

CoRe+ Max™

Installation Manual



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About CoRe+ Max™

The **CoRe+ Max™** is part of a family of Level 2 charging stations that are adaptable for a wide range of parking layouts including workplaces, condos, apartments, fleets, and commercial properties. They are ideal for sites where several high-capacity electric vehicles, such as commercial service trucks and school buses, need to charge simultaneously, because they can be cascaded to minimize installation costs for the entire site.

Canada and USA Electromagnetic Interference Regulatory Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Changes or modifications to this equipment not expressly approved by AddEnergie may void the user's authority to operate this equipment.




Exposure to Radio Frequency Energy: The radiated power output of the communication modules included in this device is below the limits recommended for the general population for uncontrolled exposure as defined in the FCC standards. This device should be operated with a minimum distance of at least 20 cm between itself and a person's body and must not be co-located or operated with any other antenna to comply the conditions of the FCC Grants.

Important Safety Instructions

Read all instructions before using this product.

PLEASE SAVE ALL THE INSTRUCTIONS OF THIS MANUAL.

Safety Symbols On Your Unit

Symbol	Meaning
	Alternating current
	Phase
	This unit is equipped with a protective conductor terminal

Instructions Pertaining To A Risk Of Fire Or Electric Shock



WARNING:

This symbol is used to provide warning of hazardous voltage and possibility of electric shock.



CAUTION:

This symbol is used to provide awareness of important safety information in these instructions.



WARNING:

When using electric products, basic precautions should always be followed, including the following. This manual contains important instructions for Model CoRe+ Max™ that shall be followed during installation, operation, and maintenance of the unit.

Important General Safety Instructions

- This device should be supervised when used around children.
- Never insert your finger into the electric vehicle connection.
- Never use the EVSE if the flexible power cord or EV cable is frayed, has broken insulation, or any other signs of damage.
- Never use the EVSE if the enclosure or the EV connector is broken, cracked, open, or shows any other signs of damage.
- This EVSE was designed to be used with electric vehicles equipped with a SAE-J1772 connector.
- This EVSE is to be used to charge vehicles that do not require a ventilated environment during charging.
- Make sure to always disconnect the power supply of the EVSE before servicing.
- Avoid installing the EVSE in bad weather conditions.

**CAUTION**

Always use a manual screwdriver only; DO NOT use an impact driver for the screws at any times, otherwise, it will void the warranty.

**CAUTION**

To reduce the risk of fire, connect only to a circuit provided with appropriate branch circuit overcurrent protection (see TABLE 1) in accordance with the Canadian Electrical Code (CSA C22.1-12) and the National Electrical Code (ANSI/NFPA 70).

- 1** Handle packing with care. Always use safety glasses and gloves when unpacking and installing.
- 2** Communicate with a certified contractor, certified electrician, or trained installer to ensure compliance with local building code, regulation, security standards and weather conditions.
- 3** Verify with local authorities that the location where the EVSE is to be installed is free from underground pipelines or electrical equipment, otherwise you might inflict yourself serious injuries.
- 4** This EVSE is designed to be wall-mounted or post-mounted.
- 5** If installed on a wall mount configuration do not install on or over a combustible surface.
- 6** Make sure that the types of mounting surface of the wall or the post be strong enough to bear a minimum of 125 pounds (56.7 Kg.) per anchoring point in the vertical and horizontal direction, and that anchors be compatible with the type of mounting surface.
- 7** This product must be connected to a grounded, metal, permanent wiring system, or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the product and installed by a certified electrician.
- 8** Any EVSE part alteration will automatically void the warranty.



Site Preparation Considerations Prior To Installation

- Split Phase 120/240 VAC Supply or single phase 120/208 VAC (Refer to Figure 1 and Figure 2).
- Both lines must have 120V between ground.
- Voltage supply must be grounded.
- Require 2 lines and 1 ground connection. Neutral is not used. (Refer to Figure 1 and Figure 2).
- Maximum output power: 19.2 kW @ 240 VAC or 16.6 KW @ 208 VAC.
- Built-in protection against overvoltage conditions and leakage current to ground.
- Use 90 °C wire copper conductors only.
- Field terminals accept wire between 3AWG and 14.

Rotary Position	Charging station current (A)	Recommended circuit protection (A)	Recommended Wire Gauge (AWG)
0	80	100	3
1	72	90	3
2	64	80	4
3	59	80	4
4	56	70	4
5	48	60	6
6	40	50	6
7	32	40	8
8	24	30	10
9	16	20	14

Install the Communication Gateway prior to the Commissioning of the Station. The Communication Gateway is the property of AddEnergie. Fees will be charged if the Gateway is damaged, lost or not installed according to the installation guide.

IMPORTANT ELEMENTS TO CONSIDER WHEN INSTALLING THE COMMUNICATION GATEWAY:

- An Outdoor installation is recommended. The Customer must provide a waterproof PVC box and install it less than 48,7 meters (160 ft.) from the stations.

Contact us when the Communication Gateway is installed to validate the signal levels and activate Commissioning or for any other questions: **1-877- 505-2674 #201**

Fig. 1

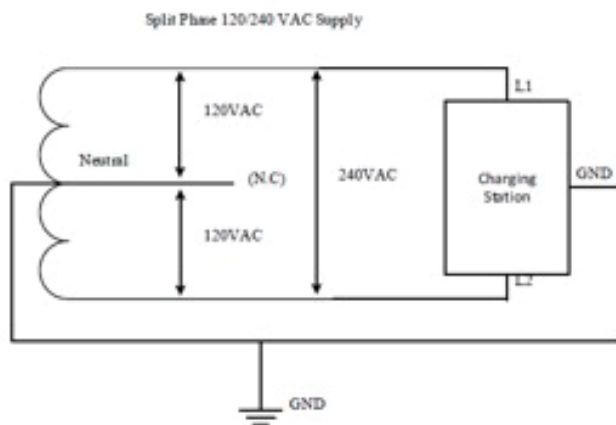
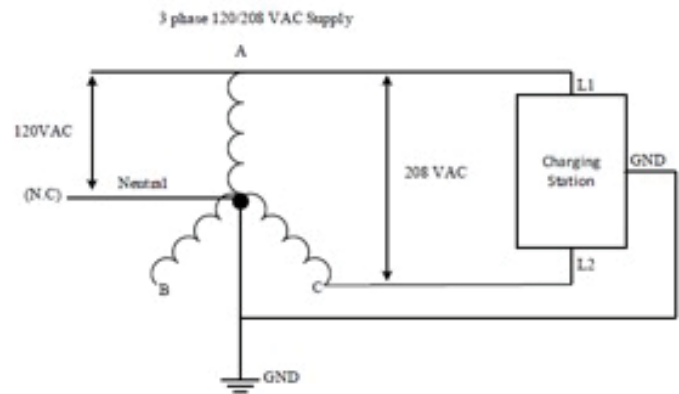
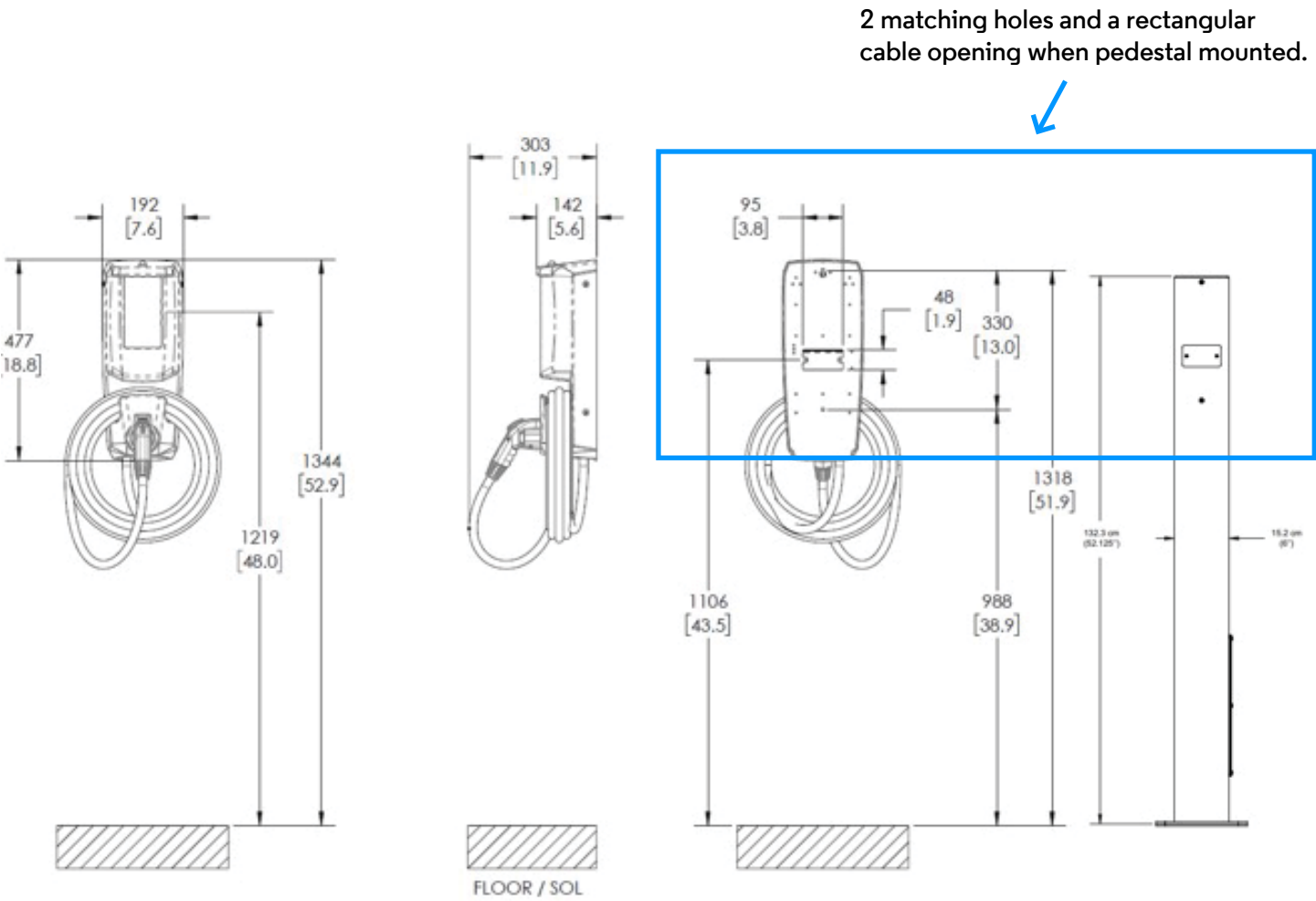


Fig. 2

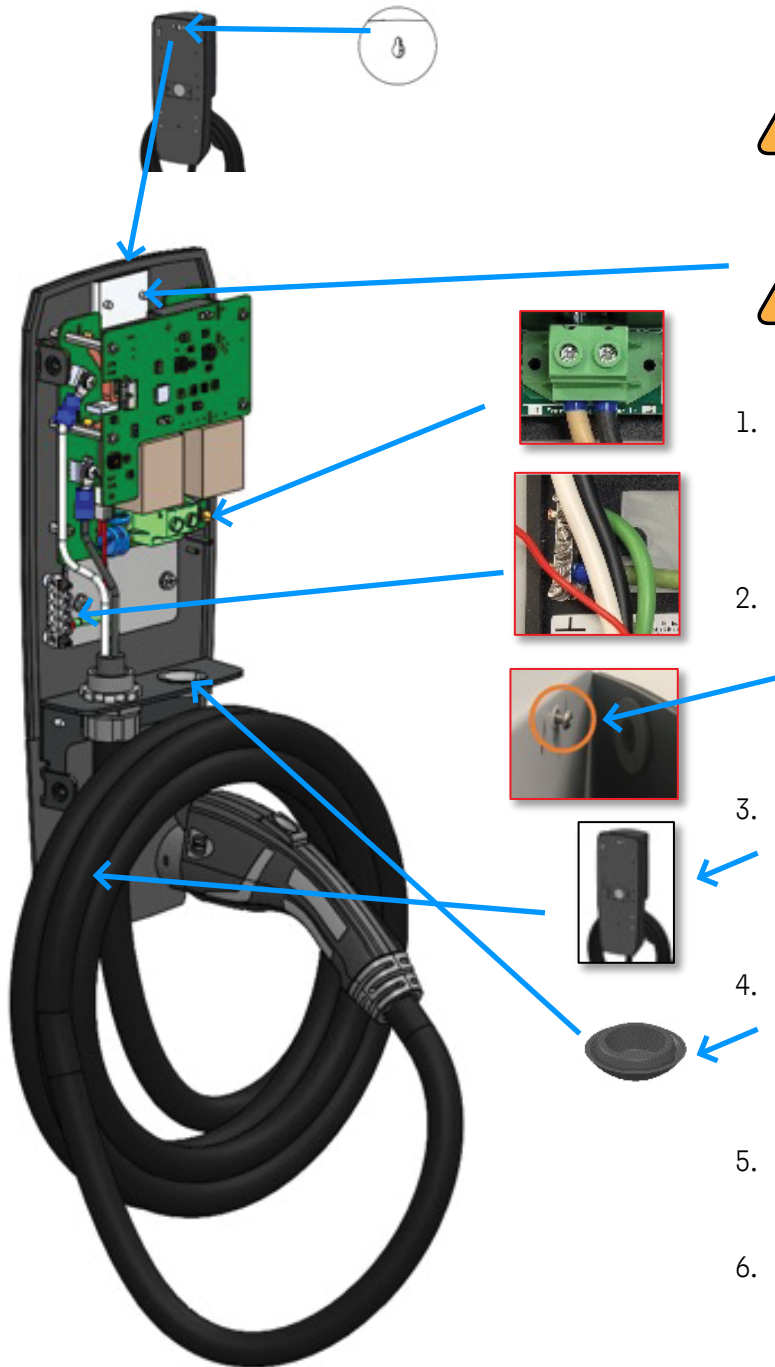


Installation Instructions

Dimensions and nominal installation location.



Power Cable Entry Under The Station



Avoid installing the EVSE in bad weather conditions.



IMPORTANT:

the protection plate should always remain over the keyhole.

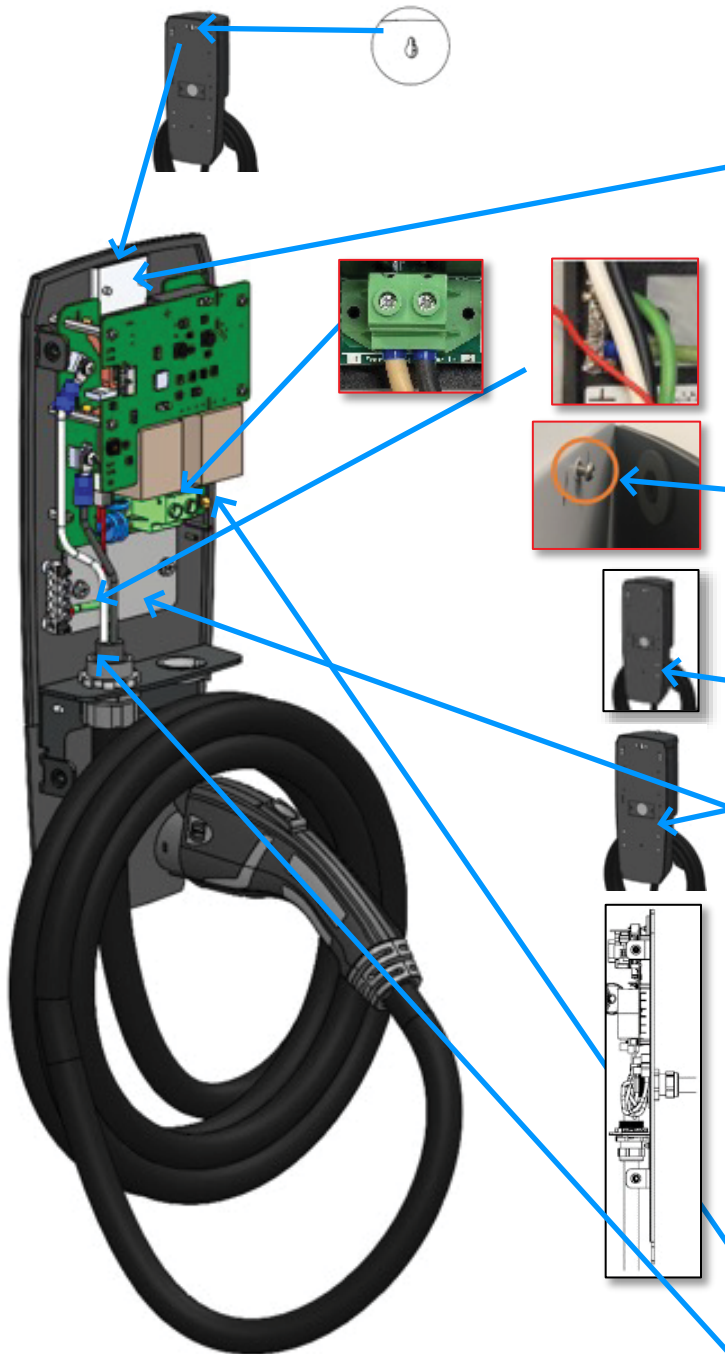
1. Attach the head base to the wall or the post with an anchoring apparatus that can withstand at least 56.7 Kg. (125 pound) per anchor point (2), in the vertical and horizontal direction.
2. Hang the head base to the upper anchor (previously fixed to the wall or post) via the keyhole at the top. When doing so, ensure that there is a "tight-fit" such that there is not gap between the gasket and the mounting wall.
3. Complete the mounting of the head base by screwing a mounting bolt through the bottom hole behind the illustrated cable, in the bottom anchor point.
4. Remove the hole cover and attach the cable connector to the hole from the bottom, then insert the power cable. Make sure the conductors are long enough to reach the terminal block.
5. Connect two power conductors (L1 and L2) and the ground conductor (GND).
6. The grounding conductor shall be connected to the terminal ground.

Power Cable Entry From The Back



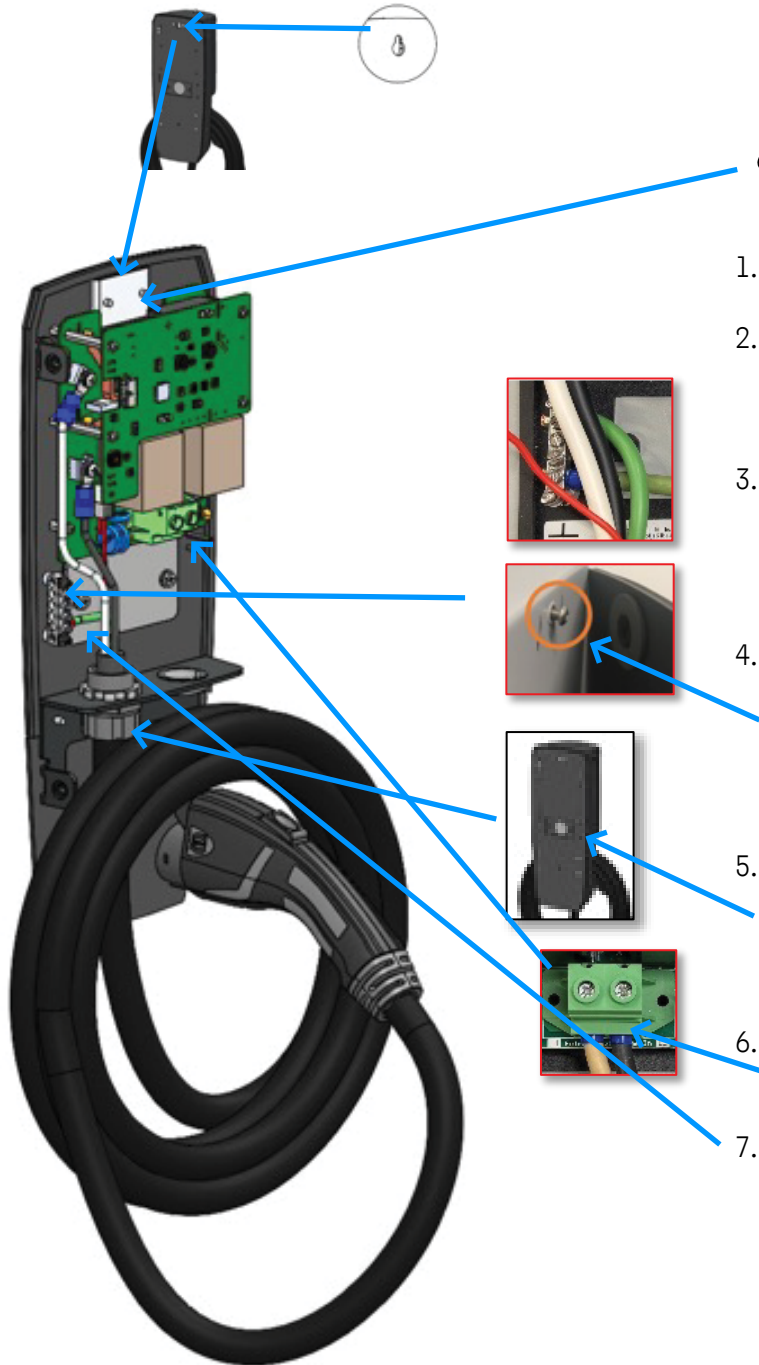
IMPORTANT:

the protection plate should always remain over the keyhole.



1. Attach the head base to the wall or the post with an anchoring apparatus that can withstand at least 56.7 Kg. (125 pound) per anchor point (2), in the vertical and horizontal direction.
2. Hang the head base to the upper anchor (previously fixed to the wall or post) via the keyhole at the top. When doing so, ensure that there is a 'tight-fit' such that there is not gap between the gasket and the mounting wall.
3. Complete the mounting of the head base by screwing a mounting bolt through the bottom hole behind the illustrated cable, in the bottom anchor point.
4. Remove the plate to avoid the splatter of particles in the equipment.
5. Punch a hole of the appropriate diameter in the plate to install the cable connector.
6. Replace the plate in place.
7. Install the cable connector to the punched hole, then the cable. Make sure the conductors are long enough to reach the terminal block.
8. Connect two power conductors (L1 and L2) and the ground conductor (GND).
9. The grounding conductor shall be connected to the terminal ground.

With Electrical Box



IMPORTANT:

the protection plate should always remain over the keyhole.

1. Remove the backplate.
2. Install the head base to align the rectangular opening with the box opening in the wall or the post.
3. Attach the head base to the wall or the post with an anchoring apparatus that can withstand at least 56.7 Kg. (125 pound) per anchor point (2), in the vertical and horizontal direction.
4. Hang the head base to the upper anchor (previously fixed to the wall or post) via the keyhole at the top. When doing so, ensure that there is a 'tight-fit' such that there is not gap between the gasket and the mounting wall.
5. Complete the mounting of the head base by screwing a mounting bolt through the bottom hole behind the illustrated cable, in the bottom anchor point.
6. Connect two power conductors (L1 and L2) and the ground conductor (GND).
7. The grounding conductor shall be connected to the terminal ground.

Setting the current limit

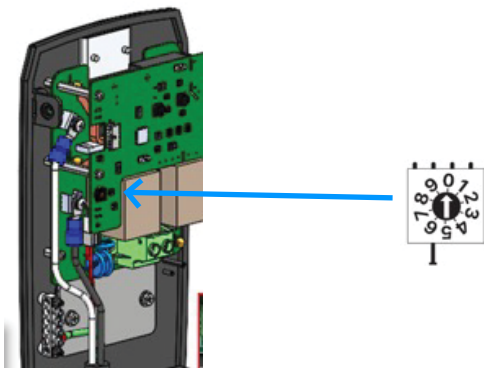
By default, the CoRe+ MAX is set to maximum power (factory). If your electrical infrastructure does not allow the charging station to operate at maximum power (or preventing any potential current overload), it can be reduced using the Current Limiter Switch.



WARNING:
Make sure power is off

Procedure:

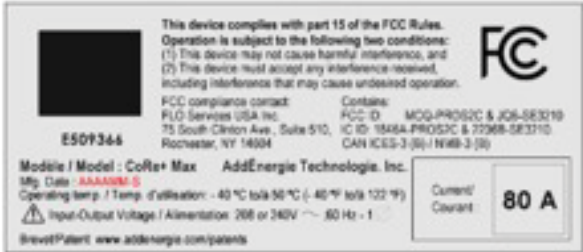
- 1. Locate the current limiter switch on the main PC board.



- 2. Using a flat-bladed screwdriver, gently rotate the switch to the desired position. (See table below)

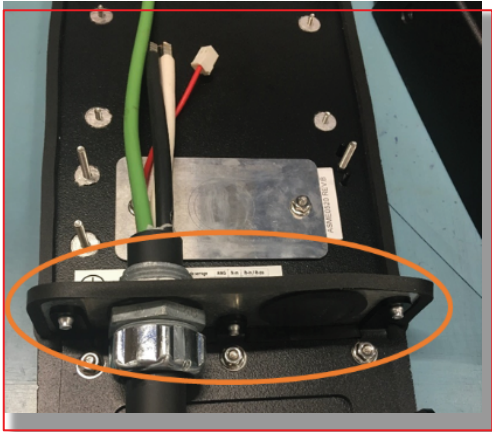
Rotary Position	Charging station current (A)
0	80
1	72
2	64
3	59
4	56
5	48
6	40
7	32
8	24
9	16

- 3. Detach the corresponding maximum current setting label, from the label set kit that came with the unit, onto the label located on the charging station enclosure, over the existing current indication so maintenance personnel is informed about the maximum current setting, for safety and warranty validity considerations.

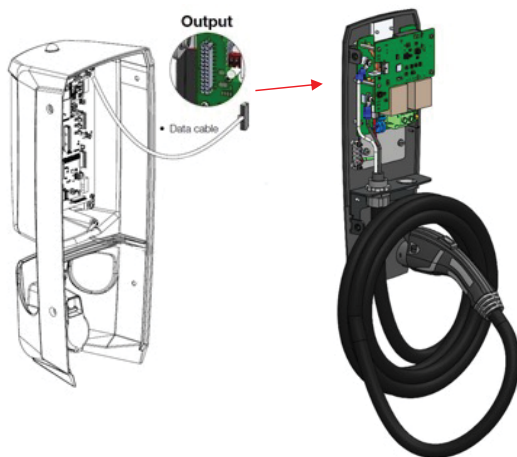


Closing the housing of the station

1. Make sure that the gasket on the lip shown below is well aligned.



2. Connect the cables to their connectors as per the markings.



3. Align the lip with the groove and install the head to the base, making sure that the seals stay in place.



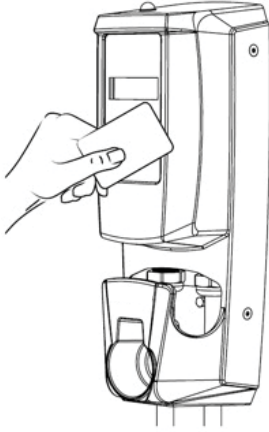
-
4. Apply a slight pressure on the front cover, then screw on the top 2 bolts. Screw on the bottom 2 bolts. Tighten all screws to 30 lbs*in (3.4 N*m). **ATTENTION: NEVER USE AN IMPACT DRIVER TO AVOID DAMAGING THE THREADS!**



5. Place the charging cable on the cable holder and the charging gun in receptacle.



Preliminary Tests and Commissioning








Instructions

- Apply power to the charging station, the following should be observed immediately after power is turned on:
 - 1: The status light is on continuously; its color will be green.
 - 2: The display shows the greeting message.
- Scan the access card provided with the charging head, these results should be observed:
 - 1: Once the reader detects the card, it will emit an audible beep.
 - 2: Immediately after the beep, the access card will be authenticated by the charging station.
 - 3: If the authentication of the card is successful, the automated test of the protection circuit will be performed.
 - 4: Once the test is successfully completed, the overhead status light will start flashing (white).
 - 5: If the connector is inserted into an Electrical Vehicle, it will begin charging, if not, after 1 minute, the station will be in wait mode.
- Once the preliminary test is successfully passed, the charging station can then be used as a private charging station (using the provided access card(s)), or to be connected to AddEnergie's management system by turning on the communication Gateway provided by AddEnergie.



Station Status Light Indicator

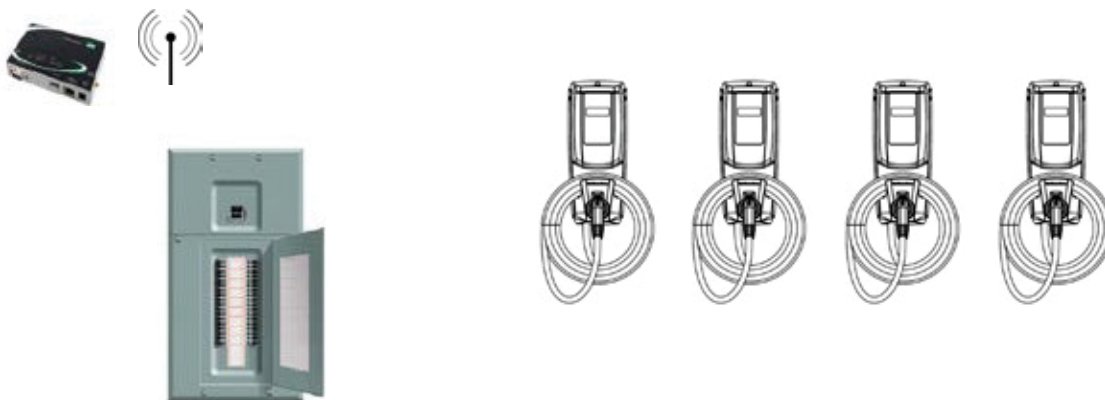
-  Green
Solid color: Ready for session activation
-  White
Blinking: Session authenticated, ready to plug into EV
-  Blue
Solid color: Plugged in and energy being delivered
-  Red
Solid color: Critical fault
-  Off
Out of Service

Power Sharing

With the embedded “Power Sharing™” capability of the CoRe+ Max™, up to four charging stations can be connected in parallel to the same branch circuit.

1. The charging stations connected in parallel to a same branch circuit must be the CoRe+ Max™ model (the specific model identification can be found on the unit label).
2. Without a site controller installed or in operation, or in the event of a lost communication, each CoRe+ Max™ limits its output to 6A.
3. To enable a dynamic sharing of current, a site controller must be installed and properly configured by AddEnergie.
4. The site controller will then ensure that available maximum current is shared optimally amongst the charging stations (between 6A and 80A for each station), while making sure that the maximum circuit capacity (80 A in the case of a circuit protected by a 100A breaker) is never exceeded.
5. For safety reason, each CoRe+ Max™ charging station will immediately interrupt an ongoing charging session when the connected EV draws more than the amperage limit dictated at any time. To resume charging, the user must restart the usage session process from the beginning.
6. The site controller is provided by AddEnergie as part of Global Management Service (GMS).
7. The communication between the site controller and the charging station is through a wireless meshed Zigbee network. Refer to the communication gateway installation guide provided by AddEnergie for more details.
8. The maximum number of charging stations sharing the same 100A circuit (for a total load of 80A) is 4.

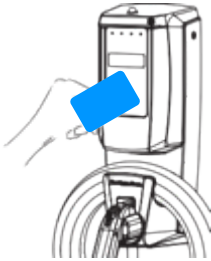
Typical Installation



Note 1:

The electrical wiring and the associated electrical hardware used to connect in parallel the charging stations shall be compliant to the local regulations in place.

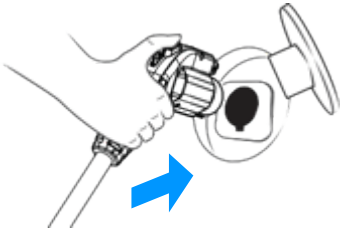
Operating Instructions



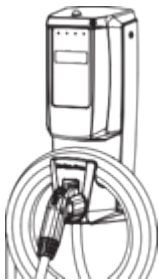
- 1** **Activate the station:**
Place your card on the reader OR, Select the station in the mobile app and press “Start a session”.



- 2** Pick up the connector and unwind the cable to the length required.



- 3** Plug the connector into your vehicle. Charging will start immediately.



- 4** Once charging is complete, replace the connector in its socket.

WARNING:

Once charging is complete, make sure to wind the cable and store the connector in its socket

User Maintenance Instructions

The CoRe+ MAX enclosure complies to NEMA 4X which is intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, windblown dust, rain, splashing water, and hose directed water; undamaged by ice which forms on the enclosure.

As such the maintenance required to protect the integrity of the charging station enclosure is minimal, except for cleaning which can be achieved with standard domestic products recommended to the type of soil encountered.

The charging cable though, when not in usage, should be properly rolled around the station enclosure holder and the cable connector inserted in its enclosure at all times. Care should be taken not to bend, twist or pull on the cable from the connector alone either to enroll or roll it on the enclosure; or when it is stuck.

When manipulating the cable, please ensure the cable outer insulation and the connector itself do not show any excessive sign of wear such as cracks or signs of abrasion, in which case please dial the 'Installation or commissioning questions' number at the end of this manual for reporting and case management purposes.

Moving And Storing Instructions

The charging station is designed for permanent usage and not intended for portable utilisation.

As such, storage situations will occur prior to installation in which case it is recommended that the station be kept in its shipping packaging at temperature within -40 °C to +50 °C / -40 °F to + 112 F, and humidity not exceeding 95% (noncondensing), until it is installed by qualified personnel.

Glossary

EVSE as Electric Vehicle Supply Equipment

EV as Electric Vehicle

Specifications



Model:

CoRe+ Max™

Revision:

V1

Company Info:

AddEnergie Technologies Inc.

Document revision number:

V01-2021-02-27

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Description of the charger	Level 2, 80A charging station equipped with display and card reader.
Output connector	Output connector: J-1772 compliant
Input connector	Split Phase 120/240 VAC Supply or single phase 120/208 VAC (Refer to Figure 1 and Figure 2)
Maximum output power	Maximum configurable output power: 19.2 kW @ 240V or 16.64 kW @ 208V)
Operating Temperature Range	Operating Temperature Range: -40 °C to +50 °C / -40 °F to + 122 °F
Built-in protection	Overvoltage conditions and leakage current to ground.
Enclosure	NEMA 4X, suitable for outdoor use.
Shipping weight	Approximately 12.15 kg / 27 lb.
Communication protocols	OCPP version 1.6j
Security Standard Certification (Pending)	CSA C22.2 No. 0-10 General Requirements – Canadian Electrical code, part II
	CSA 281.2 /UL2231 Standard for safety for personnel protection systems for electric vehicle (EV) supply circuits: Requirements for protection devices for use in charging systems
	CSA C22.2 No. 280/UL2594 (1st edition) Electric vehicle supply equipment (EVSE)

Installation or commissioning questions:

(877) 505-2674 ext. 201

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Contact Us



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