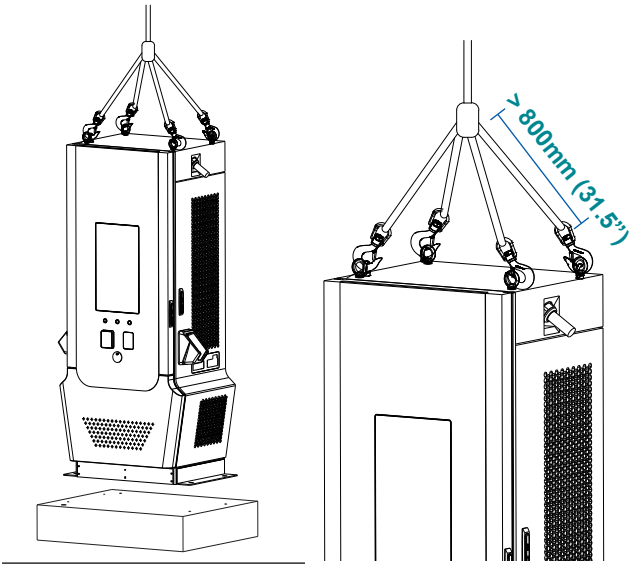


Figure 11. Moving the EVSE via Crane

5)To use a forklift to move the EVSE, first remove the bottom trim panels from the front and back of the EVSE, then lift the EVSE with the forklift. See Figure 12.

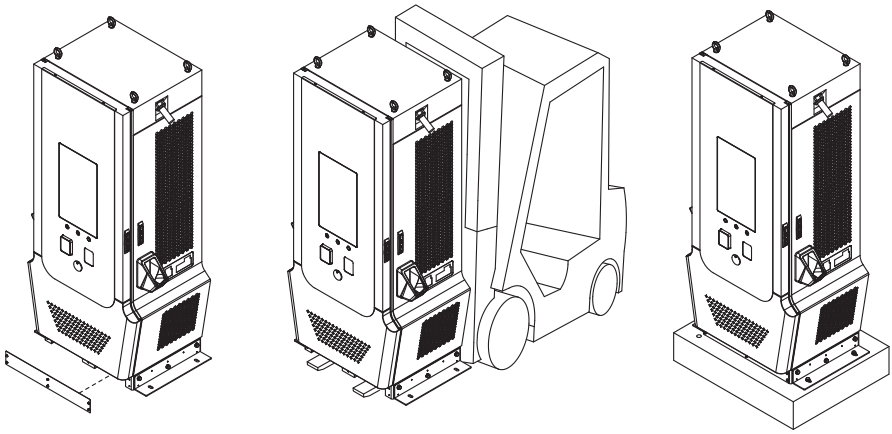


Figure 12. Moving the EVSE via forklift

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 13. 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.

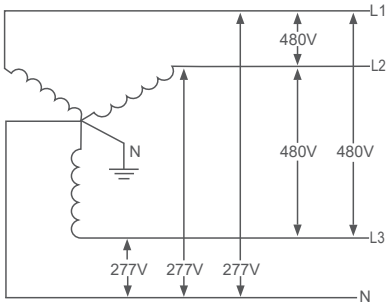


Figure 13. 277/480V Y Three-Phase Wiring Connection

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 lighting 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 the power supply should be higher than 521kVA for the EVSE to function correctly.

NOTE
The EVSE should have at least 39.4 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

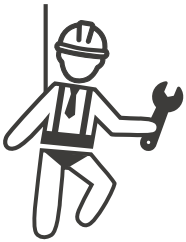


Country	Standards
British	BS1129,BS2037,EN131,EATS13/1
USA	ANSI A 14.1,ANSI A 14.2,ANSI A 14.5
Australia New Zealand	AS 1892.2-1922,AS/NZS1892.1,AS/NZS 1892.3
Canada	CSA Z11 M81

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 area for placing and maintaining

- See Figure 14. Required area is 89.05in x 108.34in (2662mm x 2752mm) calculated as follows:
- EVSE Size: W = 26.06in (662mm) × D = 29.6in (752mm) × H = 80.19in (2037mm).
- Front side clearance: 39.37in (1000mm), in order to open the front door.
- Left and right clearance: 39.37in (1000mm), in order to open left and right door.
- Backside clearance: 39.37in (1000mm), in order to guarantee unimpeded airflow.

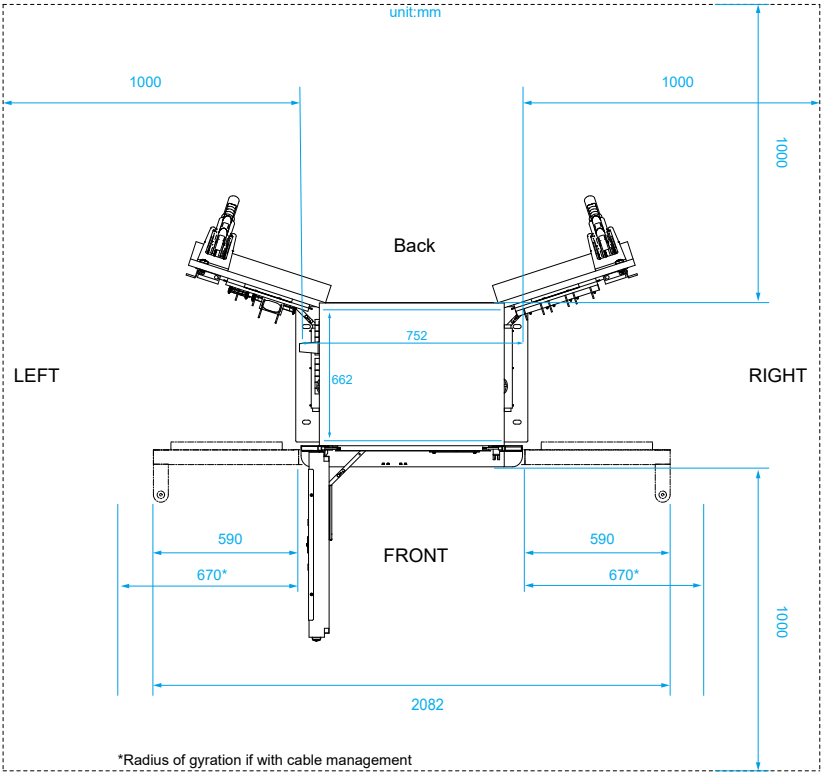


Figure 14. Placement Dimension Requirements

3.3 Tools and Materials

Type	Description
Philips Screwdriver	No. 2 and 3
Adjustable Wrench	
Socket Wrench	8mm, 10mm, 17mm, and 18mm
Electrical Tape	Black / 15mm (0.6 in.) Width
Crimping Pliers for Ring Terminal	Hexagonal
Wire Stripper	
Wire Cutters	Hexagonal
Crane / Forklift	1985 lbs (900kg) minimum
Cable gland	
Waterproof sealing glue	

Type	Description
AC Input Cable	3/0AWGx2 for L1, L2, L3, N, and 3/0AWGx1 for PE. Recommended using 600V, 75°C, XLPE power cable
Ring Terminal	Ring Terminal for L1, L2, L3, N and PE (Inner Diameter: 10.5mm (0.41 in.))
Ethernet Cable	5m Length
Circuit Breaker	400A or above, B Curve type, with 30mA, Class C, GFCI

3.4 Building the EVSE Base

See Figure 15 and Figure 16.

1) Build a level concrete base with the following minimum dimensions:

- Area: 43.31in (1100mm) × 33.47in (850mm)
- Height : 7.87in (200mm)
- Inner concrete base: dig down into the ground with 23.62in-31.50in (600mm-800mm)

2) Install a PVC AC cable conduit Ø5in x2pcs

3) Install a PVC SFTP Ethernet cable conduit Ø1.5in. x1pcs

4) Install a PVC drain pipe Ø1in. x1pcs

5) Attachment method 1: Install four M12 threaded rods at a length of Ø1.18in (30mm) per Figure 15 and Figure 16. The threaded rods need to be installed within the following tolerance of the screw holes on the EVSE:

- Short Axis: ±.08in (2mm)
- Long Axis: ±.32in (8mm)

NOTE

It is recommended to create or use a metal match-drill plate, per Figure15, to make sure placement of threaded rods and holes are in the proper position.

6) Attachment method 2: Drill four Φ.63in (Φ16mm) bolt holes to use the 2 L-brackets that come in the accessory pack. See Figure 15.

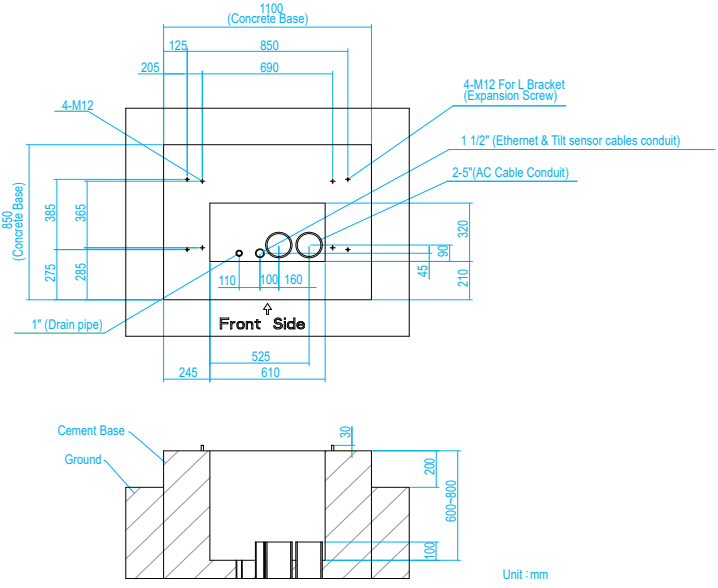


Figure 15. Installation Dimensions

7) Extend the 3 phase 8 wire AC input cables from conduit of concrete base. See Figure 16.

- AC Cables: At least 3/0AWGx2 width two for each L1, L2, L3, N and one for PE. Include ring terminals with a diameter of 0.41 in. (10.5mm) for L1, L2, L3, N and PE.
- If internet is connected via Ethernet, expose at least 65in (1650mm) of cable from the conduit.

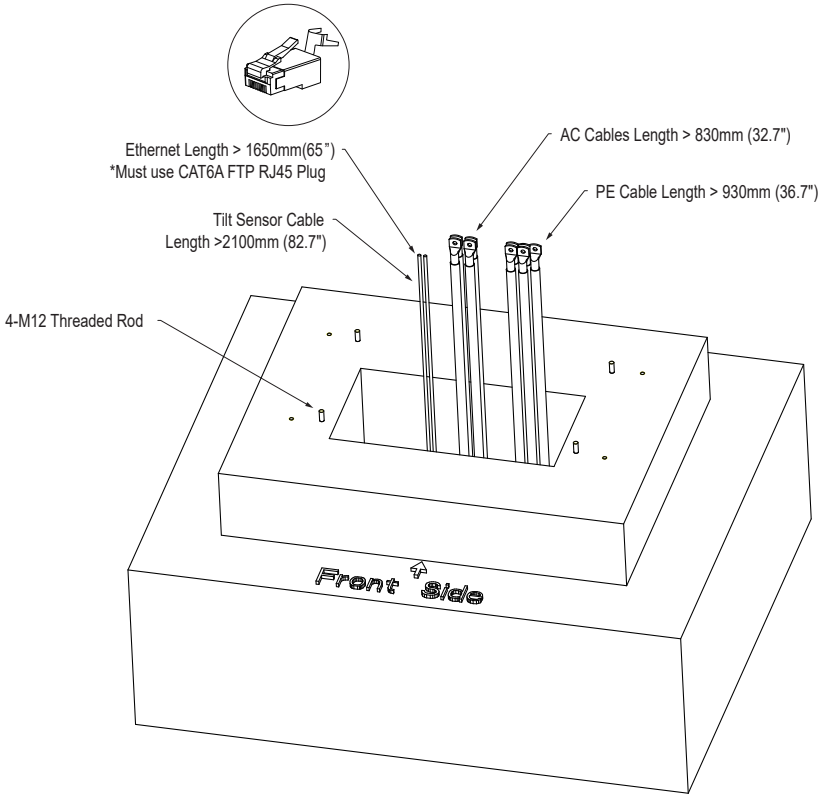


Figure 16. Cable Throughput

3.5 Securing the EVSE (Method 1)

1) Lift the charger over the concrete base. See Figure 17.

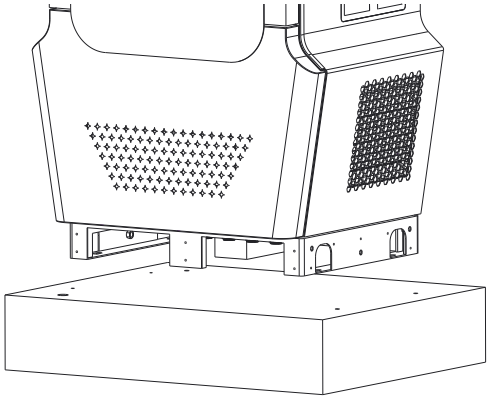


Figure 17. EVSE Placement

2) Pull the input cables through the bottom hole of the charger.

3) Attach 4 washer and 8 nuts (2 each) to the 4 pcs of M12 threaded rods. See Figure 18.

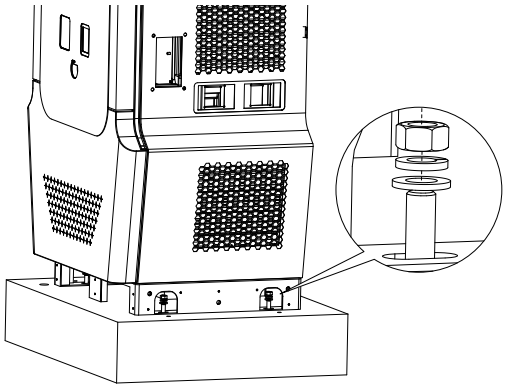


Figure 18. EVSE Attachment

4) Attach the base cover (in the accessory pack) to the EVSE. See Figure 19.

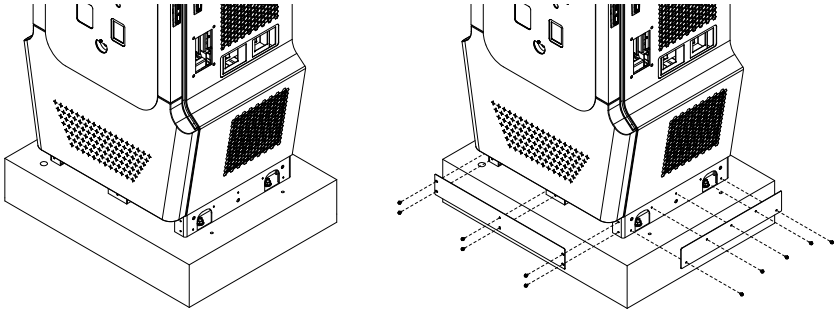


Figure 19. Base Cover Install

3.6 Securing the EVSE (Method 2)

1) Attach the L-brackets using 6 M12 expansion bolts. See Figure 20.

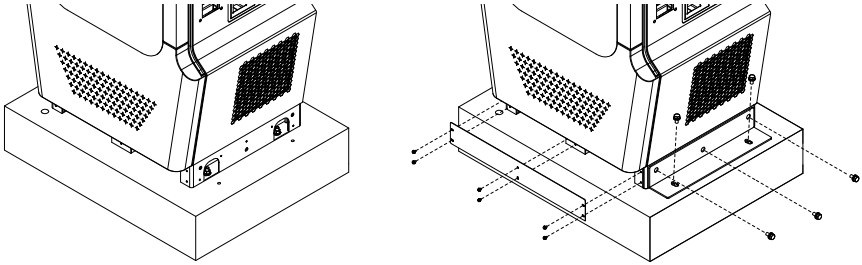


Figure 20. L-Bracket Install

NOTE

If the eye bolts on top of the cabinet are removed, the plastic bolts (from the accessory pack) must be installed using waterproof sealant. See Figure 21.

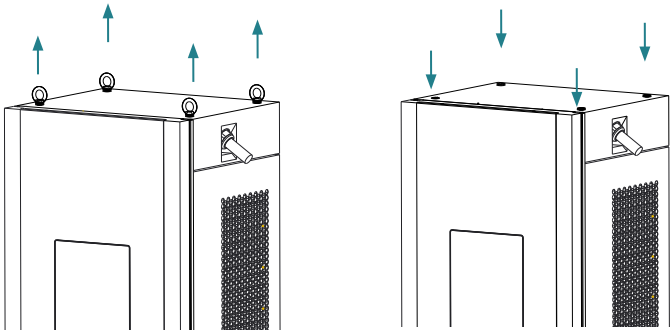
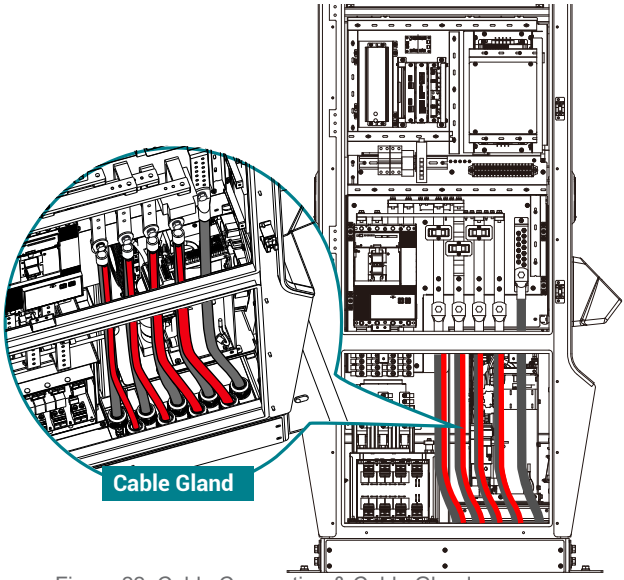


Figure 21. Eye Bolt Removal

3.7 Cable Installation

1) Open the door and remove the protective cover for the wiring. See Figure 22.



Cable Gland:
*M32x9pcs
*M16x2pcs

Figure 22. Cable Connection & Cable Gland

2) Cut and strip AC cables according to requirement. Clamp ring terminals on AC cables.

3) Connect AC cables L1, L2, L3 and N to the busbars (See Figure 22). Attach each wire and torque the fasteners according to "Appendix B- Torque Requirements Table".

4) Connect the PE wire (Green/Yellow) to Grounding position of the EVSE and torque the fastener according to "Appendix B - Torque Requirements Table".

5) Make sure you have enough slack in each cable, then fasten the cable grand(if needed). (See Figure 22).

6) Route the AC power cables to the power distribution box.

7) Connect the PE wire (Green/Yellow) to the ground point of the power distribution box.

8) Short the Neutral to the ground point to meet TN (-S) grounding system requirements.

9) Connect the Ethernet cable to the EVSE RJ-45 port. (See Figure 34)

10) Connect L1, L2, L3, and the Neutral wire to the external breaker. Minimum Breaker Specifications: 400A or above, B Curve type, with 30mA, Class C, GFCI.

NOTE

Please note that the lower door must be well-wrapped to avoid scratch while unassembled.

3.8 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.

3.9 Connecting the Upstream Circuit Breaker

Upstream circuit breaker selection:

It is the responsibility of the installer to choose an appropriate SOR (Shunt Opening Release) circuit breaker (in accordance with local codes) or equivalent device, for the safety function of the EVSE to be activated. See Figure 23.

NOTE

Below are reference CBs:

Part Number	Nomenclature	Manufacturer
3VA9978-0BL33	208-277 Vac/220-250 Vdc	Siemens
LV429387	208-277 Vac	Schneider

NOTE

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

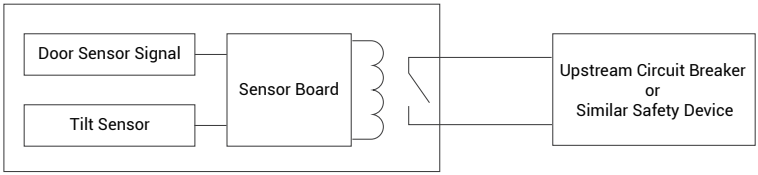


Figure 23. Functional Block Diagram

3.10 Connecting the Sensor Board

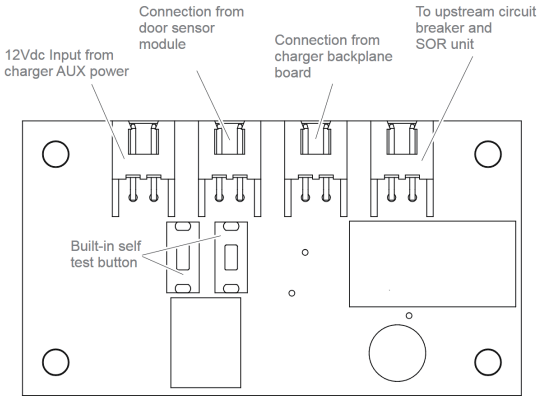


Figure 24. Sensor Board Connectors

3.11 Wire Specifications

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

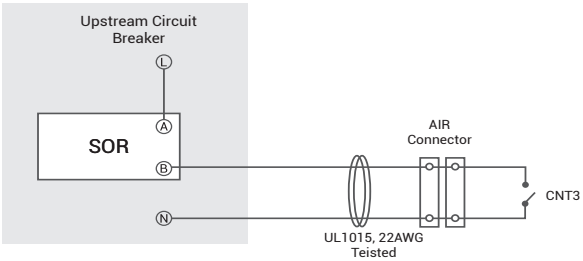


Figure 25. Control Circuit

3.12 Breaker Lock Removal

1) Locate the breaker lock. See Figure 26.



Figure 26. Breaker Unlock

2) Turn the lock key to unlock and remove the lock. See Figure 27 and Figure 28.



Figure 27. Breaker Unlock

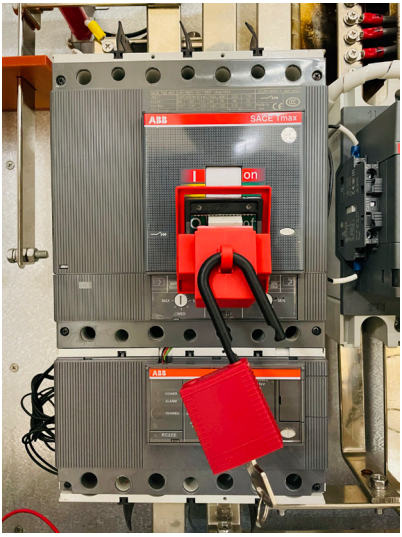


Figure 28. Lock Removal

3) Open the flap to locate the knob. See Figure 29.



Figure 29. Lock Flap Open

4) Turn the knob counter-clockwise and remove the breaker lock. See Figure 30, Figure 31, and Figure 32.

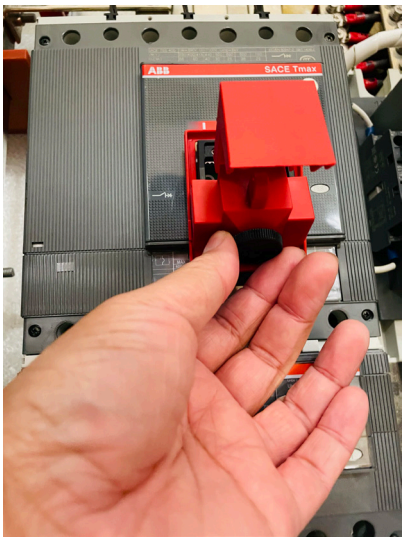


Figure 30. Turn Knob

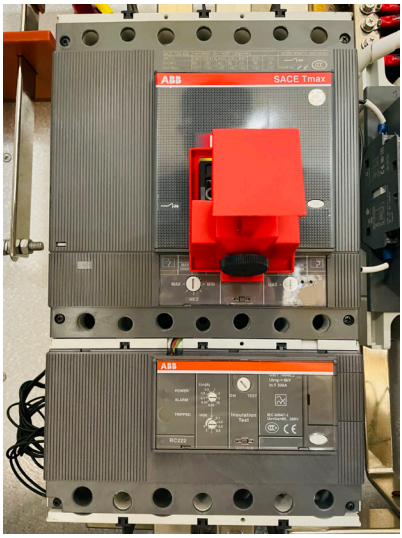


Figure 31. Remove Lock Flap

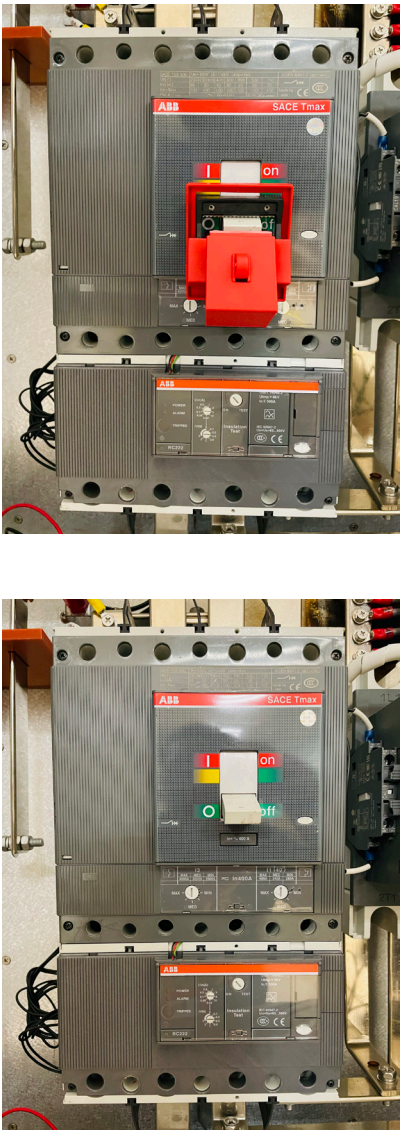


Figure 32. Breaker Unlock

4. Setup

4.1 Laptop Setup

Requirements

- A laptop with a wireless Internet connection and an RJ45 port.
- Connect an RJ45 cable. See Figure 33.
- Laptop IPV4 static IP address set to 192.168.1.1. See Figure 34.

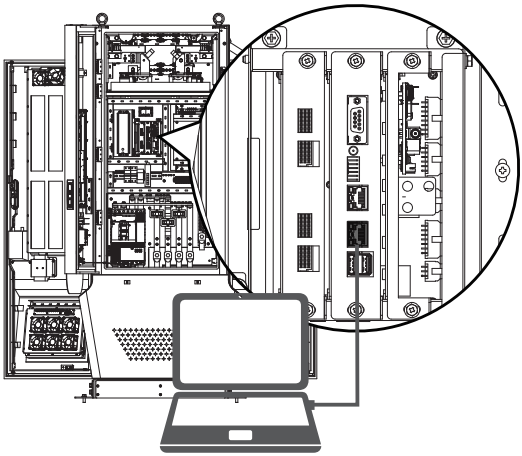


Figure 33. RJ-45 Port

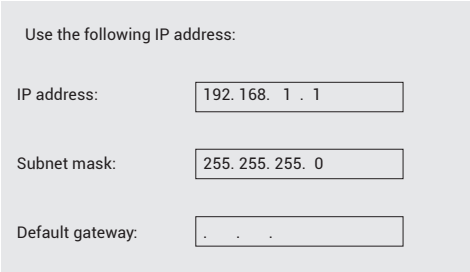


Figure 34. IPV4 IP address

4.2 Login to the EVSE

1) In a web browser, navigate to 192.168.1.10.

2) See Figure 35. On the EVSE Homepage, login with the credentials that follow:

- Account: admin
- Password: 1231231238

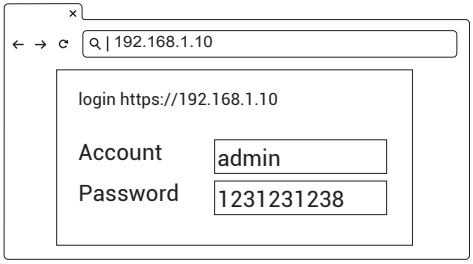


Figure 35. Login

4.3 Setup the Wi-Fi Network

1) Select Network. See Figure 36.

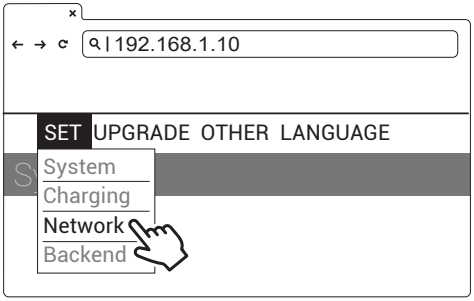


Figure 36. SET Menu

2) Select Wi-Fi Module. See Figure 37.

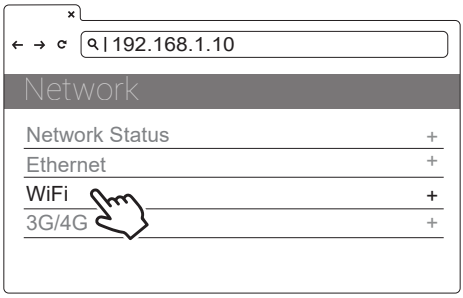
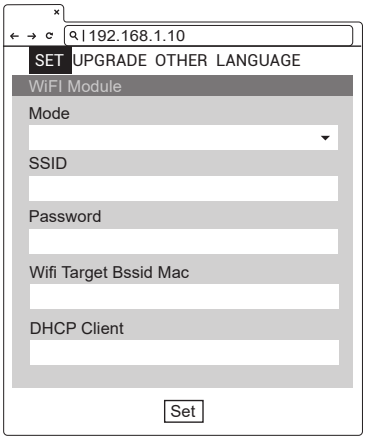


Figure 37. Network Select

3)Select Wi-Fi modes and fill in the SSID and Password, according to your requirements. See Figure 38.



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 38. 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.

4.4 SIM Card Installation

1) Pull out the top tray from the CSU box to access the 4G/Wi-Fi module inside the cabinet. See Figure 39.

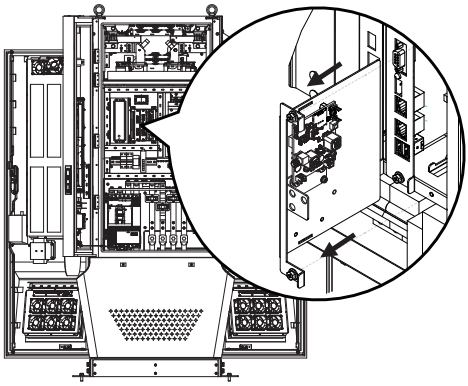


Figure 39. 4G/Wi-Fi Module Access

2) Insert a 3G/4G Micro SIM Card in the tray, make sure the gold contacts are facing down andthe notch is in the upper right corner. See Figure 40.

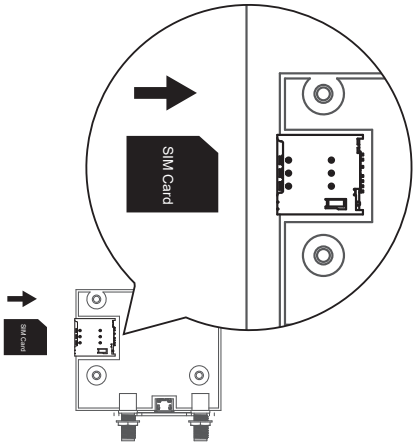


Figure 40. SIM Card Insertion

NOTE

Inserting the sim card wrong can cause damage.

4.5 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 41.

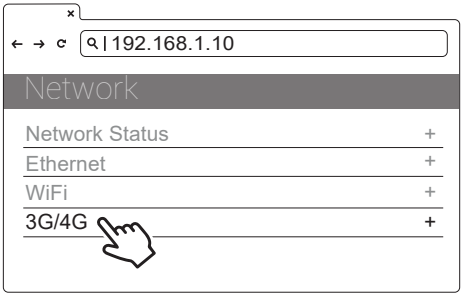


Figure 41. Network Select

5) Fill in the APN, Chap Pap Id, and Chap Pap Pwd information. See Figure 42.

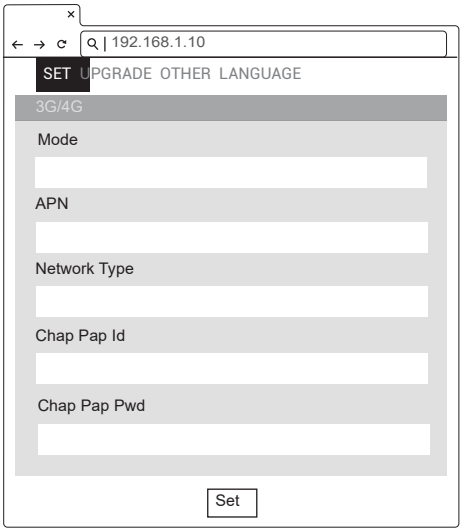


Figure 42. Network Information

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

4.6 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 43.

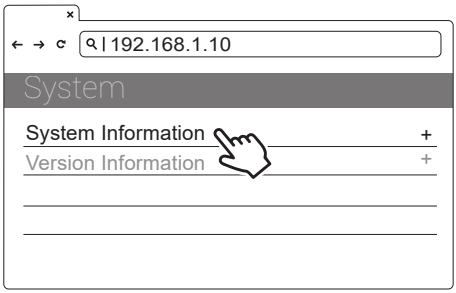


Figure 43. Date and Time Information

4) Select the calendar button on the right ot set the current date and time. See Figure 44.

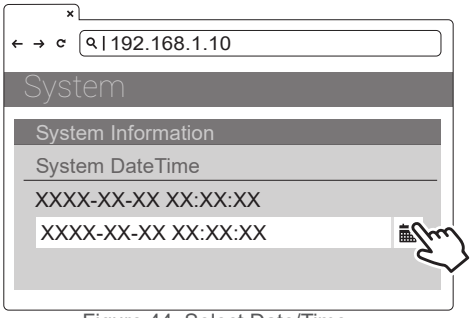


Figure 44. Select Date/Time

5) Select SET and wait until the seeing completion window appears. See Figure 45.

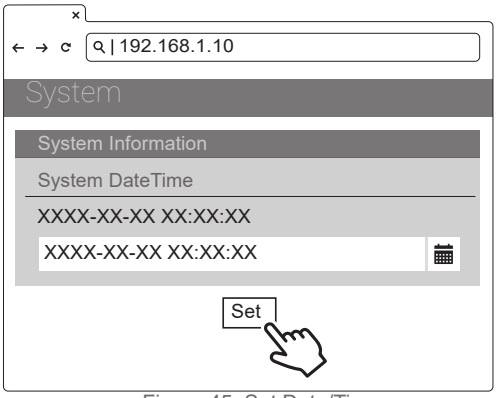


Figure 45. Set Date/Time

5. Installation Inspection and Commissioning

5.1 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		<= 2000m (6560 ft)
Air Circulation / Drafty		
Dust Level		
Anti-Vandalism Measures		

5.2 External Infrastructure Readiness and Check

Item	Status	Remark
Input Wirings and Terminals		Type / Length / Cross Section
Key and Lock of Cabinet Door		
Fixing Screws		Type / No.
MCCB (Moulded Case Circuit Breaker)		Current rating of MCCB shall be higher than or equal to 400A, 4 Port (for L1, L2, L3, N wire)
Input Electricity Capacity		
Input Electricity Configuration		Wye
Grounding Resistance		<10Ω
Grounding System		TN/TT
Grid Voltage and Frequency		

5.3 EVSE Check - Power On



WARNING

Improper connection of the EVSE grounding conductor can result in a risk of electric shock.

Make sure the EVSE is properly grounded prior to energizing.

Item	Status	Remark
Power On		
Screen On		
Acoustic Noise		
Screen Display & Function		
Time Display Correctly		
Network Connection Quality		
Cooling Fans Operation & Noise		
LED Status Indication		
EVSE Setting		
Function of Engineer Mode		
Version of H.W. & F.W.		
Remote Control & Monitoring		
Backend Server Connection		
Network Connectino & Quality		Wi-Fi, 3G/4G > -65dBm

5.4 EVSE Check - Charging

Item	Status	Remark
User Authorization - RFID		
User Authorization - QR Code		
User Authorization - Others		
Waiting Time of Connection Check		
Reading of Each Display Item		
Full Charge Test		Temperature Readings
Function of Electronic Lock		
Reading of Engineer Mode		
Airflow & Noise of Cooling Fan		
Charging Record (log) Upload		
Remote Control & Monitoring		

5.5 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. 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.

Appendix A - Package List

Item	Description	No.	Remark
1	EVSE	1	
2	User Manual	1	
3	EVSE Approved Certificate	1	
4	OQC Report	1	
5	RFID Card	2	
6	Door Key	6	
7	Base Cover	4	
8	M5x10 Screws	10	
9	Breaker Lock	1	
10	Waterproof Plastic Bolts	4	
A	Cable Management	1	Optional
B	Screws for R/S/T/N Busbars	1 kit	
C	Credit Card Reader Plate	1	Depends on Selected Models

Appendix B - Torque Requirements Table

Screw in Metric						
Screw size	Screw type	Steel Inch-Lbs	Steel Kgf-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
M3×0.7	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	2.26~31.4
M6×1.0	Machine	44~55	52~63.5	5.1~6.22	42~51	4.11~5
M6×1.0	Hex cap	82~115	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
Screw in Imperial						
Screw size	Screw type	Steel Inch-Lbs	Steel Kgf-Cm	Steel N-m	Aluminum Kgf-Cm	Aluminum N-m
2-56	Machine	1.5~2	1.6~2.3	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	190~235	18.63~24.82
7/16-14	Hex cap	338~451	390~531	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	46.69~62.17

Appendix C - Preventive Maintenance Check List

No.	Item	Description	0.5 year	1st year	2nd year	3rd year	4th year	5th year
1	Preventive maintenance		I	I	I	I	I	I
2	Appearance inspection	Appearance visual inspection	I	I	I	I	I	I
3	System fan	Fan clean and spinning smoothly check	I	I	I	R	I	I
4	Air filter	Air filter, air inlet and outlet clean	I	I	R	I	I	I
5	Charging cable	Appearance clean	I	I	I	R	I	I
6	PCBA	Visible section clean	--	I	I	I	I	R
7	SPD	SPD status indication check	I	I	I	I	I	R
8	DC output bolts torque	Bolts torque check	--	I	I	I	I	I
9	AC input bolts torque	Bolts torque check	--	I	I	I	I	I
10	LCD display	Display sharpness and back-light check	--	I	I	I	I	R
11	Selection button	Indication light and function check	--	I	I	I	I	R
12	RFID reader	Function check	--	I	I	I	I	R
13	Emergency stop button	Function check	--	I	I	I	I	R
14	Breaker and RCD	Function check	--	I	I	I	I	R
15	Aux power supply	No maintenance requirement	--	--	--	--	--	R
16	PSU module	Not applicable for Dispenser	--	--	--	--	--	R
17	Coolant level	Level inspection or refilling	I	I	I	I	I	I

Note

Depending on the environment, user may decide the timing of filter replacement.

I: Inspection recommended

R: Replacement or refill recommended

--: No maintenance needed recommended

Manufacturer Contact Info Sticker