

heliox

Technical Handbook
Heliox 60kW CCS1 UL
HE9823005-01

Powering a cleaner tomorrow



DISCLAIMER

The image of the Heliox 60kW CCS1 charger cabinet on the cover of this technical handbook may differ from reality. No rights can be derived from this.

- The charger and all the related metal accessories must be grounded to reduce the risk of electric shock with an equipment grounding conductor. The charger must be connected to an ACD (Automated Coupler Device) that is properly installed and must be grounded in accordance with all the safety regulations.

3.5.2. Industrial and Environment Safety Measures



NOTICE

This safety notes are site owner's responsibilities but mandatory rules and regulations of federal, state and local authorities must be complied.

- Always keep the work area clean, accessible and well ventilated.
- Remove any spills to prevent slippery floors.
- Dispose of waste and discarded parts in an environmental safe manner in accordance with the manufacturer's instructions and federal, state and local authorities regulations.
- Keep noise and emission levels as low as reasonably possible.
- Do not remove the safety guarding if not strictly required for the work and do not reach beyond any guards.
- Use personal protective equipment (PPE) as required by the laws and regulations.

3.5.3. Personnel Safety Measures



NOTICE

This safety notes are site owner's responsibilities but mandatory rules and regulations of federal, state and local authorities must be complied.

Safety is the collective responsibility of every individual therefore a basic safety precaution to be implemented by every personnel who are qualified and trained to work on sites:

- Use, maintain and store the personal protection equipment (PPE) as indicated.

3.6. Onsite Installation Safety Measures

It is the responsibility of the site owner to make sure that the collective safety measures as well as the personal protective measures and procedures are in place to be adhered. It is the responsibility of the site owner to facilitate valid logistic transport and handling equipment and procedures for the safe handling, transport and storage of the system parts when requested. The customer can instruct a safety professional 3rd party to create safety and health plan before the installation activities begin.

3.6.1. Safety of Onsite Personnel



WARNING

The use of personal protective equipment (PPE) does not mean to ignore the normal safety precautions. The best protection against serious personal injury is care and align to the safety instructions.

Safety precautions are taken to avoid accidents to protect the personnel on site and environment. Therefore always use applicable Personal Protective Equipment (PPE) when perform the work on the EVSE. PPE is meant to protect health and well-being of the staff who is performing the specific task in a hazardous environment. The incorrect use or lack of maintenance of PPE can result in serious injury to the staff. When the work is in a potentially hazardous situation, do the work with two staff members.

3.6.2. Onsite First Aid



NOTICE

This safety notes are site owner's responsibilities but mandatory rules and regulations of federal, state and local authorities must be complied.

The first aid kit should be kept clean and stored in an appropriate and easy accessible location. The materials have a shelf life which is limited and indicated by an expiry date.

3.6.3. First Response / Responder

The first responder is responsible for their own safety. At a calamity, the EVSE poses a risk of electrical shock. If a fire is present, first make sure that the electrical power is switched and confirmed off. For handheld fire extinguishers, only use an extinguisher classification which is dedicated for putting out electrical fires.



DANGER

Risk of electrocution or arc-flashes. Do not use water to extinguish an electrical fire. Water is a natural conductor and will cause an electrical shock. An electrical shock can result in serious injury or death by electrocution.



NOTICE

This safety notes are site owner's responsibilities but mandatory rules and regulations of federal, state and local authorities must be complied.

3.7. Safety of the Work Area

3.7.1. Access and Escape Route

Access to the operating area, maintenance area and the escape routes should be kept clear of obstacles, snow and ice at all times. Access to systems and components must be available from suitable places which are accessible from the escape routes.



WARNING

When the charger is opened make sure to keep a distance of at least 36 inches for escape route.

3.7.2. Storage of Materials and Equipment

Materials and equipment shall be stored indoors in a well-ventilated and dry area free from direct radiation by heat or sunlight. For consumable materials, refer to [4.1. Storage and transport](#). All hazardous materials should be stored in an appropriate area according to the manufacturer's instructions.

3.8. Safety of Civil Works

Only authorized personnel, familiar with the civil procedures and tasks, shall complete civil work. Said personnel shall follow the regulations & requirements set by the federal, state, local government authorities, manufacturer, employer, and owner of the EVSE. Civil work is project specific due to the actual site situation or specific restrictions therefore the design of the foundation can be different and Heliox Project Engineering can provide some guidelines if required.

3.9. Safety of Mechanical Works

Only authorized persons who are familiar with the mechanical installation, repair and service procedures, who follow the specific regulations and the requirements set by the federal, state and local government authorities, manufacturer, employer and owner of the EVSE are allowed to do the mechanical work.

3.9.1. Lifting and Hoisting Safety



WARNING

Equipment can be heavy and weight depends upon the size. Use only certified lifting equipment and procedures and please refer to [4. Logistic information](#). Failure to do so can lead to serious injuries and death.

- Make sure that the weather and the work conditions are suitable for an outdoor lifting operation.
- Do a visual inspection of the lifting equipment and the related maintenance logbook.
- Make sure the lifting equipment is valid, free of any signs of wear and damage. Lifting equipment that has signs of damage or serious corrosion is unsafe to perform the task.
- Work area should not be blocked by any object. Access to the area should remain free.
- Determine the weight and the centre of gravity of the part which will be lifted.
- Comply with the safe working limit and the safe load limit of the lifting equipment.
- Use the appropriate lifting equipment to attach to the parts.

- Lift the parts by the instructions of the designated personnel who supervises the lifting operation.
- Lifting must be done according the instructions stated in [7.5.1. Transport Charger](#).

3.10. Safety of Electrical Works

Only authorized personnel who are familiar with the electrical installation, repair and service procedures, who comply with the specific regulations and requirements set by the federal, state and local government authorities, manufacturer, employer and owner of the EVSE are allowed to do the electrical work. Electric shock or arc flash can cause personal injuries and equipment damage. Many accidents cause serious electrical shock or serious burns. Fatal shocks are often caused by low, medium and high voltage systems. But even non-fatal electrical shock causes serious injury to persons by e.g. falls from height or arc flashes.

3.10.1. Line of Defense



- Never work on electrical installations that are energized!
- Verify with verified measuring equipment (voltage probe) that the electrical installation is unenergized.
- Use valid, sufficiently rated, insulated tools and regular inspection of the protective earth connections for general condition, contact resistance and signs of corrosion.
- Don't take safety risks while performing a task and if any safety hazards occur, stop the work immediately.



WARNING

Make sure that it is safe to work on the electrical system. Energized electrical systems are hazardous and can cause electrical shock or arc flashes. Electrical shock or arc flashes can cause serious injury to personnel when not avoided.

- Make sure the work area is made safe.
- Understand and know the construction and circuits of the electrical equipment. Only authorized or trained personnel shall work on EVSE.
- Product has a Short Circuit Current of 35 kA.
- Make sure the tools, materials and equipment are calibrated, valid and suitable for the work (e.g. insulated and rated for 1000V).
- The primary power circuits, especially the incoming AC-Terminals can have a very high short circuit current capacity. Use appropriate measuring equipment on these places.
- Identify the possible (feedback) energy sources that can cause a hazard.
- Lock out the EVSE and the related equipment.
- Measure the voltage with a double pole measuring device in conformity with IEC61243-3.
- Make sure the reading is 0 Volt to prove that the system is safe to work on.
- At any time, if the work becomes more hazardous than anticipated for, stop and take the required safety precautions and don't take safety risks.

3.10.2. Electrical Hazards

- The Heliox 60kW charger contains conductors that have hazardous electrical voltages.
- The grid connection terminals located at the main circuit breaker have hazardous voltages, even if all circuit breakers are switched off. The local disconnect or unplugging of the AC plug will render this harmless.

3.11. Operational Safety

3.11.1. In Case of an Emergency

- Switch off mains voltage to the charger.
- Contact the owner/operator.
- Proceed according to the emergency plan of the owner/operator.

3.11.2. Do Not Operate After Damage or Accidents

Check the charger and DC plug for damage.

Do not operate the Heliox 60kW charger and contact the owner/operator in the following cases:

- If the Heliox 60kW charger or DC plug are damaged in any way.
 - Do not use the Heliox 60kW charger.
 - Switch-off the main circuit breaker.
- If the Heliox 60kW charger is struck by lightning.
- If there is a fire in or nearby the Heliox 60kW charger.
- If the Heliox 60kW charger was submersed in water, or any other fluid.
- Request for a check by Heliox of the Heliox 60kW charger before further use.



NOTICE

- **Read all the instructions before using this product.**
- **Charging will stop if a charge time-out occurs, if the charging is completed, or if the session is manually stopped.**
- **Children should be supervised when this product is used around them.**
- **Do not put your fingers into the EV connector.**
- **Do not use this product if the EV charger is frayed, it has the isolation broken, or displays any other indication of damage.**
- **Do not use this product if the casing or the EV connector is broken, cracked, open, or show any other indication of damage.**
- **This product should be installed only by a qualified approved technician.**
- **Make sure that the materials used and the installation procedures follow the local building codes and safety standards.**
- **The information provided in this manual in no way exempts the user of responsibility to follow all applicable codes or safety standards.**
- **This document provides instructions for the Heliox 60kW charger and should not be used for any other product.**
- **Before installation or use of this product, you should review this manual carefully and consult with a licensed contractor, licensed electrician, or trained installation expert to make sure of compliance with local building codes and safety standards.**

3.12. Lock-Out / Tag-Out

This procedure states the minimum requirements for the lock-out of the energy sources (electrical power, etc.) that can cause injury to the personnel. If safety instructions are available from federal, state and local government authorities / higher authority shall prevail.



WARNING

Make sure that it is safe to work on the electrical system. Energized electrical systems are hazardous and can cause electrical shock or arc flashes. Electrical shock or arc flashes can cause serious injury to personnel when not avoided.

3.12.1. Make the System Safe

- Look up the log file and scan for anomalies. If in doubt, contact Heliox Support: see [9.1 Contact Information](#).
- Inform the installation responsible / designated person that a lock-out of the EVSE (or a part of the supply system) is necessary. Use and wear proper PPE.
- After approval, shutdown the system by the usual stop procedure. Refer to section [9.2.2. Stop the Charge Session](#).
- Make sure no electric vehicle can be connected to DC-Couplers during the service intervention, attach a warning sign; "Do not operate the system - Work in progress".
- At each remote control station and each local control station, attach a warning sign: "Do not operate the system - Work in progress".
- Set the applicable switches / disconnectors to the OFF position and make them safe with a dedicated lock-out device (e.g. personal padlock).
- For the electrical circuits, wait at least for 5 minutes to allow the capacitors to discharge before doing any work.
- Measure the lock-out condition to confirm that the power sources are set to OFF and the capacitors have discharged so they cannot cause any hazardous situations.

3.12.2. Return the System into Operation

- Remove all tools, materials and equipment from the work area.
- Install and secure any protective sheets that was removed earlier.
- Make sure the EVSE and the work area are safe and clean.
- Make sure the safety related provisions are fit for use.
- Remove the locks and tags.

Inform the installation responsible / designated person that the task is completed and the EVSE is ready to get energized.

- Set the applicable switches / disconnectors to the ON position.
- Be aware of possible arc-flashes and return the EVSE into operation for test purposes.
- Wait for the status indicator to become green (continuously) to show that the EVSE is ready.
- Do a test session with an EV connected and test the stop function.
- When the test is successfully completed, return the system into service.

7.6. Cabinet installation

The HELIOX 60kW CCS1 charger can be mounted on to a wall or a pedestal. Either of these scenarios is possible by using a wall mount bracket. The wall mount bracket provides support to the HELIOX 60kW CCS1 charger from the wall or pedestal.



NOTICE

The recommended height of installation of 48" (measured from installation surface to CCS handle, see [Figure 9](#)) is the maximum height of installation for ADA Standard Compliance.
For higher height, consult with Heliox.

7.6.1. Prepare site with required conduits

The installation described below applies for wall mount and pedestal mount installation. It does not matter which conduit in the pad is used for Comms or Power, but they must remain separate from each other. The Communication (ethernet) conduit is ½" and the Power Conduit is 1" trade size. You must use UL rated, watertight conduit and cable glands.



NOTICE

The conduits and wiring used in the installation described below are not included in the scope of delivery.

7.6.2. Wall mounted installation

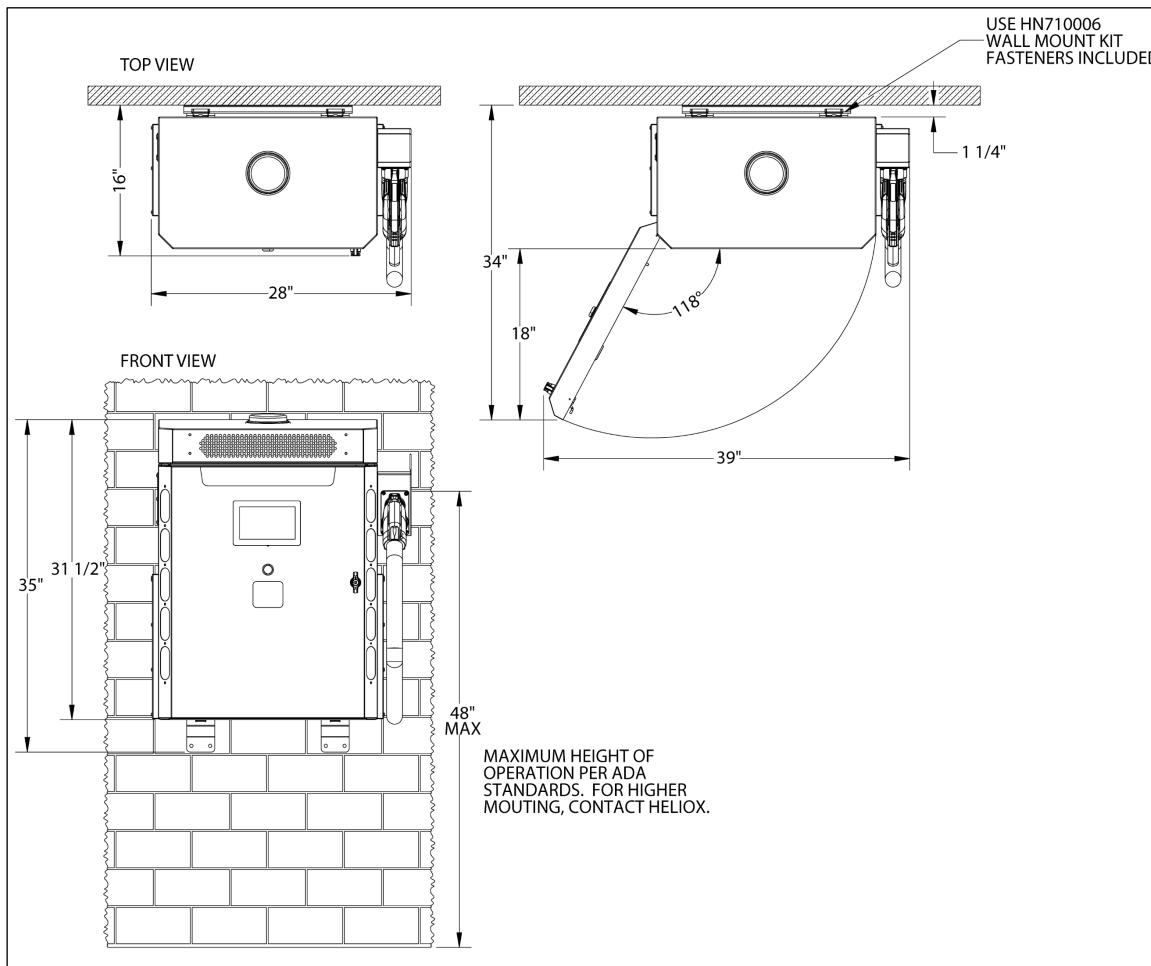


Figure 12: Dimensions wall mounted charger



NOTICE

For installation of the cabinet brackets:

- Apply the thread lock compound Loctite® Threadlocker Blue 242®.
- Tighten the bolts of the cabinet brackets with the correct torque. Please refer to section [5.6 Torque tables](#).

Install cabinet brackets

1. Install the upper cabinet brackets ① (2x) with M8x16 SHCS bolts ② (4x).
2. Install the lower cabinet brackets ③ (2x) with M8x16 SHCS bolts ④ (2x).

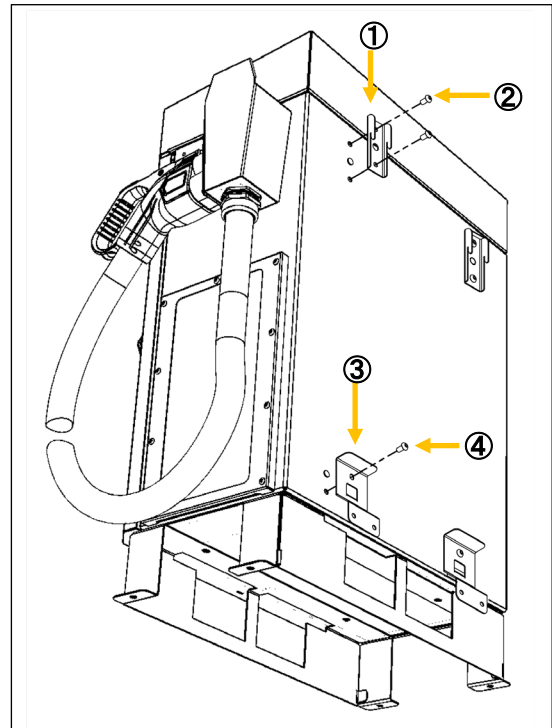


Figure 13: Install cabinet brackets



NOTICE

The anchors used in the installation described below are not included in the scope of delivery.

The anchors mentioned are recommended fasteners. Consult with Heliox when other anchors are wanted.

Install wall bracket

3. Match drill the holes (3/4") (3x) through the wall bracket ⑤.
4. Install the wall bracket with 5/16"x 2-1/4" Tapcon HD masonry anchor (recommended) ⑥ (3x) at a maximum height of 48" (see [Figure 12](#): Dimensions wall mounted charger).

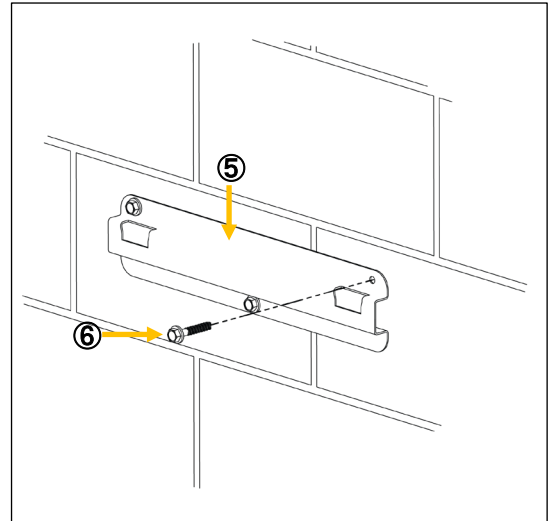


Figure 14: Install wall bracket to the wall

Mount cabinet onto the wall bracket

5. Use a forklift and the included forklift brackets to lift the charger to the height of the wall bracket.
6. Slowly lower the charger so that the upper cabinet brackets sink into the slotted holes in the wall bracket.
7. Remove the forklift brackets from the cabinet.

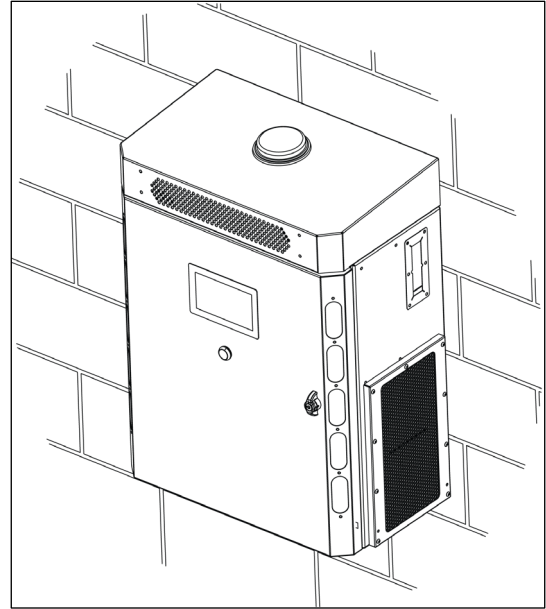


Figure 15: Mount cabinet to wall bracket

8. Fasten the bolts ⑦ (4x) that came with the forklift brackets to the bottom of the cabinet ⑧ (4x).

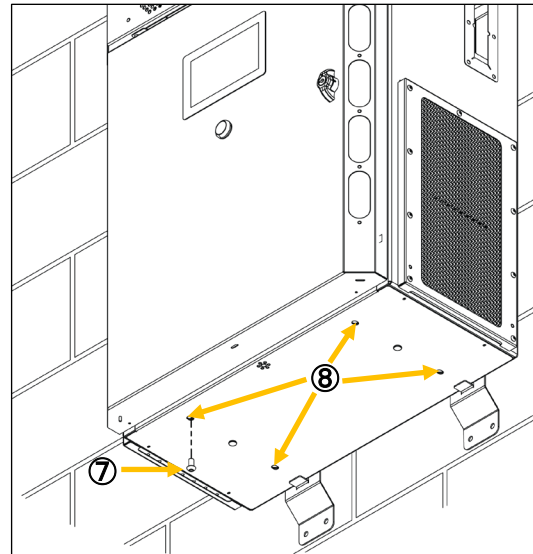


Figure 16: Fasten screws forklift brackets to cabinet



NOTICE

The anchors used in the installation described below are not included in the scope of delivery.

The anchors mentioned are recommended fasteners. Consult with Heliox when other anchors are wanted.

Fasten lower cabinet brackets to the wall

9. Match drill the holes (3/4") (4x) through the lower cabinet bracket ⑨ (2x).
10. Fasten the lower cabinet brackets to the wall with 5/16" x 2-1/4" Tapcon HD masonry anchor (recommended) ⑩ (4x).

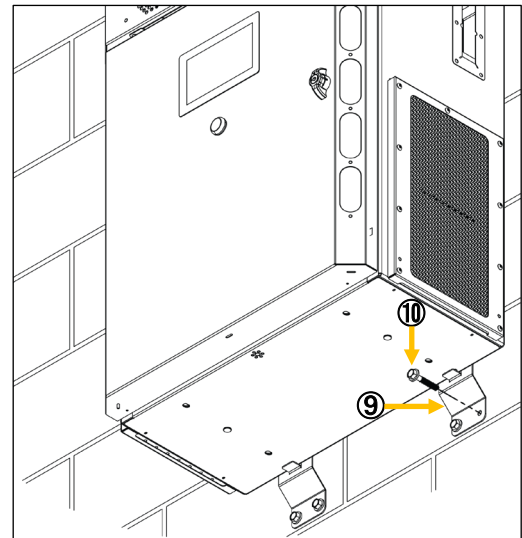


Figure 17: Fasten lower cabinet brackets



NOTICE

Cable glands and cable entry plate must be installed waterproof.

The installer is responsible for installation according to NEMA 3R standards.

Prepare conduit entry plate

1. Install the cable glands (for wall mount installation).
The 1" power conduit should be 10" in length, and the 1/2" comms conduit should be 12.5" long.
The conduit for communication is optional.
2. Run the power lines from the pad to the 1" conduit and up into the unit's terminal block. Run the comms ethernet cable through the 1/2" conduit and into the unit's ethernet port.

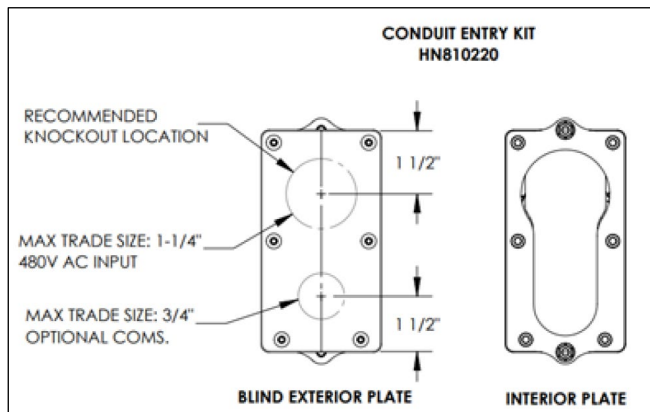


Figure 18: Fitting conduits in conduit entry kit

Install AC inlet and GND cables

11. Install cable conduits as described in section [7.6.1](#).
12. Remove bolts ⑪ (6x) and the cable entry plate ⑫.
13. Drill the holes needed in the cable entry plate according to the dimensions suggested, see [Figure 12](#).
14. Install the required NEMA 3R rated cable glands in the cable entry plate.
15. Install the cable plate onto the charger cabinet.
16. Route the AC inlet and GND cables through the cable conduits and the glands.

For details on the installation of the AC cables and the PE/GND cable see section [7.7.1.3](#).

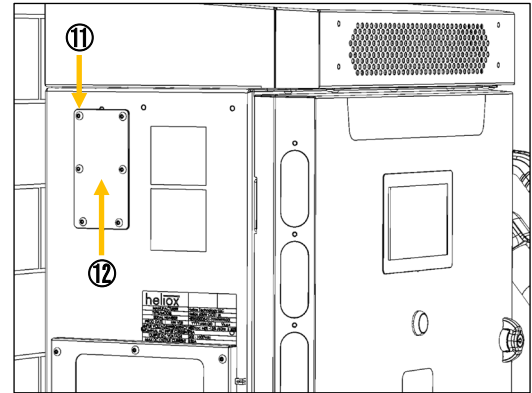


Figure 19: Prepare the cable entry plate

7.6.3. Pedestal mounted installation

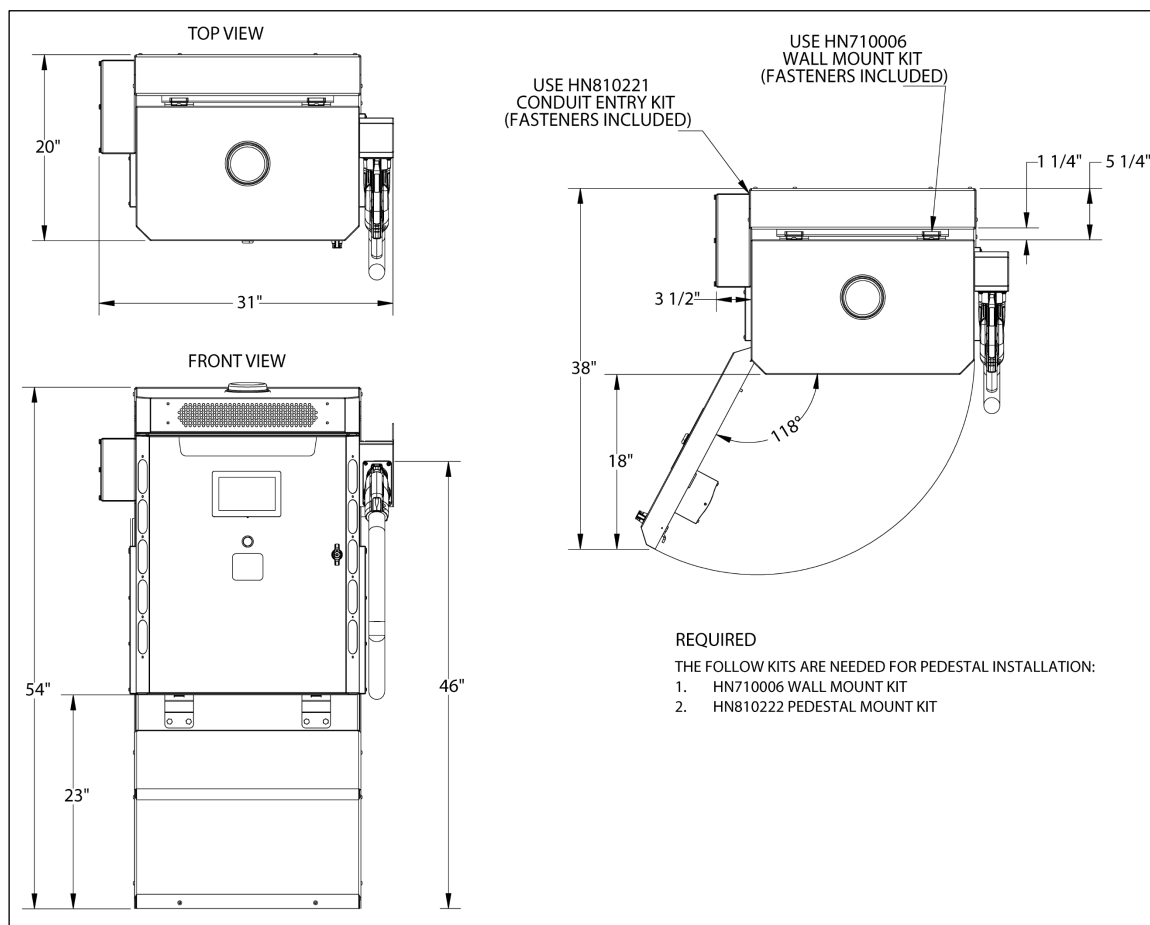


Figure 20: Dimensions pedestal mounted charger



NOTICE

For installation of the cabinet brackets:

- Apply the thread lock compound Loctite® Threadlocker Blue 242®.
- Tighten the bolts of the cabinet brackets with the correct torque. Please refer to section [5.6 Torque tables](#).

Install cabinet brackets

1. Install the upper cabinet bracket ① (2x) with M8x16 SHCS bolts ② (4x).
2. Install the lower cabinet bracket ③ (2x) with M8x16 SHCS bolts ④ (2x).

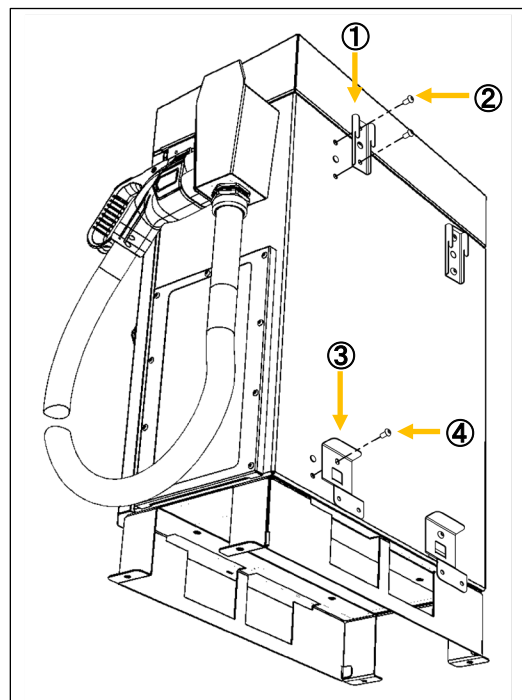


Figure 21: Install cabinet brackets

Install wall bracket

3. Install the wall bracket ⑤ with M8x12 SHCS bolts ⑥ (3x) onto the pedestal.
4. Remove bolts ⑦ (8x) and base plate ⑧.

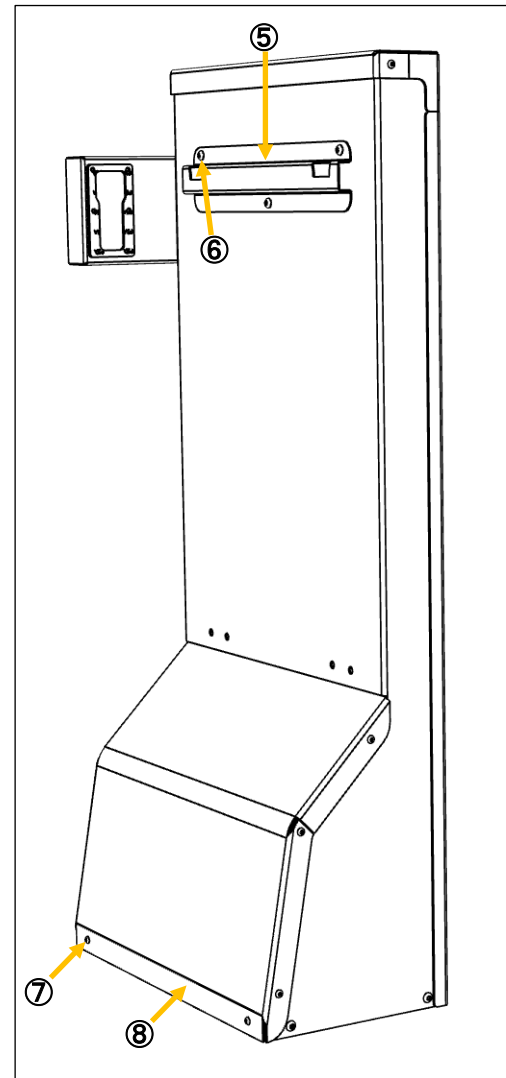


Figure 22: Install wall bracket to the pedestal

Install base plate onto the floor

5. Place the base plate on the floor in such way that the cable conduits enter opening ⑨ of the plate.
6. Make sure that the V-shaped symbol ⑪ points in the direction of the frontside of the charger to be installed on the pedestal.
7. Drill the holes ⑩ (4x), use the base frame as mold. Hole size depends on floor type and anchors to be used. Maximum hole size is 13/16".

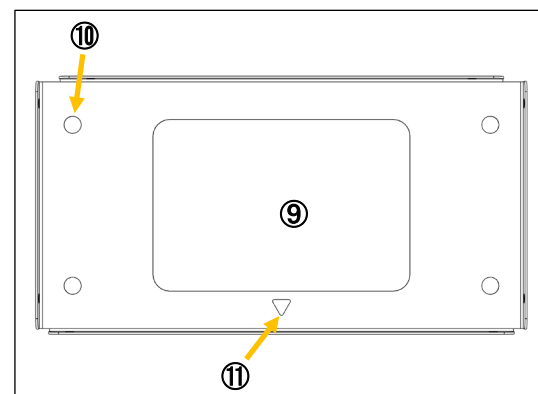


Figure 23: Install base plate to the ground



NOTICE

For proper application of the mounting anchors:

- The installer is responsible for choosing the anchors needed. The choice of the anchor type depends on the mounting surface and the dimension of the holes for the anchors used to install the bottom plate of the pedestal.
- Please refer to the installation instructions of the anchors selected.
- Each floor may be different and the fasteners, anchors, or epoxy style can vary. When in doubt please consult with Heliox

8. Install the epoxy anchors, expanding cement anchors or other site specific anchors.
9. Install the base plate to the anchors.
10. Install the pedestal to the base plate with the bolts removed in [step 4](#).



NOTICE

These installation steps MUST be done first:

1. Installation of the base plate to the floor,
2. Installation of the pedestal to the base plate.

The installation of the charger to the pedestal can only be done safely once the pedestal is fully installed to the fully anchored base plate.

Route the cables

11. Install cable conduits as described in section [7.6.1](#).

To route the cables through the pedestal you need good access to the interior of the pedestal.

12. Remove the M6x12 SHCS bolts ⑫ (8x) and the bottom cover plate ⑬ (if not already removed).

13. Remove the M6x12 SHCS bolts ⑭ (10x) and the back cover plate ⑮.

14. Remove the M6x12 SHCS bolts ⑯ (4x) and the conduit box cover plate ⑰.

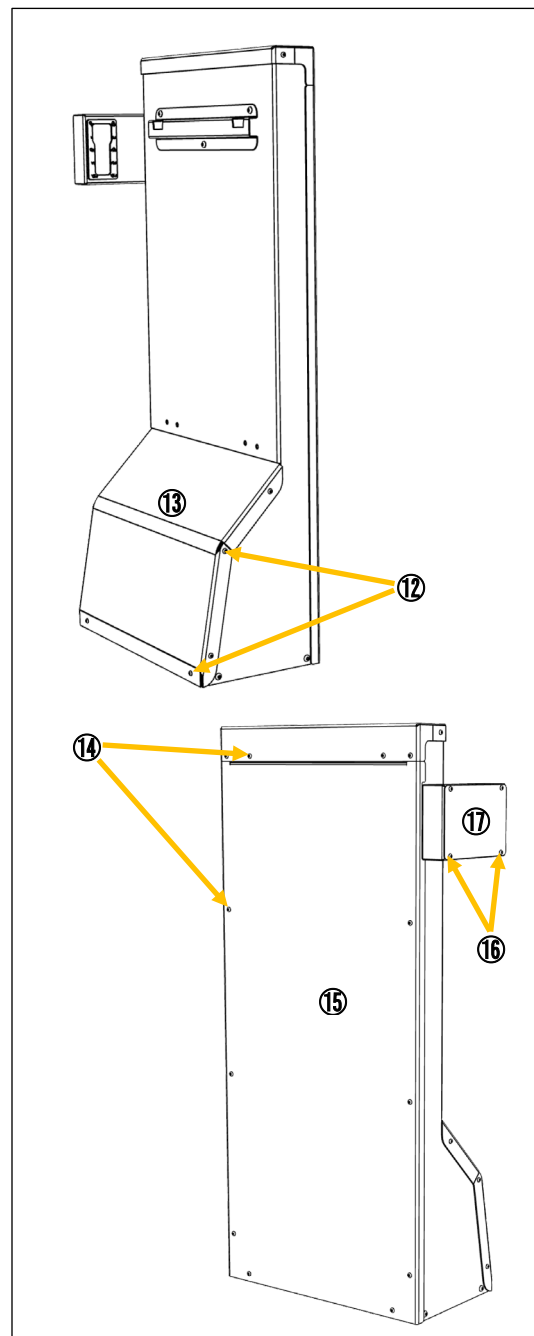


Figure 24: Remove cover plates

15. Make sure that the gasket ⑮ is in place on the side of the conduit box that will connect to the cable entry of the charger cabinet.

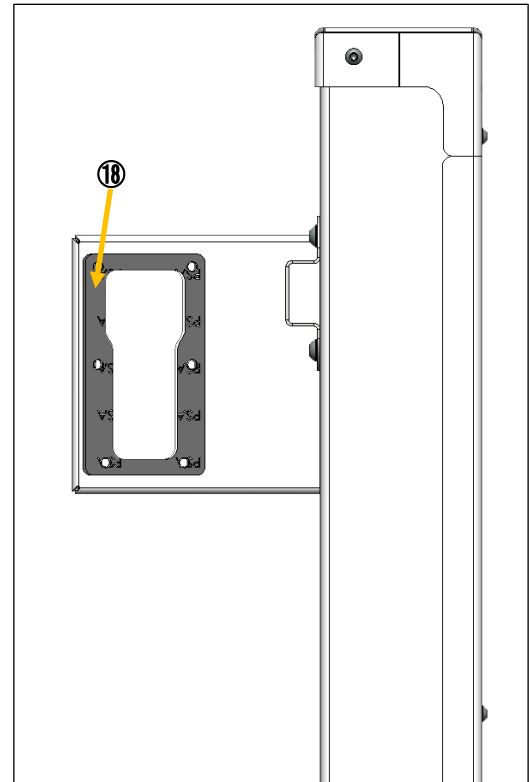


Figure 25: Gasket on the conduit box

16. Route the cables through the pedestal and the conduit box inlet ⑯ in such way that approximately 30" of cable is available outside of the conduit box.

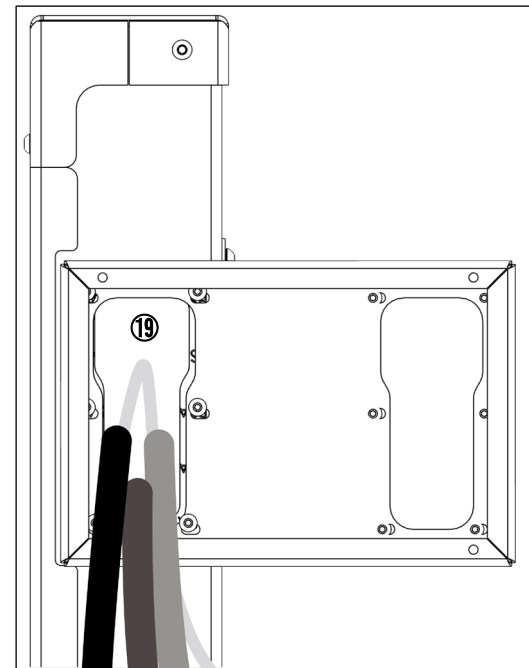


Figure 26: Route cables through conduit box inlet

17. Remove bolts ②① (6x) and the cable entry plate ②① from the charger cabinet.
- The cable entry plate does not have to be reinstalled. Dispose of the cable entry plate in an environmental safe manner.
 - The bolts of the cable entry plate will be used to connect the pedestal conduit box to the charger. See [step 21](#).

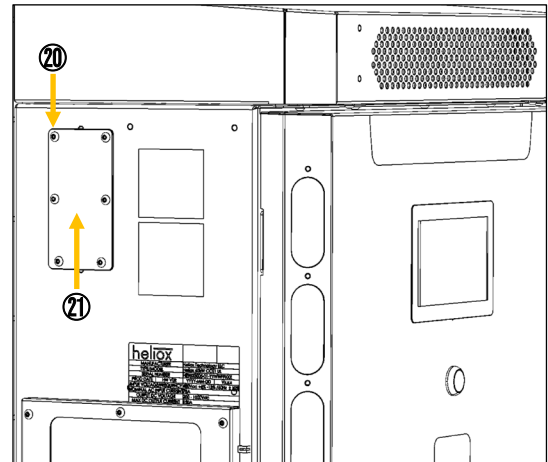


Figure 27: Mount cabinet to wall bracket

18. Remove the forklift brackets from the cabinet.
19. Fasten the bolts ②② (4x) that came with the forklift brackets to the bottom of the cabinet ②③ (4x).

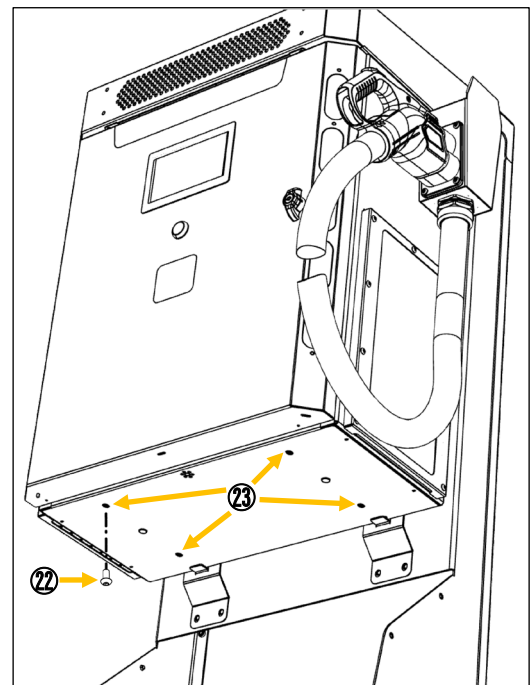


Figure 28: Fasten screws forklift brackets to cabinet

HELIOX 60kW CCS1 charger

Installation Instruction

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20. Fasten the lower cabinet brackets to the pedestal with M8x12 SHCS bolts ②④ (4x).

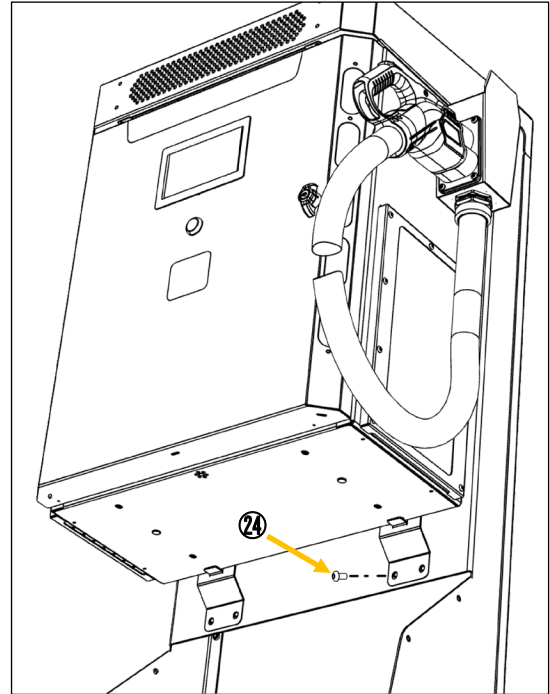


Figure 29: Fasten lower cabinet brackets

21. Install the interior mount plate ②⑤ on the inside of the charger cabinet with the bolts that were removed in [step 17](#). Bolts are inserted from the inside of the pedestal conduit box.

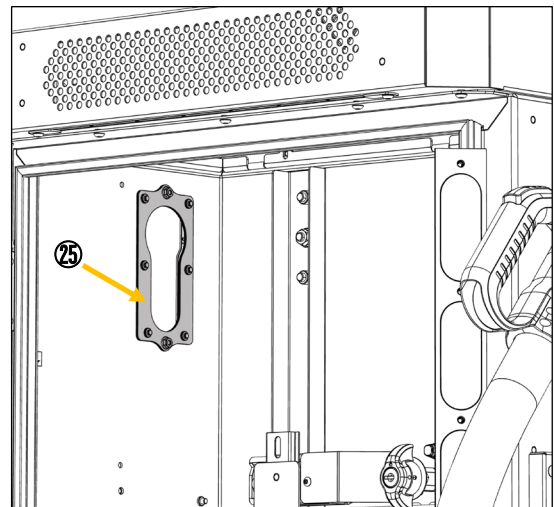


Figure 30: Install interior mount plate



NOTICE

The installation of the interior mount plate must provide a waterproof connection between conduit box and charger cabinet.
The installer is responsible for installation according to NEMA 3R standards.

22. Route the cables from the conduit box into the charger cabinet.
For details on the installation of the AC cables and the PE/GND cable see section [7.7.1.3](#).
23. Install the cover plates that were removed in [steps 12 to 14](#).

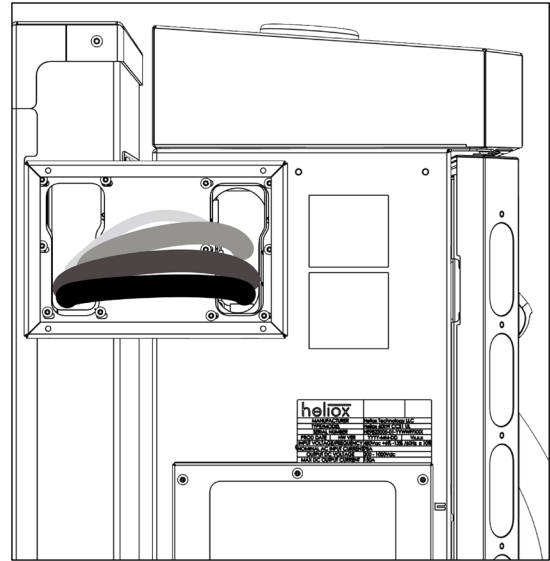


Figure 31: Route cables from conduit box into charger cabinet

7.7. Electrical installation



DANGER

Risk of electrocution. Make sure, it is safe to work on the electrical installation. Energized electrical systems are hazardous and can cause electrical shock. Electrical shock can cause (serious) injury to persons.

The AC configuration of the base station is out of scope for this installation instruction. It is part of the Installation instructions of the base station.



NOTICE

When connecting cables:

- **Allow for sufficient over length for future repair of the connections.**
- **Make sure sufficient length is available for 3x a repair session.**
- **Mind the minimum bending radius of 5x the cable diameter**
- **Install the cables in accordance with the manufacturer's instruction.**
- **Make sure the used gland fits the cable/wire diameter. Check gland size and clamping range of the gland.**
- **Also, please refer to the relevant section.**



NOTICE

For Mobile Chargers:

BONDING/GROUNDING AND AC POWER SUPPLY CORD CONNECTION INSTRUCTIONS

- **Charger shall be bounded/grounded to reduce risk of electric shock.**
- **Charger is equipped with an electric cord having an equipment-bonding/grounding conductor and a grounding plug. The plug is to be plugged into an outlet that is properly installed and bounded/grounded in accordance with all local codes and ordinances.**
- **This unit is for use on a circuit having a nominal rating more than 120 volts and is factory-equipped with a specific electric cord and plug (4100P7W) that connects to an electric circuit. Make sure that the charger is connected to an outlet having the same configuration as the plug. Adapters shall not be used with this charger.**



DANGER

For Mobile Chargers:

Do not alter AC power supply cord or plug provided - where it does not fit outlet, have proper outlet installed by a qualified electrician, improper connection increases the risk of an electric shock.



NOTICE

For Pedestal and Wall Mounted Units: BONDING/GROUNDING INSTRUCTIONS

- This unit is to be connected to a bonded/grounded, metal, permanent wiring system, or an equipment-bonding/grounding conductor is to be run with circuit conductors and connected to equipment-bonding/grounding terminal or lead on battery charger.
- Connections to battery charger shall comply with all local codes and ordinances.

7.7.1. Electrical Connections

7.7.1.1. Limited Current Installation Suggestions

Current Limit Switch Setting	Suggested AC Plug Rating	Suggested Overcurrent Protection Device Upstream Rating
30A	60A	40A
60A	100A	80A
Max. input current	100A	100A



NOTICE

Refer to local code and regulations for final installation of overcurrent protection device upstream, cable size, AC receptacle rating, and AC plug rating.

7.7.1.2. Main Cable to Heliox 60kW charger

- Cable type: 3P+GND, shielded cables are optional unless required by local law.
- The diameter of the cable conductor must be determined by your contractor / electrician.
- Cross-section of the cable conductors:
 - Recommended: Stranded copper 2 AWG (35 mm²)
 - Conductors must be terminated with ferrule of appropriate size
 - Maximum size of wire: 2/0 AWG

Table: Wire requirements:

Temperature rating of wire for connection of the unit	Copper conductors only
167°F (75°C)	Use (A) AWG, 167°F (75°C) copper wire
194°F (90°C)	Use (A) AWG, 194°F (90°C) copper wire
(A) The conductor size shall be no smaller than the larger of the following: The conductor size used for the temperature test - see 54.2 or The 167°F (75°C) wire size based on the ampacities given in Table 310-16 of the National Electrical Code, ANSI/NFPA 70, and the derating factor described in 14.1.1.3	

7.7.1.3. AC connection circuit breaker

1. Connect the AC cables to the main circuit breaker, see [Figure 32](#).

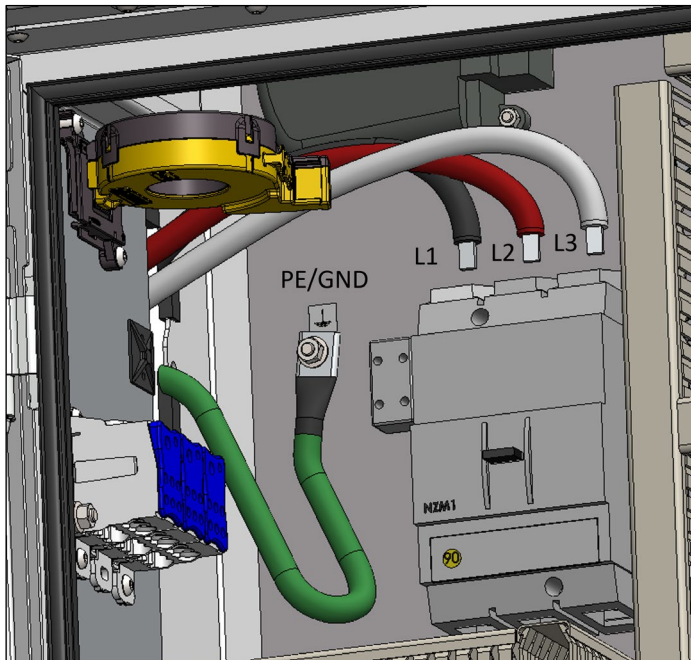


Figure 32: Connect AC cables to main circuit breaker - PE/GND cable to stud

2. Torque connections (80 lbs-in (9Nm)) in the circuit breaker, see [Figure 33](#).

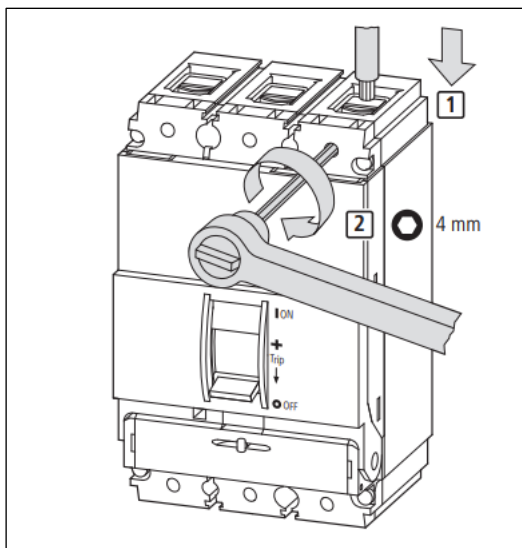


Figure 33: Torque connections circuit breaker

3. Connect PE/GND cable to the M6 PE stud, see [Figure 32](#).
(Cable needs to have an M6 cable lug - out of scope of delivery).
4. Torque PE/GND connection (100lbs-in (11Nm)) and mark it.

7.8. After installation check



NOTICE

The following test procedure is required for wall mounted or pedestal mounted chargers only.

Make sure, visually and by measurement, that the connections are made correctly.

- The connections are torque tight (80 lbs-in) and marked.
- The connections are connected in the corresponding phase connection.



NOTICE

Installer is responsible for covering all unused gland openings to ensure that the NEMA 3R rating is maintained.

8. Recommended commissioning

This section provides guidance on commissioning of the product in a safe environment based on the standards set by the federal, state and local government authorities rules and regulations.

8.1. Commissioning of the System

Commissioning procedure is detailed in a separate commissioning instruction document which is drafted per project. Refer to the project documentation that is attached to the contract which is signed and agreed upon.

8.2. Preliminary Commissioning Procedure

The following procedures must be completed before start the commissioning process:

1. All the installation work is completed as per the specification.
2. Grid power is available.
3. Local technician to be available to assist to switch the power on.
4. An electric vehicle compliant with the applicable charge technology standard of the charging station is available to perform the functional tests.
5. Safety procedures must be completed, various safety signs must be placed and PPE is available to do the last minute risk analysis before begin the onsite commissioning procedures.
6. Various service personnel to be coordinated in advance to perform the required tasks on site as per the requirements and ensure that all the required materials are also available on site during the planning phase.
7. Follow the federal, state and local government authorities protocol and comply with the various standards as required.

8.3. Commissioning Report



NOTICE

Helix can provide remote support and advise.

Commissioning procedures must be recorded and reported to analyse the efficiency of the EVSE product to verify the performance vs production. System anomalies can be detected during the commissioning process but it must be rectified with proper documentation to submit to the concern parties for evaluation.

Nobody shall be allowed to change any parts of the equipment / device settings or software configuration without written permission from Heliox.