LINCOLN ELECTRIC

Installation and Commissioning Manual

VELION™ DC Fast Charger

For use with machines having Model Numbers:

K5490-1

GENUINE™ LINCOLN PARTS

Register your machine:
www.lincolnelectric.com/register

Authorized Service and Distributor Locator:
www.lincolnelectric.com/locator

Save for future reference

Date Purchased

Code: (ex: 10859)

Serial: (ex: U1060512345)

Need Help? Call 1.216.481.8100
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Hours of Operation:
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After hours?
Use "Ask the Experts" at lincolnelectric.com
A Lincoln Service Representative will contact you no later than the following business day.

For Service outside the USA:
Email: globalservice@lincolnelectric.com

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Table of Contents

List of Figures

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List of Tables

Revision History

Version	Date	Description of Changes
	09/01/23	Planned document release.
1	11/23/23	First Draft document containing provided information.
2	12/22/23	Second Draft containing comments from Kieth and Brett.
3	1/03/24	Third Draft containing comments from Bryan and Steve.
4	1/18/24	Added partial updated graphics and comments from Daimler Truck North America - Remote Desktop Review - R2400103. And Teal, Lincoln Electric and, Altaworx Logistics Email 1/17/24 commissioning form.
5	2/07/24	Added adapter plate change. Updated Preventive Maintenance section and changed text box formatting in figures for html translation.
6	4/25/24	Added pedestal adapter plate changes, updated figures in pedestal installation and wiring sections. Updated preventive maintenance section for change of filter media. Replaced EV Quick Charger with DC Fast Charger.

Document Description

Introduction to the Manual

The original instructions of this document are in English (EN-US). All other language versions are translations of the original instructions. It is not always possible to show the configuration of your EVSE (electric vehicle supply equipment). The illustrations in this document show a typical setup. They are for instruction and description only. Metric units of measurement are provided between parentheses (). Keep this document

Document Function

The document only applies to the VELION™ DC Fast Charger, electric vehicle charger, including the variations and options listed on the purchase order. This document contains information to install the charger.

Intended Audience

The document is intended for qualified installers. For a description of the required qualifications, refer to the Safety Section.

Related Documents

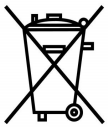
- Product Data Sheet
- Service Manual for a qualified service engineer
- Operation Manual

Symbols

The following symbols are used in this manual. Be sure to understand them before following the procedures.

Table 1 Symbols

Symbol	Description	Signal Word
	This condition can cause injury or death.	DANGER
	This condition can cause injury.	WARNING
	This condition can cause damage to equipment.	CAUTION
Note	A note provides specific procedure information.	Note
	 Electricity can cause injury or death. Follow lockout and tagout procedures to reduce the chance of injury or death.	DANGER Risk of Electric Shock
	 An arc flash can cause serious injury or death. Follow lockout-tagout procedures to reduce the chance of injury or death.	DANGER Arc Flash Hazard
	 A strong EMF (electromotive force) field is present when quick charging. Some implanted medical devices may be affected.	WARNING EMF Field Present
	 Equipment Grounding Conductor Symbol. Electricity can cause injury or death. Follow	DANGER Risk of Electric Shock

Symbol	Description	Signal Word
	lockout and tagout procedures to reduce the chance of injury or death.	
	Recycle electronics equipment. Follow local disposal procedures.	WARNING Proper Electronics Disposal
	AC Current Symbol	AC
	3 Phase Alternating Current Supply Symbol	3 Phase Supply

Abbreviations

The following list contains the abbreviations used in this document.

Table 2 Abbreviations

Abbreviation	Definition
AC	Alternating current
CCS	Combined charge system standards used
DC	Direct current
EV	Electric vehicle
EVSE	Electric vehicle supply equipment
IP Rating	Protection against dust and water
IK Rating	Protection against shock and impact
OCPP	Open charge point protocol for communication
PE	Protective earth
PPE	Personal protective equipment
RFID	Radio-frequency identification payment medium
THDi	Total signal harmonic distortion (current)

Terminology

The following list contains the terms used in this document.

Table 3 Terminology

Term	Definition
Network operating center	Facility of the manufacturer to do a remote check on the correct operation of the charger.
Cabinet	Enclosure of the charger, including the components on the inside.
Cable slack	Extra length of cable from the top of the foundation so that the cable length is sufficient to connect to the correct terminal in the cabinet.
CCS	Combined Charging System, a standard charging method for electric vehicles.
CHAdeMO	Abbreviation of CHArge de MOve, a standard charging method for electric vehicles.
Contractor	A third party that the owner or site operator hires to do engineering, civil and electrical installation work.
Grid provider	Company that is responsible for the transport and distribution of electricity.
Local rules	All rules that apply to the charger during the entire lifecycle of the charger. The local rules also include the local and national codes, laws, and regulations.
Open charge point protocol	Open standard for communication with charge stations.
Owner	Legal owner of the charger.
Site operator	Entity that is responsible for the day-to-day control of the charger. The site operator does not have to be the owner.
User	Owner of an electrical vehicle, who uses the charger to charge their vehicle.

Security and Data Storage

The hosting center environment is built with state-of-the-art equipment, technology and operating expertise. An established fail-over protect the information stored in the system.

Accessing Data

Access to company data is limited to users assigned by that Company's Administrator. If the network or Internet connection is lost, the system continues to collect and buffer data until the network connection is re-established. Once the Internet connection is reestablished, all data is transferred.

Important Safety Instructions

Save These Instructions

This manual contains important instructions for Model No. K5490-1 Pedestal and Charger Tower that shall be followed during installation, operation, and maintenance of the unit.

Use the Electric Vehicle Service Equipment (EVSE) only as intended. The EVSE is intended for DC charging of electric vehicles (EV)s. The EVSE is intended for indoor or outdoor use. The properties of the electrical grid, the ambient conditions and the EV must comply with the technical data of the EVSE. Only use the EVSE with accessories that the manufacturer provides and that obey local rules.

- This equipment is designed and built with safety in mind. However, your overall safety can be increased by proper installation and thoughtful operation.
- READ THIS MANUAL BEFORE INSTALLING, COMMISSIONING OR MAINTAINING THE CHARGE EQUIPMENT.
- Before Servicing Unit: User must disconnect all power sources and follow lockout and tagout procedures. Wait 5 minutes after disconnecting all sources of supply before accessing unit. Refer to Danger High Voltage Decal on Unit.

Owner Responsibilities

The owner is the person who runs the charger for commercial or business purposes or leaves it to a third party for use. During operation the owner bears legal responsibility for the protection of the user, other employees or third parties. The owner has the following responsibilities.

- Know and implement the local safety rules and ownership responsibilities.
- Identify the hazards (in terms of a risk assessment), resulting from the working conditions on the site.
- Only operate the charger with the protective devices installed.
- Verify and document that all protective devices are installed after installation or maintenance work.
- Develop an emergency plan that instructs people what to do in case of an emergency.
- Verify and document that all employees and third parties are qualified according to the applicable local rules to do the work.
- Identify a site operator who is responsible for the safe operation of the charger and for the coordination of all work.

Liability

The manufacturer is not liable to the purchaser of the charger or to third parties for damages, losses, costs, or expenses incurred by the purchaser or third parties if any target group mentioned in the related documents does not obey the rules below.

- Obey the instructions in this and related documents.
- Do not misuse or abuse the charger.
- Only make changes to the charger if the manufacturer approves of the changes in writing.
- Do not use a charging plug not approved by The Lincoln Electric Company to charge an EV.
- Do not charge an EV battery not approved by the vehicle manufacturer.

Cyber Security

This product is designed to be connected to and to communicate information and data via a cloud interface. The manufacturer and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

The Owner shall establish and maintain any appropriate measures (not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of anti-virus programs) to protect the product, the network, its system, and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information.

The manufacturer and its affiliates are not liable for damages and/or losses related to such security breaches, any unauthorized access, interference, intrusion, leakage and/or theft of data or information.

Personal Protective Equipment

Personal protective equipment (PPE) is required for all persons on-site during the preparation, construction, installation, maintenance, repair or removal of the charging equipment or related materials and equipment used for site preparation, installation, setup, or maintenance of the EV (electric vehicle) charger.

The user / operator is not required to use personal protective equipment during the charging process for an electric vehicle manufactured under applicable required standards.

Required safety equipment varies for the requirements for the active phase of the site development and charging equipment preparation and installation. The minimum required personal protective equipment (PPE) includes protective coverings such as, safety shoes, hard hat, protective clothing, glasses, gloves, and hearing protection in accordance with applicable safety regulations such as:

- Eye and Face Protection: ANSI Z87.1-2010, ANSI Z87.1-2003, or ANSI Z87.1-1989(R1998).
- Head Protection: ANSI Z89.1-2009, ANSI Z89.1-2003, or ANSI Z89.1-1997.
- Foot Protection: ASTMF-2412-2005 and ASTMF-2413-2005, ANSI Z41-1999, or ANSI Z41-1991.
- Electrical Rubber Insulating Equipment: ASTM D120-09, ASTM D-178-01 (2010), ASTM D-1048-12, ASTM D-1049-98 (2010), ASTM D-1050-05 (2011), or ASTM D1051-08.
- Refer to 29 CFR 1910.95(c) for a description of the requirements for a hearing conservation program.
- Visit www.osha.gov/complianceassistance/cas or call 1-800-321-OSHA (6742) to contact your local OSHA office.

Electronics Disposal

Products and components used in the electrical and electronic industries may be environmentally hazardous. Follow and adhere to the procedures in this manual and federal, state, and local laws, mandates, codes, and practices.

Fire Safety

Always have fire-fighting equipment ready for immediate use and know how to use it. Refer to federal, state, and local guidelines including the National Fire Protection Association (NFPA), Occupational Safety and Health Association (OSHA), National Electric Safety Code, (NESC) Code.

Emergency Power Shut-Off

An emergency electrical power shut-off procedure shall be prepared and approved by the engineer of record to train the site managers and staff in case of fire, flood, or emergency. Include power source location and access procedures. Distribute emergency contact names and contact information to site managers and staff, and to local emergency service providers.

Electric and Magnetic Fields (EMF)

Electric current flowing through any conductor causes localized Electric and Magnetic Fields (EMF). Current creates EMF fields around cables and charge equipment.

Peak charge current may affect the operation of some medical or implantable electronic devices, such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator. Check with your electronic device manufacturer concerning the effects that EV quick charging may have on such electronic devices

before using the Velion DC Fast Charger. Consult with your doctor before powering up or operating the charger.

These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people. Exposure to EMF fields may have other health effects which are now not known.

Qualifications for Installers

Charger installation includes site preparation, installing conduit, equipment foundations, power, and earth-ground wiring, and commissioning the charger.

- The qualified installer knows the charger requirements and its safe installation.
- The installer is qualified according to industry standards and licensed in the local governing jurisdiction to do the work.
- It is the responsibility of the owner to make sure that all qualified installers obey the local rules, the installation instructions, and maintain the operation of the charger within the design specifications.

Safety Messages

Safety messages are used through the manual to indicate situations or conditions that may hazardous. DANGER indicates conditions that may cause death or injury. WARNING indicates a situation that may cause severe injury. CAUTION describes dangers that may cause you injury or possible equipment damage. Read and understand all DANGER, WARNING and CAUTION statements before doing the tasks following the DANGER, WARNING and CAUTION statements.

This document, the related documents and the warnings included do not replace your responsibility to use common sense when working on the charger. Only do the procedures that this document and the related documents show and that you are qualified to do.

Obey the local rules and the instructions in this manual. If the local rules contradict the instructions in this manual, to the extent permitted by law, in case of inconsistency or contradiction between any requirements or procedure contained in this document and local rules, obey the stricter between the requirements and procedures specified in this document and the local rules.

DANGER

Personal Injury

Using the Electric Vehicle Service Equipment (EVSE) in any other way than described in this and the related documents can cause death, injury, and damage.

Installing Earth-Ground and Power and Service and Maintenance

DANGER

Risk of Electric **Shock**

Electricity can cause injury or death. Document and follow lockout and tagout procedures when working with live circuits to reduce the chance of injury or death.

- A qualified installation engineer, certified for local and state regulations is required for all electrical connections.
- Make sure that the connections to the charging system comply with all applicable local regulations.
- Use inspected voltage and current meters as intended by the manufacturer.
- Wear safety shoes, protective clothing, glasses, gloves that have been inspected. Wear hearing protection as needed. Refer to the Personal Protection Equipment section.
- Keep all equipment safety guards, covers and devices in position and in good repair. During maintenance, remove guards only when necessary and replace them when the maintenance is complete.

- Install equipment in accordance with the U.S. National Electrical Code, all local codes, and the manufacturer's recommendations.
- Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.


DANGER

Arc Flash Hazard

An arc flash can cause serious injury or death. Follow lockout-tagout procedures to reduce the chance of injury or death.


WARNING

EMF Field Present

A strong EMF (electromotive force) field is present when quick charging. Some implanted medical devices may be affected.

WARNING

Personal Injury Hazard

- Dispose of filters and consumable products according to local waste and recycling regulations.
- If safety devices are removed, immediately install the safety devices before power is applied.

Moving the Pedestal and Charger Tower

WARNING

Risk of Personal Injury

- A qualified installation engineer must supervise the unloading, moving, and placing the pedestal and the charger tower.
- Make sure that the hoisting equipment can lift the charger tower cabinet and pedestal safely. Consider the mass and center of gravity of the pedestal.
- Personal protective equipment required by local codes including safety shoes, hard hat, safety glasses, and gloves are worn. Refer to the Personal Protection Equipment section.

During Installation

WARNING

Risk of Personal Injury and Equipment Damage

- A qualified installation engineer is required to do the installation.
- A certified engineer shall review the structural integrity of the pedestal foundation and anchors and make any modifications to meet local codes.
- Wear safety shoes, hard hat, protective clothing, glasses, and gloves. Wear hearing protection. Refer to the Personal Protection Equipment section.
- Verify and document that there is no voltage on the AC input cables during the complete installation procedure.
- Keep unqualified personnel at a safe distance during installation.
- Only use conductors of sufficient gauge and insulation to handle the rated current and voltage.
- Make sure that the load capacity of the AC power grid meets the requirements for the pedestal.
- Verify and document that the wiring is protected from damage and cannot get pinched when opening or closing the doors or access panels.

- Protect the charger tower cabinet and pedestal with safety devices and practices specified by local rules.

WARNING

General Risk

Installation, operation, maintenance, and repair procedures must be performed only by qualified technicians.

Discarding Electrical Components

WARNING

General Risk

Lincoln Electric requires the return of non-operational charger tower cabinet and pedestal modules. Contact Lincoln Electric for more information.

Dispose of miscellaneous electrical components safely. Incorrect waste handling can negatively affect the environment and human health due to potentially hazardous substances used in the components. Correct disposal of these products contributes to reusing and recycling of materials and protection of the environment.

- Obey the local rules to discard consumable parts or packaging material.
- Obey the local rules to discard batteries, used filters, wiring insulation, and cleaning materials.
- Discard electrical and electronic equipment separately in compliance with the WEEE - 2012/19/EU Directive on waste of electrical and electronic equipment.
- Do not mix or dispose of the charger or its components with household waste at the end of use. Instead, hand the charger over to a local community waste collection point for recycling.
- For more information, contact the local waste-disposal department.

DANGER

Tip Over Hazard Risk of Pinching or Crushing

- The enclosure can crush you resulting in serious injury or death
- Read and follow precautions in The Large Enclosure Safe Handling Requirements that accompanied the enclosure to reduce the chance of injury or death. It is also available at nvent.com/Hoffman.
- Do not transport cabinet using the pallet end slots. These slots are only for trailer loading and unloading.
- Stabilize the enclosure before removing lift straps.

VELION™ EV Charger Specifications

Specifications

Table 4 VELION™ Charger Tower Specifications

Charger Tower Specifications	
Charging Type	DCFC, DC Fast Charging
Maximum Input Current	200A
Input Voltage	460VAC +/- 10% (60Hz), 3-Phase, Protective Earth (UL Model)
DC Output Voltage	200-1000V DC
Output Current	Up to 300A
DC Output Power (max)	150kW
Efficiency (full-load)	> 95%
Power Factor (full-load)	> 0.90
THDi	< 5%
Environmental Rating	NEMA TYPE 3R (IP-54 equivalent)
IK Rating	IK08
Operating Temperature	-30 deg C to +50** deg C
Mounting	Free Standing Cabinet 30 x 18 inch pattern for ½ in anchors
Dimensions Depth x Width x Height	38.4* x 24 x 72 inches (975 x 609 x 1828 millimeters)
Shipping Dimensions Depth x Width x Height	51.75 x 79 inches x 35.75 inches (1315 mm) x (2007 mm) x (908 mm)
Weight	1003 lbs (455 kg)
Shipping Weight	~1040 lbs (~470 kg)

*Depth is 41.49 in. (105 mm) including door handles.
**Output derating >40C

Table 5 VELION™ Pedestal Specifications

Pedestal Specifications	
Outlet Type	Single CCS Cable
Network Connection	GSM/3G/4G modem;10/100 Base-T Ethernet
Communication	OCPP 2.0.1 and 1.6
Authentication/Payment	RFID/Credit card reader/App
User Interface	15 in LCD high-contrast touchscreen
Environmental Rating	NEAM TYPE 3R (IP-54 equivalent)
IK Rating	IK08
Operating Temperature	-30 deg C to +50** deg C
Mounting	Free Standing
Cable Length	12 ft (3.7 m)
Dimensions Depth x Width x Height	24 x 19 x 87 inches (610 x 483 x 2210 mm)
Shipping Dimensions Depth x Width x Height	39 x 29 x 96 inches (990 x 737 x 2438 mm)
Weight	350 lbs (159 kg)
Shipping Weight	475 lbs (215.45 kg)

**Output derating >40C

Table 6 System Certification Standards

System Certification Standards	
Charging System	UL2202, UL2231-1, UL2231-2, SAE J1772, SAE J2894
Communication to the EV	DIN 70121, ISO15118-2/-3

Product specifications and features are subject to change. Confirm specifications prior to purchase.

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System Overview

This section describes the pedestal and charger tower components, their placement, and orientation.

Pedestal Overview

Exterior Components

Figure 1 shows the placement and function of the pedestal exterior components.

Number	Description	Function
1	RFID Charge Card Reader	User card reader for billing
2	Operator Input Pushbuttons	Manual pushbuttons for operator commands
3	Operator Message Display	Touchscreen for input and EV Charger messages
4	Operation Indicator Light	Light may be green, red, or blue. Refer to Charger Operation Indicator Light Bar
5	Wiring Access Cover	Access to the DC and communication wiring
6	Cable and Connector	Charger connection to the Electric Vehicle

Figure 1 Pedestal Exterior Components

Figure 2 shows the pedestal charge cable range of motion.

Number	Dimension	
1	102 in	2591 mm
2	132 in	3353 mm
3	132 in	3353 mm
4	110 in	2794 mm
5	78 in	1982 mm

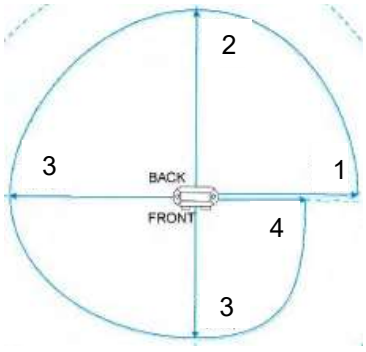


Figure 2 Pedestal Cable Management

Interior Components

The pedestal has no user, troubleshooting, or service components inside the operator interface. Refer to the Installing the Pedestal Section for the layout of the pedestal wiring components.

Pedestal Dimensions

Dimensions of the pedestal are 24 x 19 x 87 inches (610 x 483 x 2210 mm).

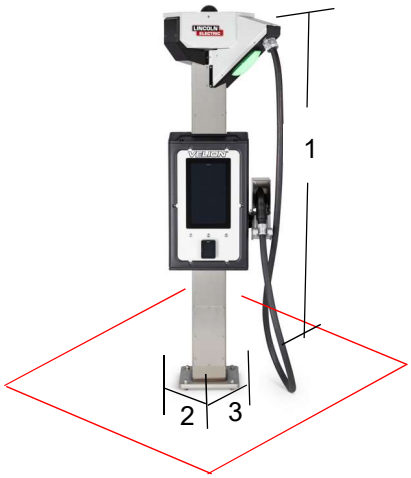


Table 7 Pedestal Dimensions

Number		Dimension
1 (Height)	87 in	2210 mm
2 (Width)	24 in	610 mm
3 (Depth)	19 in	483 mm

Figure 3 Pedestal Floor Space Requirements

Charger Tower Overview

Exterior Components

Figure 4 shows the names and placement of the charger tower exterior components.

Number	Part
1	Lift Eyebolts
2	Air Intake/Exhaust
3	Access Handle with Lock

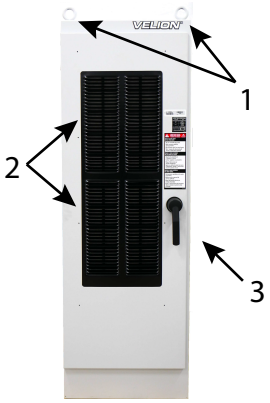


Figure 4 Charger Tower Exterior Components

Interior Components

Figure 5 shows the names and layout of the components in the charger tower cabinet.

Number	Part
1	Power Modules (4 per tower)
2	Front Door and Back Door Power Interlock Switches
3	Power Module Cooling Fans (2 per module)
4	AC Input Connections
5	DC Output Connections
6	Input Power Filter
7	Communications Module
8	Pedestal Communication Connections

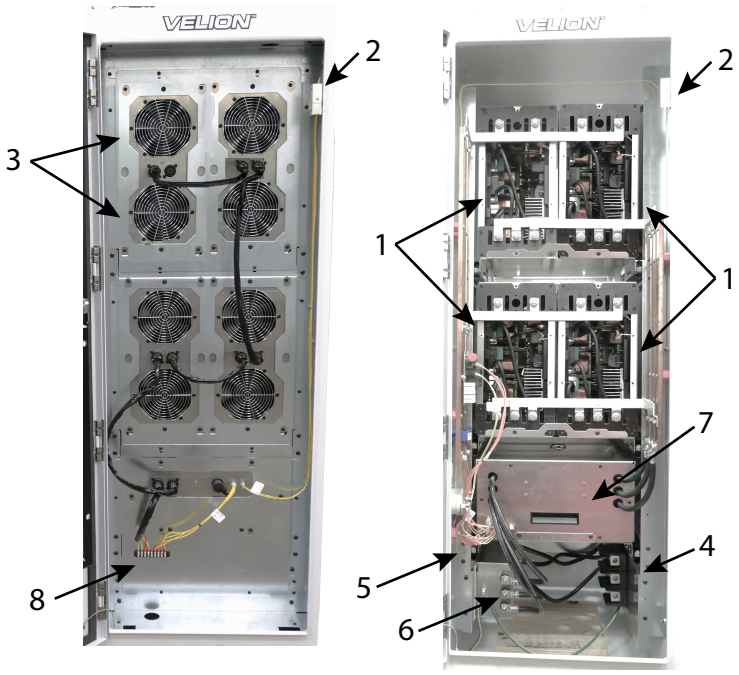


Figure 5 Charger Tower Interior Component Locations

Space Requirements

Dimensions of the charger tower are listed below.

36 in. (914 mm) of open space is required for service and maintenance between the cabinet and the closest bollards or the closest wall or obstacle.

Table 8 Power Cabinet Footprint

Number	Dimensions	
1 (Height)	72 in	1828 mm
2 (Maintenance)*	36 in	914 mm
3 (Width)	24 in	610 mm
4 (Depth)	38.4 in	975 mm
5 (Maintenance)*	36 in	914 mm

*Distance from cabinet to the nearest object.

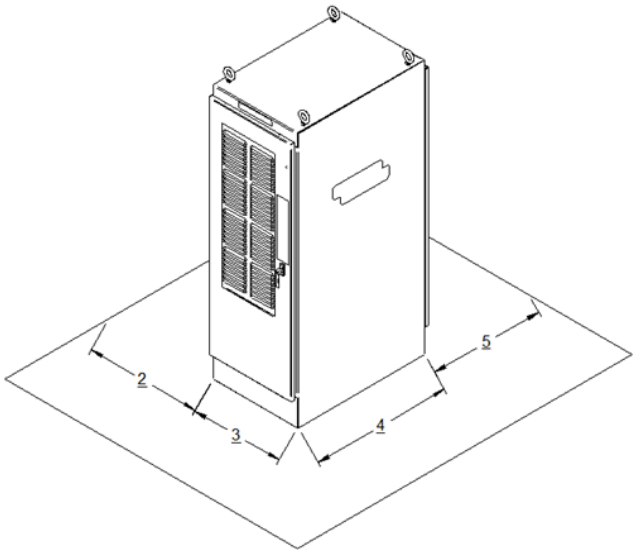
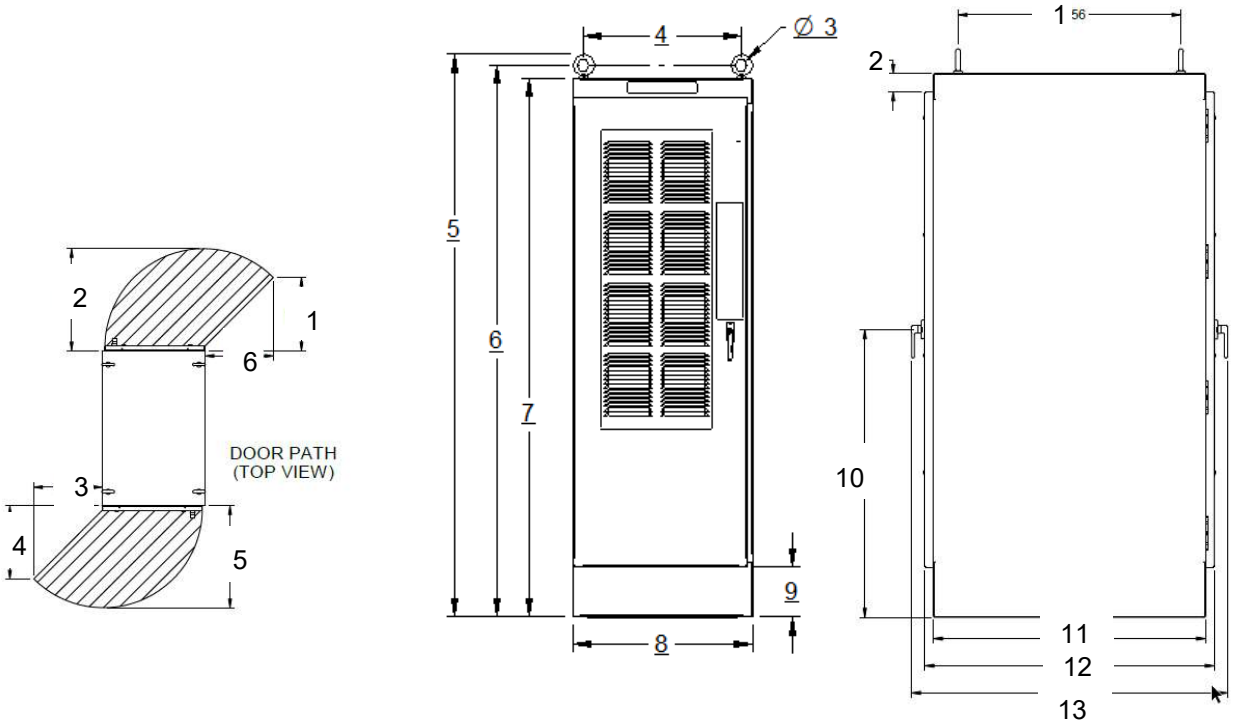


Figure 6 Charger Tower Cabinet Space Requirements



Door Path	
Number	Dimension
1	17 in (432 mm)
2	23.7 in (602 mm)
3	15.8 in (402 mm)
4	17 in (432 mm)
5	23.7 in (602 mm)
6	15.8 in (402 mm)

Cabinet Dimension	
Number	Dimension
1	29.56 in (751 mm)
2	2.44 in (mm)
3	1.65 in (62 mm)
4	21.12 in (537 mm)
5	75.32 in (1914 mm)
6	73.84 in (1876 mm)
7	72.06 in (1829 mm)
8	24.06 in (612 mm)
9	6.64 in (169 mm)
10	38.13 in (969 mm)
11	36.06 in (916 mm)
12	38.06 in (967 mm)
13	42.86 in (1089 mm)

Figure 7 Charger Tower Cabinet Dimensions

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Receiving the Charger

DANGER

The enclosure can tip and crush you resulting in serious injury or death.

- Read and follow precautions in The Large Enclosure Safe Handling Requirements information that accompanied the enclosure. It is also available at nvent.com/Hoffman.
- Do not transport using pallet end slots. These slots are only for trailer loading and unloading.
- Stabilize the enclosure before removing strapping.
- This warning may be repositioned only after the enclosure has been permanently installed.
- Unpacking should be done by an experienced, qualified installation engineer.
- Inspecting the shipment includes comparing shipping lists to the delivered shipment.
- Check the condition of the shipment by inspecting the containers.
- Report damage and missing components to Lincoln Electric.

Moving Shipping Containers

Refer to the Specifications Section for weight of the containers. Moving containers shall be supervised by a structural engineer licensed in the local governing jurisdiction.

Number	Part
1	Pedestal
2	Charger Tower Cabinet

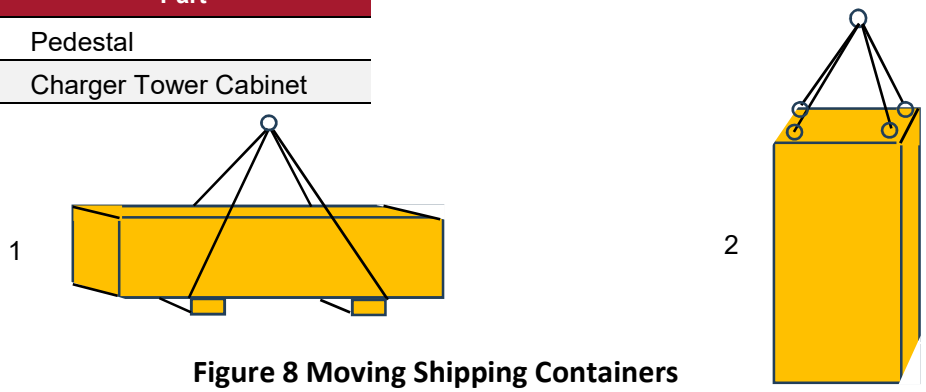


Figure 8 Moving Shipping Containers

Pedestal	
Number	Dimension
1	24 in (610 mm)
2	19 in (483 mm)
3	86 (2438 mm)

Charger Tower	
Number	Dimension
1	35.75 in (908 mm)
2	79 in (2007 mm)
3	51.75 (1315 mm)

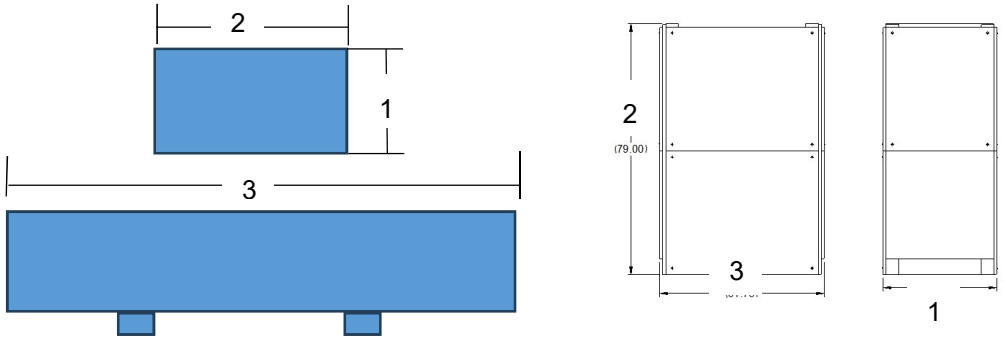


Figure 9 Shipping Container Dimensions for Pedestal and Charger Tower

Parts Not Included in the Shipment

- Cable and wiring lugs for attaching the power and communications wiring.
- Mounting hardware including anchors, washers, and nuts to secure the cabinet and pedestal.
- Hand tools for installing, and wiring the cabinet and pedestal.

Included in the Shipment

- Installation Commissioning and Preventive Maintenance Manual
- Maintenance Manual
- Operation Manual
- Hoffman Large Enclosure Safe Handling Requirements manual.
- Padlocks for locking the charger tower cabinet door handles (qty 2).

Installing the Charger Tower

DANGER
Risk of Electric Shock

Electricity can cause injury or death. Document and follow lockout and tagout procedures when working with live circuits to reduce the chance of injury or death.

Safety

- The installation engineer must be qualified according to local codes and regulations to install and connect the charge tower cabinet and pedestal.
- Wear safety shoes, hard hat, protective clothing, glasses, and gloves. Wear hearing protection as needed. Refer to the Personal Protection Equipment section.
- Verify and document that there is no voltage on the AC input cables to the charger cabinet by following Lockout/Tagout procedures during the complete installation procedure.
- Keep unqualified personnel at a safe distance during installation with the use of cones, caution tape, physical barriers, designation of hardhat area, or as required by local regulations.
- Only use conductors of sufficient gauge and insulation to handle the rated current and voltage load.
- Verify and document that the load capacity of the AC power grid meets the requirements for the pedestal.
- Verify and document that the wiring is protected from damage and cannot get pinched when opening or closing the doors or access panels.
- Seal the cabinets from rain and cleaning solutions. Do not use a hose to wash the charger cabinet or pedestal.
- Protect the charger tower and pedestal with safety devices such as bollards and measures specified by local codes and regulations.
- Verify and document that the power cable, wiring, and conduit are installed per the local installation codes.
- The fixed unit shall be provided with instructions indicating that the installation shall not be made in a commercial garage (repair facility) or closer than 20 feet (508 mm) from an outdoor motor fuel dispensing device.

Attaching the Charger Tower to the Foundation

This section describes the charger tower installation to the completed foundation. Physical installation requires power wiring, conduit, and foundation placement before the charging system can be set into place and wired.

The installation of this unit including but not limited to the foundation, anchorage, rigging and hardware shall be approved by a structural engineer licensed in the local governing jurisdiction.

Note: Make sure that the space around the charger cannot get blocked. Think of snow or containers. If the charger is de-energized for more than two hours, activate the internal heater to remove condensation from the cabinet.

Required Tools Not Supplied

- T27 and T30 Torx bit driver for the screws securing the baffle and retaining bracket in the cabinet.
- Wrenches and sockets that are compatible with the customer provided cement anchors. Recommended minimum size compatible out of the box is 1/2" anchors. Follow local guidances.
- Hoist cables or certified lift straps.
- 5/16 allen for AC to fuse block connection. 9/16" socket for ground connection.
- Phillips screw driver and wire crimping tools to attach the communication wires to the auxiliary terminal strip.
- Wrench and sockets that are compatible with the customer provided hardware for the dc connections. Out of box hardware compatibility size of 3/8" hardware.

Preliminary Requirements

Before installing the charger tower cabinet, verify that the foundation pad is cured, and prepared. Local regulations may require special preparation beyond that provided in this manual for structural mounting. Follow local regulations when additional or alternate procedures are required to meet local requirements.

Installing the Cabinet Anchors

The foundation and anchorage shall be approved by a structural engineer licensed in the local governing jurisdiction. 4 holes are provided in the floor of the cabinet for structural anchors, see Figure 10. The holes are sized for 0.5-inch anchors, these can be enlarged per the guidance of the engineer of record. The recommended length of the construction anchor above grade is 5 inches.

Wiring Conduit

The wiring and conduit shall be installed per the local jurisdiction installation codes. Provided it does not conflict with jurisdictional codes. It is preferred to route the wiring in the conduit as shown in Figure 10. Cut the conduit extension a minimum of 2 inches (50 mm) above the foundation.

A) One wiring conduit, located within the auxiliary-conduit area for the communication wiring to the pedestal.

B) One wiring conduit, located within the primary-conduit area for the AC power to the charger tower, sized for the installation and the earth ground.

C) One wiring conduit, located within the secondary-conduit area for the DC power to the pedestal, sized for the installation.

Number	Conduit Function
1	**Auxiliary** Communication to Pedestal **O** - Preferred Conduit Location
2	**Secondary** DC Power to Pedestal **O** - Preferred Conduit Location
3	**Primary** AC Power to Source **O** - Preferred Conduit Location
4	Qty 4 Structural Anchors
5	Side 30.00 in (762 mm)
6	Back (Wide) 18.00 in (457.2 mm)
Note: Allow at least 1 in. (25.4mm) between each conduit. The recommended length of the anchor above grade is 5 inches.	

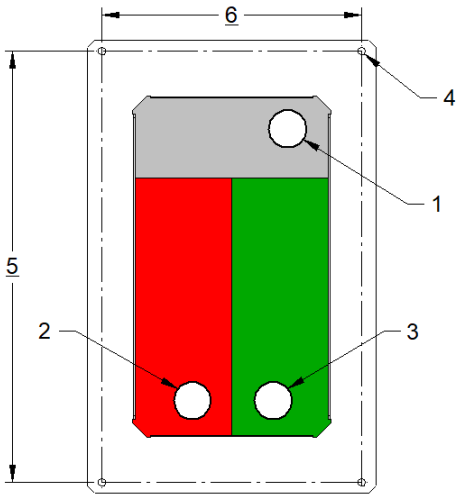


Figure 10 Charger Tower Cabinet Conduit Locations

Preparing the Cabinet for Installation

Remove the baffle access plate covering the access to the bottom of the cabinet on the front.

1. Unplug the two-wire connector for the door interlock switch (1).
2. Unplug the four-wire connector for the cabinet communications (2).
3. Unplug the power connector for the cabinet cooling fans (3).
4. Unplug the four-wire connector for the cabinet communications (4).
5. Use a T30 Torx driver to remove the qty 2 - 1/4-20 screws, and a T27 Torx driver to remove the qty 8 -#10-24 screws. Remove the retaining bracket Use
6. a T27 Torx driver to remove the qty 4 - #10-24 screws. remove the bottom baffle.

Note: Use caution to reduce the chance of personal injury from the sheet metal.

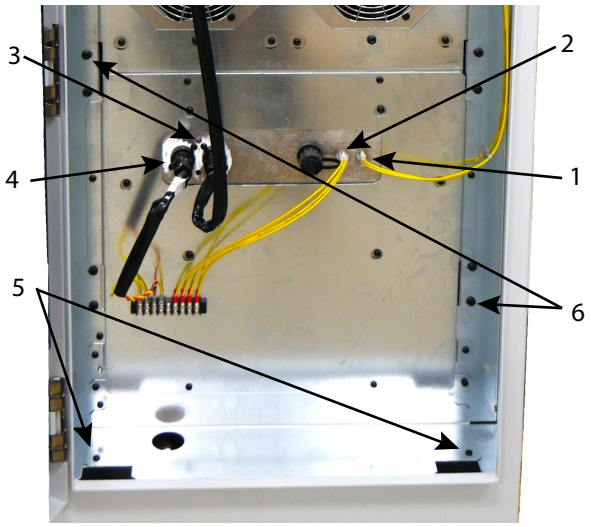


Figure 11 Removing the Retaining Bracket and Baffle

Number	Function
1	Cabinet Floor
2	Washer
3	Lock Washer
4	Securing Nut
5	Structural Anchor
6	Template
7	Foundation

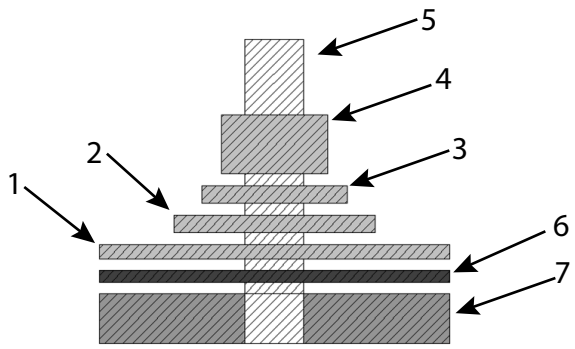


Figure 12 Charger Power Cabinet Installation

Attaching the Cabinet to the Anchors

1. Lift the cabinet by the 4 lift eyebolts only (1).
2. Align the cabinet over the anchors (2).
3. Lower the cabinet onto the anchors (3).
4. Set the 4 washers onto the anchors. Thread the 4 nuts onto the 4 anchors to secure the cabinet (3).
5. Torque on the fasteners depends on the installed anchor type. The recommended minimum anchor size is ½ in. Do not exceed the torque specifications of the anchors and/or epoxy. Typically, a maximum of 20 ft. lbs.
6. Remove the lift cables.

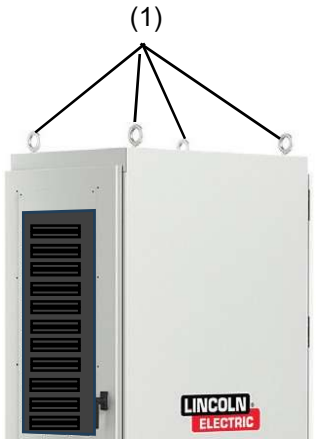


Figure 13 Lifting the Cabinet

Wiring the Charger Tower


DANGER
Risk of Electric Shock


Electricity can cause injury or death. Document and follow lockout and tagout procedures when working with live circuits to reduce the chance of injury or death.

- The power and neutral (or ground) circuits are electrically hot when the power is on.
- Turn off power using lockout/tagout procedures at the supply power disconnect before working on the equipment.
- Do not install, operate, or repair this equipment without reading this manual and the safety precautions contained throughout.
- Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.

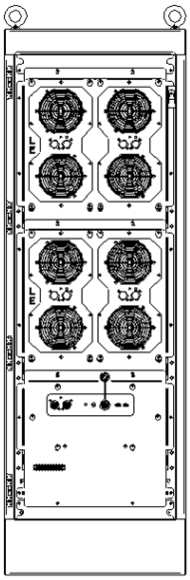
DANGER
Risk of Electric Shock

- A qualified installation engineer, certified for local and state regulations is required for all electrical connections.
- Wear safety shoes, protective clothing, glasses, gloves that have been inspected. Wear hearing protection as needed. Refer to the Personal Protection Equipment section.
- Document and follow lockout and tagout procedures when working with live circuits.

Connecting Power

Connecting power includes connecting the ground and source power lines to the charger tower and DC power with the communication wires to the pedestal. The earth ground and power wiring shall be approved by an electrical engineer licensed in the local governing jurisdiction. Note that there is no internet cable, communication is cloud based.

Installing the Earth Ground



Preliminary Requirements

- Verify and document the input power has been locked/tagged out.
- Size the earth ground wire for the application.
- Cut the wire to length.
- Prepare the wire end for the wire lug.
- Attach a lug compatible with a 3/8-16" bolt to the wire and heat shrink.

Tools Required

9/16 in. wrench.

Procedure

1. Ensure earth ground is appropriate per local electrical code.
2. Attach the earth ground conductor to the earth terminal located under the fuse block at the back of the cabinet.
3. Torque the nut to 177 in.-lbs. (20 Nm).

Number	Function
1	Cabinet Earth Ground
2	Earth Ground Cable

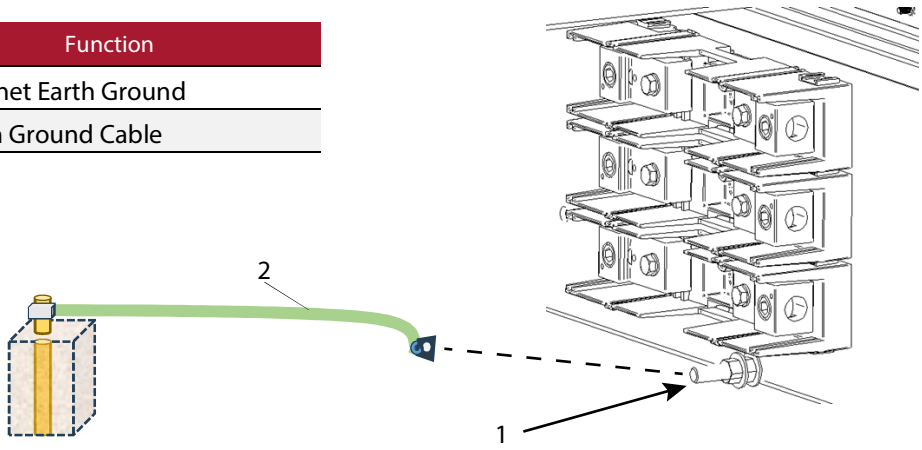


Figure 14 Connecting the Charger Tower Cabinet Earth Ground

Wiring the Charger Tower

Connecting AC Power

Preliminary Requirements

- Verify and document the input power has been locked/tagged out.
- Size the AC wires for the application.
- Cut the wires to length.
- Strip wire 15/16".

Tools Required

- Tools to strip the wires at the terminals to the fuse block.
- 5/16 in. Allen key

Procedure

1. Attach the AC power conductors to the L1, L2, L3 terminals on the power conditioner at the back of the cabinet.
2. Torque set screws in fuse block to 275 in. lbs.

Note: L1 is the bottom phase connection. L3 is the top phase connection.

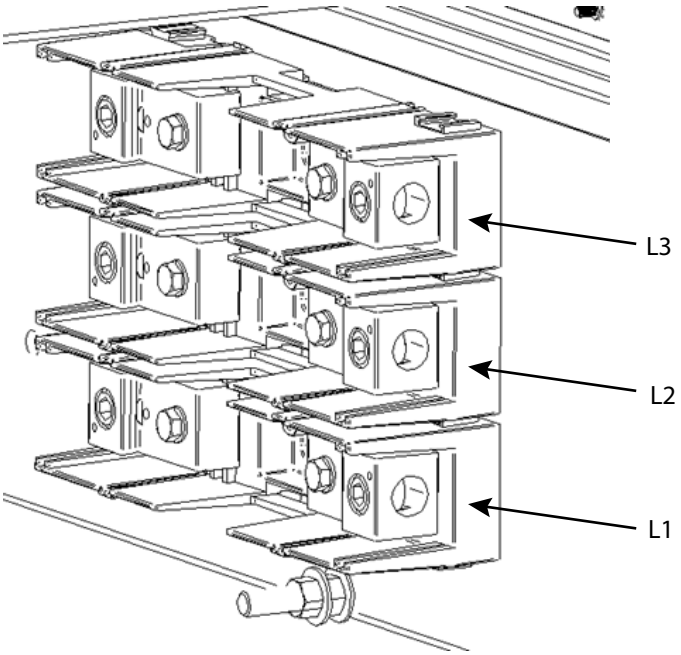


Figure 15 Connecting the Charger Tower AC Power

Connecting DC Power

Preliminary Requirements

1. Verify and document the input power has been locked/tagged out.
2. Size the DC voltage wire for the application.
3. Prepare the wire for a lug to attach onto the 3/8 in. bolt. Strip and lug per the lug manufacturer recommendations. Heat shrink where the lug meets the wire insulation.
4. Identify and label the wires.

Tools Required

Tools needed to fasten 3/8 in. (10mm) hardware provided by installer.

Procedure

Attach the DC power conductors to the DC+ and DC- terminals on the power conditioner at the front of the cabinet.

1. Attach the white wire to the DC- Terminal.
2. Attach the red wire to the DC+ Terminal.
3. Torque the 3/8" hardware to 15 ftlbs.

Number	Function
1	DC + Connection
2	DC - Connection

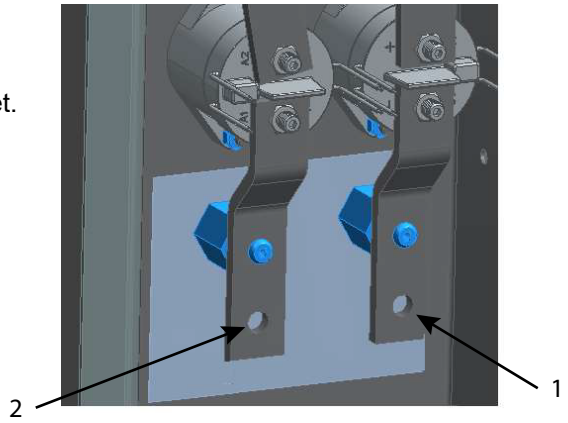


Figure 16 Connecting the Charger Tower DC Power

Connecting Signal Wiring

Note that there is no internet cable, communication is cloud based.

Preliminary Requirements

1. Size the wire for the application.
2. Strip the wire to 0.25 in. (6 mm).
3. Prepare the wire end for the #6 wire lug.
4. Attach wire lugs to the wires and apply heat shrink where the lug meets the wire insulation.
5. Identify and label the wires on both ends.

Procedure

1. Plug in the connector for the communications wires and the connector for the door open switch to the connectors.
2. Attach the communication wires to the terminal block. Torque the terminal block screws to 6-8 in. lbs.

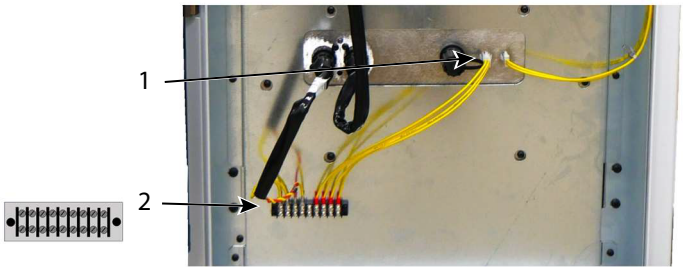


Figure 17 Charger Tower Cabinet Communication Wiring

Communication Wiring to the Charger Tower Terminal Block

Number	Description
1	4C (48V+)
2	3C (COM)
3	2C (CAN L)
4	1C (CAN H)
5	SHIELD
6*	S22A (E-STOP)
7*	S21A (E-STOP)
8*	S12A (E-STOP)
9*	S11A (E-STOP)

*6-7 and 8-9 have jumpers installed from the factory

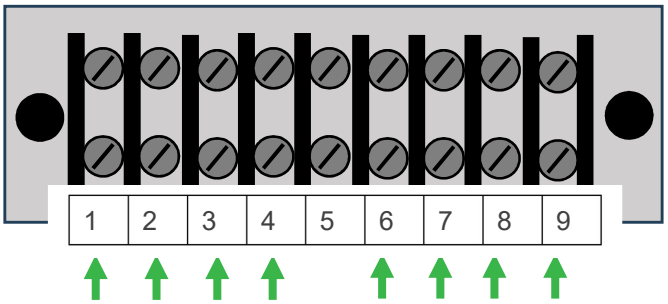


Figure 18 Connecting the Charger Tower Cabinet Communication Wiring

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Installing the Pedestal

WARNING
General Risk

- The installation engineer must be qualified according to local codes and regulations to install and connect the charge tower cabinet and pedestal
- Wear safety shoes, hard hat, protective clothing, glasses, and gloves. Wear hearing protection as needed. Refer to the Personal Protection Equipment section.
- Verify and document that there is no voltage on the AC input cables such as by following Lockout/Tagout procedures during the complete installation procedure.
- Keep unqualified personnel at a safe distance during installation with the use of cones, caution tape, physical barriers, designation of hardhat area, or as required by local regulations.
- Verify and document that the wiring is protected from damage and cannot get pinched when opening or closing the doors or access panels.
- Seal the cabinets from rain and cleaning solutions. Do not use a hose to wash the charger cabinet or pedestal.
- Protect the charger tower and pedestal with safety devices and measures specified by local codes and regulations.
- Verify and document that the power cable, wiring, conduit, and foundation structure, base plate and mounting hardware meet and are installed per local installation codes.

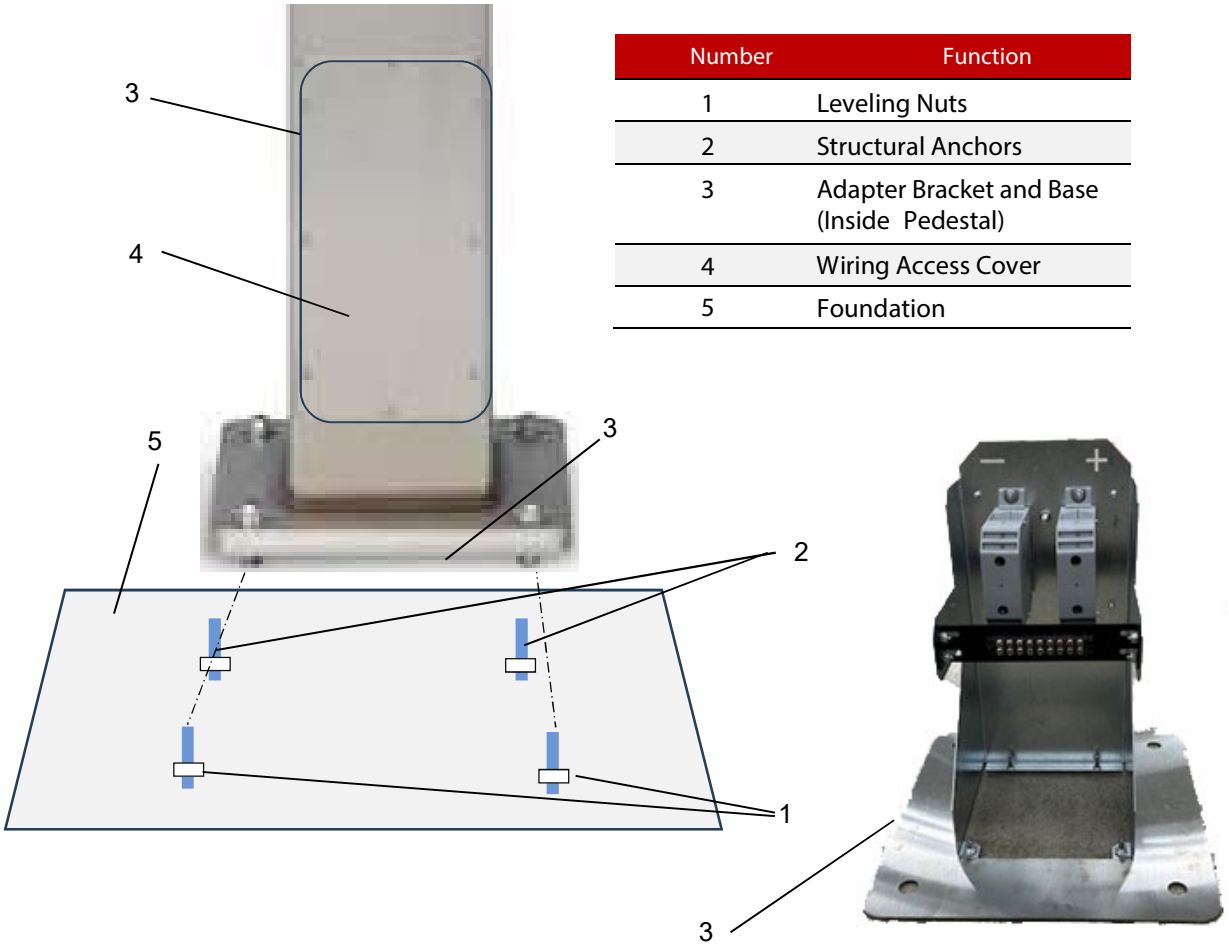
DANGER
Risk of Electric Shock

- Electricity can cause injury or death. Document and follow lockout and tagout procedures when working with live circuits to reduce the chance of injury or death.

Installing the Pedestal Bracket and Base to the Foundation

This section shows the steps for installing the pedestal to the foundation.

Pedestal, Adapter Bracket with Base and Mounting Hardware



Number	Function
1	Leveling Nuts
2	Structural Anchors
3	Adapter Bracket and Base (Inside Pedestal)
4	Wiring Access Cover
5	Foundation

Figure 19 Pedestal, Adapter Bracket and Base

Number	Function
1	Leveling Nut
2	Washers
3	Adapter Bracket
4	Securing Nut
5	Structural Anchor
6	Pedestal Base
7	Adapter Plate
8	Foundation

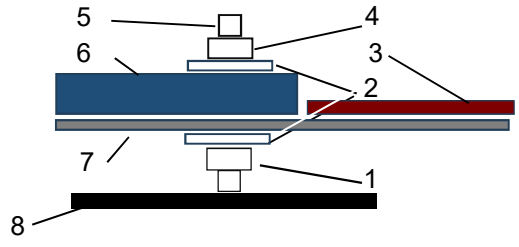


Figure 20 Mounting Hardware and Structural Anchor

Required Tools Not Supplied

- T27 Security Torx bit driver for the ¼-20.
- Mounting hardware for the pedestal.
- Construction level.
- Hoist cables or certified lift straps.
- Miscellaneous Hand tools.

Installing the Adapter Bracket and Base to the Foundation Procedure

1. Remove Wiring Access Cover.
2. Label and remove Pedestal wiring from Adapter Bracket inside Pedestal, remove Adapter Bracket and Adapter Bracket Base from Pedestal assembly as one piece.
3. Install Leveling Nut and one Washer leaving 0.5-in. (1.27mm) space to the foundation on each Structural Anchor.
4. Set the Adapter Bracket and Base onto the structural anchors until it sits flush on the washers.

Note: Do not put a washer and nut on the structural anchors above the Adapter Bracket and Base. The base of the pedestal mounts directly to the Adapter Bracket and Base.

Installing the connections from Charge Tower Procedure

Note: Verify the lockout/tagout procedure is followed so there is no power to the DC conductor cables and that the Charge Tower is not energized.

1. Cut the DC Power Conductors, Earth Ground and Communication Lines to length from the Charge Tower.
2. Attach the DC Power Conductors, Earth Ground and Communication Lines to the Pedestal Adapter Bracket terminals.

Note: The red conductor (DC+) attaches to the right terminal block. The white conductor (DC-) attaches to the left terminal block.

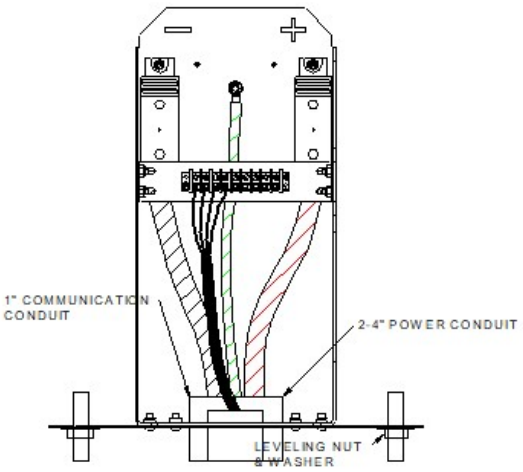


Figure 21 Connecting the DC Power Conductors and Earth Ground from Charge Tower

Number	Description
1	48V +
2	48V -
3	CAN HI
4	CAN Low
5	Shield Ground
6	Unused
7	Unused
8	Unused
9	Unused

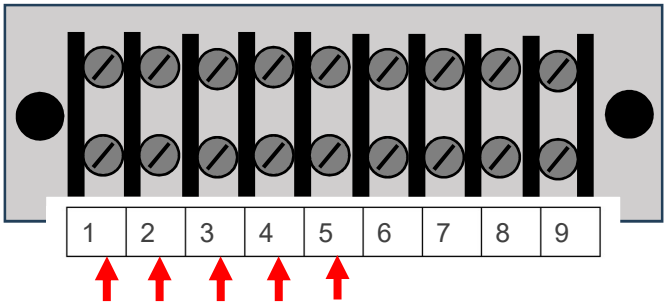


Figure 22 Connecting the Communication Lines from Charge Tower

Installing the Pedestal to the Foundation

WARNING

Risk of Pinching or Crushing

- Hoisting the pedestal shall be supervised by a structural engineer licensed in the local governing jurisdiction.
- Make sure that the hoisting equipment can lift the weight safely.
- Obey the safety instructions that apply to the hoisting equipment.
- Consider the dimensions, the mass, and the center of gravity of the charger.
- Do Not work under suspended loads. Two people may be required to reduce the chance of the load to swing.
- Only lift the pedestal using straps or cables through the lifting eye on top of the pedestal.
- Do not remove the lift cables until the Pedestal is secured to the Foundation.

Installing the Pedestal Procedure

1. Safely hoist, align and lower the Pedestal onto the four Structural Anchors on top of Adapter Bracket and Base.
2. Properly secure the Pedestal to the Structural Anchors with a Washer and Securing Nut.

Installing the connections from the Pedestal Procedure

1. Reinstall previously removed Pedestal wiring to the Pedestal Adapter Bracket terminals.
2. Reinstall Wiring Access Cover.

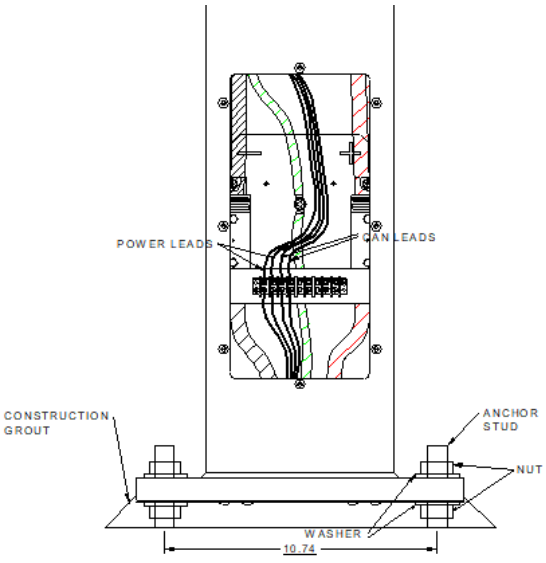


Figure 23 Connecting the DC Power Conductors and Earth Ground from Pedestal

Number	Description
10	48V +
11	48V -
12	CAN Low
13	CAN HI
14	Shield Ground
15	Unused
16	Unused
17	Unused
18	Unused

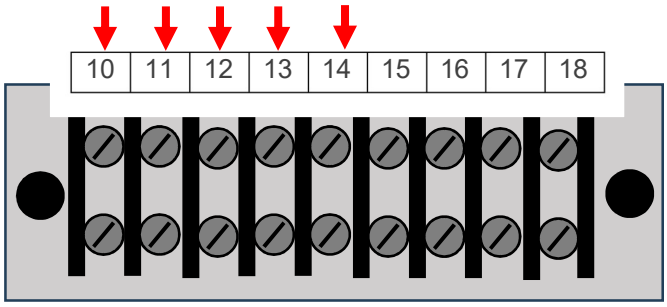


Figure 24 Connecting the Communication Lines from Pedestal

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Commissioning the Charger

Charger Commissioning

Only a charge-point operator (CPO), site operator, or owner is qualified to register and commission the charger.

1. Tell the owner that the charger is ready for commissioning.
2. Make sure that the following data is available.
   - Contact data of the contact person on site.
   - Address of the charge station.
   - Site name.
   - Charge dispenser name.
   - Date that the installation is completed.
   - Photo of the surroundings of the charge dispenser installation. For service:

Commissioning Procedure

1. Scan the QR code or navigate to the link www.getamop.com/activate to access the Billing Information form.

Record the Charging Station Serial Number from the pedestal. See

2. Figure 34 34 for the location and example of the serial number (3).
3. Complete the Commissioning Form.

Number	Function
1	Product Number
2	Code Number
3	Serial Number

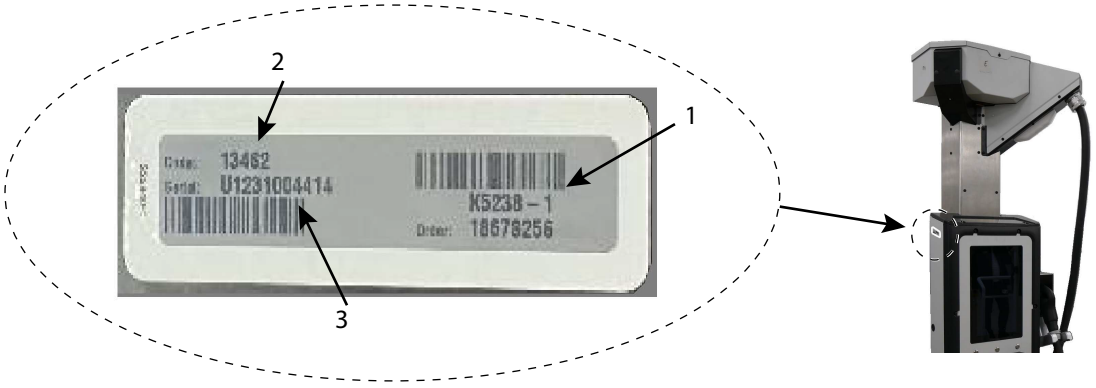


Figure 25 Charging Station Serial Number

Scan the QR Code

getamop URL

QR Code

Scanning the QR Code populates the form and turns on the SIM card.

Company Name

Customer Name

Customer Contact #

Billing Contact Name

Billing Contact #

Billing Email Address

Service Address

Charging Station Serial #

Rate Plan Choice

Please Select

Please Select

$40-2 GB Allotment – Overage Invoiced at $.01 per MB

$25-1 GB Allotment – Overage Invoiced at $.01 per MB

Figure 26 Billing Information Form

Once the Commissioning Form is Completed, the AMOP Client Success Team will send the following message to the customer:

Welcome to AMOP, your connectivity provider for all your IoT connections!

Thanks for submitting your information!

An AMOP representative will contact you to establish your billing account within 48 business hours. If you need immediate assistance, please contact us directly at activations@amop.services or call (877)-926-2589.

We look forward to serving you!

AMOP Client Success Team

Note: The end client will need to provide a signed agreement along with payment information through DocuSign. If all the information on the form is completed, then the contract can be sent without any other action from the end client. If we are missing information, then we will need to reach out to them directly to obtain any information needed prior to the contract being sent over.

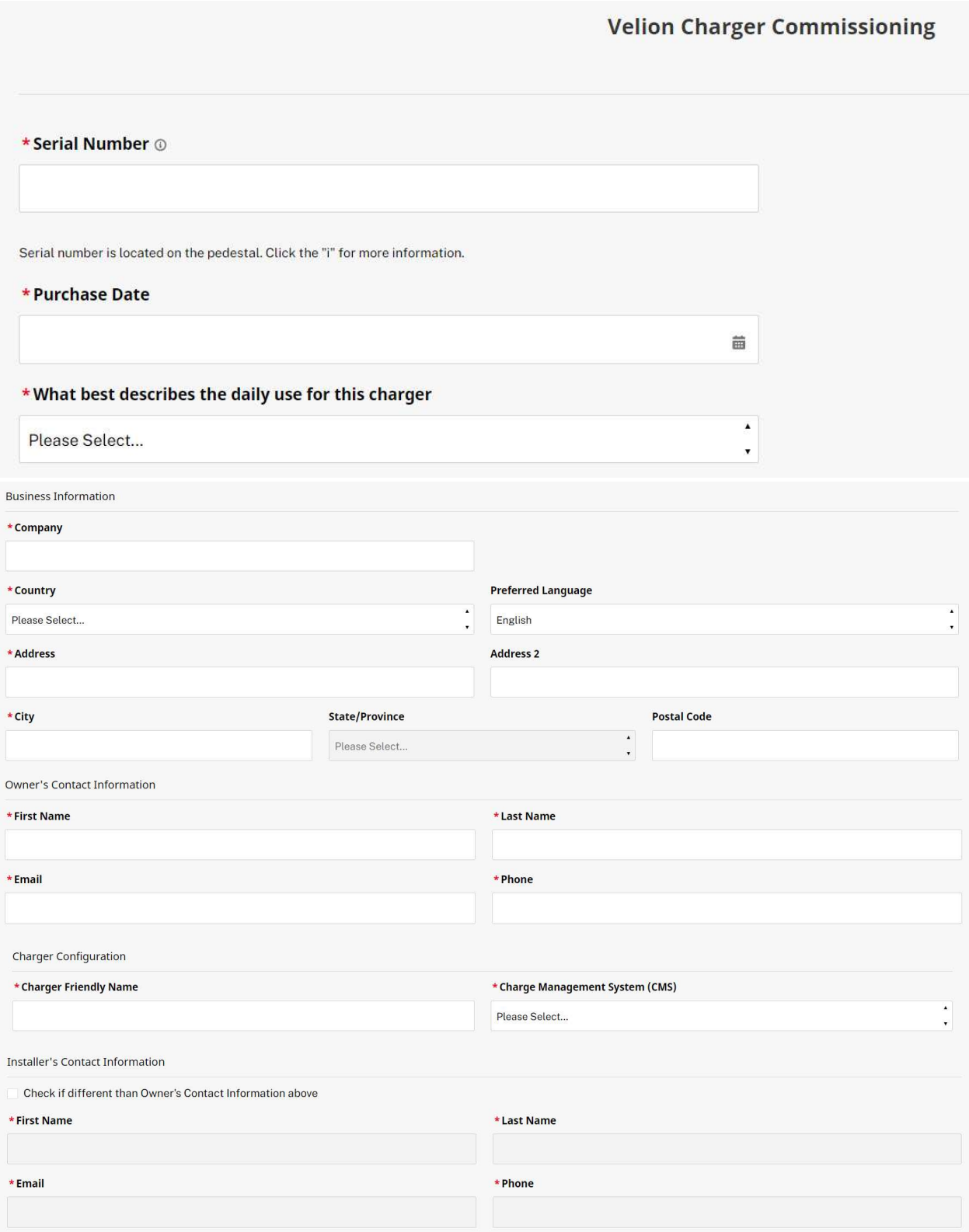
For service:

- scan the LECO Commissioning URL QR Code:

- Email: Velion service@lincolnelectric.com

Continue the commissioning procedure by filling out the following form:

Fill in the Commissioning and Registration Form



Velion Charger Commissioning

* Serial Number

Serial number is located on the pedestal. Click the "i" for more information.

* Purchase Date

* What best describes the daily use for this charger

Please Select...

Business Information

* Company

* Country

Please Select...

Preferred Language

English

* Address

Address 2

* City

State/Province

Please Select...

Postal Code

Owner's Contact Information

* First Name

* Last Name

* Email

* Phone

Charger Configuration

* Charger Friendly Name

* Charge Management System (CMS)

Please Select...

Installer's Contact Information

Check if different than Owner's Contact Information above

* First Name

* Last Name

* Email

* Phone

Continued

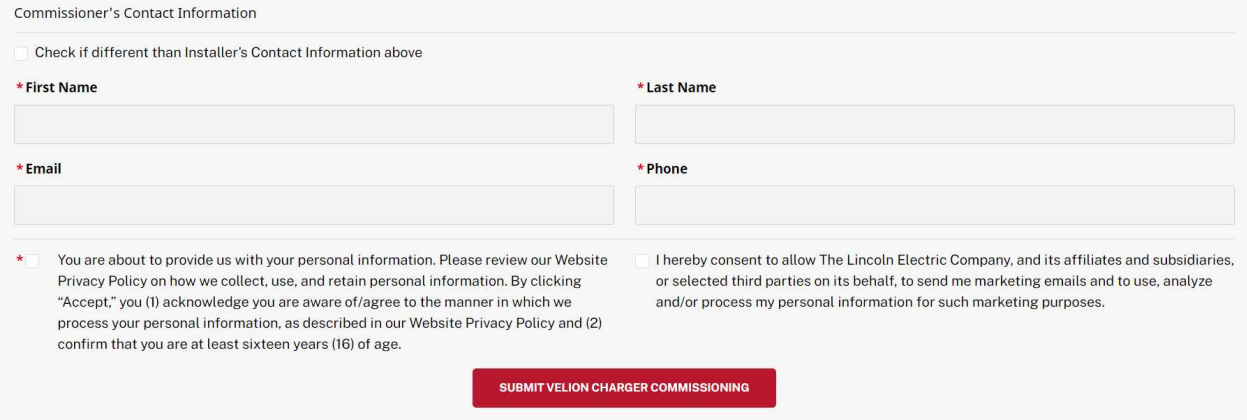


Figure 27 Commissioning the Charger

Using the Charger

Caution

General Risk

Make sure that you have approval of the manufacturer to use the charger after commissioning.

- After approval, do not move the charge dispenser.
- Make sure that the space around the charger cannot get blocked with snow, containers, or other objects. Refer to the floor space requirements parameters.
- Verify and document that the power cabinet doors are padlocked.
- Verify that an emergency plan that instructs people what to do in case of an emergency is posted and distributed. Verify that charge session Start and Stop Instructions are posted on the charger.

DANGER

Risk of Electric and Magnetic Fields (EMF)

- Peak charge current may affect the operation of some medical or implantable electronic devices, such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator. Check with your electronic device manufacturer concerning the effects that EV quick charging may have on such electronic devices before using the Velion DC Fast Charger. Consult with your doctor before powering up or operating the charger.
- Exposure to EMF fields may have other health effects which are now not known.
- These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

Charger User Interface

Indicator	Description
	Out of Order
	Charging
	Available/Idle

Figure 28 Charger Operation Indicator Light

Number	Part
1	Payment Terminal
2	Vehicle Charge Cable and Holder
3	Touchscreen
4	Manual Pushbuttons

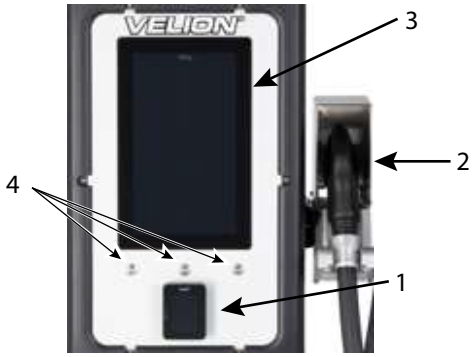


Figure 29 Charger User Interface

Power Outages

If there is a power outage while charging a vehicle, charging automatically resumes within 1 to 3 minutes after power restoration. The charger displays a solid blue light to indicate that it is communicating with the vehicle and waiting to resume charging. Pressing the button on the charger handle after power restoration causes the charger to resume charging immediately.

Starting a Charge Session

Note: Make sure that the charge cable connector can reach the vehicle connector.

1. Turn on the electric vehicle.
2. On the touchscreen, select the applicable connector button.

Note: If you skip this step, the charger selects the correct connector automatically when you connect the charge cable to the vehicle.

3. Remove the charge cable from the charger.
4. Connect the charge cable to the connector on the vehicle.
5. On the touchscreen, press the ***Start*** button.
6. Check the vehicle controls to verify charging.

Stopping a Charge Session

1. On the touchscreen, press the ***Stop*** button. When the battery is full, the charge session stops automatically.
2. If the touchscreen shows a message to authorize the charge session, do the instruction that the touchscreen shows.
3. Disconnect the charge cable from the vehicle.
4. Put the charge cable connector into the holder on the charger.

Note: In some cases, the vehicle locks the charge connector to the vehicle connector. To unlock the connector, follow the instructions for the vehicle.

Figure 30 Charger Handle Latch

Charging Display Screens

Pre-Charging Screens display when the charger is idle. The Home Screen displays when a user interfaces with the charger. Refer to the VELION™ EV Quick Charger Operation Manual for more information.

Tap or press the center button or tap anywhere on the screen to reach the Home Screen.

1. The Home screen displays the steps in the charging process describing the compatible connector type, accepted payment methods, and maximum charging speed.

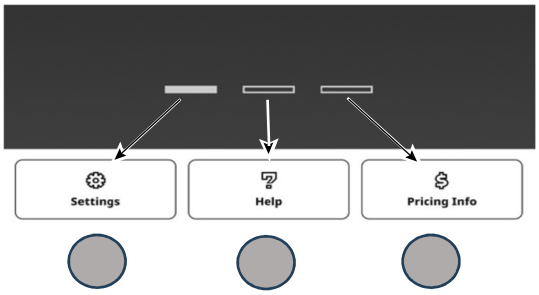


Figure 31 Operator Interface

2. Tap or press the left button to access the Settings Menu.
   Tap or press the center button to access the Help Menu.
   Tap or press the right button to access Pricing Information.
3. Each Settings option is shown in a list. Tap on individual options to access them or use the button.

Description of the Pedestal Buttons

The touch screen buttons duplicate the functions of the manual push buttons below the touch screen.

Settings: To change languages, press the left button for Settings.

Help: Press the Help button for the Help home screen. Each Help topic is listed. Tap on an item to view.

Pricing information: displays all costs of the charging session (e.g. session costs, charging costs, idle fees), accepted payment methods, and any additional information relevant to pricing.

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Preventive Maintenance

DANGER
Risk of Electric Shock

Electricity can cause injury or death. Document and follow lockout and tagout procedures when working with live circuits to reduce the chance of injury or death.

- A qualified installation engineer, certified for local and state regulations is required for all electrical connections.
- Make sure that the connections to the charging system comply with all applicable local regulations.
- Use inspected voltage and current meters as intended by the manufacturer.
- Wear safety shoes, protective clothing, glasses, gloves that have been inspected. Wear hearing protection as needed. Refer to the Personal Protection Equipment section.
- Keep all equipment safety guards, covers and devices in position and in good repair. During maintenance, remove guards only when necessary and replace them when the maintenance is complete.
- Install equipment in accordance with the U.S. National Electrical Code, all local codes, and the manufacturer's recommendations.
- Ground the equipment in accordance with the U.S. National Electrical Code and the manufacturer's recommendations.

DANGER
Arc Flash Hazard

An arc flash can cause serious injury or death. Follow lockout-tagout procedures to reduce the chance of injury or death.

WARNING
EMF Field Present
A strong EMF (electromotive force) field is present when quick charging. Some implanted medical devices may be affected.

Recommended Preventive Maintenance

Contact Lincoln Electric to report equipment concerns. Email: Velion service@lincoln.com or call EV Charger Support at Lincoln Electric at phone number (888-935-3877).

- Inspect the charger plug handle latch for effective operation. The latch must lock the charger handle to the vehicle connector.
- Inspect and replace cabinet cooling air filters as needed.
- Inspect all charger tower cabinet door safety switches to insure proper operation.
- Inspect charger tower cabinet current sensing device and ensure integrity.
- Inspect pedestal DC supply connections and conduit condition inside the installation cover.
- Check the bolted charging cable connections in the pedestal top to ensure connections are tight.
- Inspect the pedestal screen for damage and ensure proper operation.
- Inspect the payment terminal and terminal screen for damage.
- Inspect charging cables and cable charge handle for wear and damage.
- Complete a charge session to verify proper charger operation.
- Inspect each surrounding concrete pad to ensure safe conditions.

Note: Make sure that the space around the charger cannot get blocked. Think of snow or containers.

If the charger is de-energized for more than two hours, activate the internal heater to remove condensation from the cabinet.

Cleaning the Pedestal

The manufacturer recommends following a daily procedure to wipe down the screen and buttons on the pedestal, and thoroughly clean the charge cable, connector, and holster. Do not spray the pedestal or charge cable with a hose. Use a mild soap and water solution.

The manufacturer recommends inspecting the entire pedestal weekly for damage. Inspect the pedestal charge cable, connector, latch, and holster for wear and damage. Make sure that the space around the charger cannot get blocked by snow or containers.

Figure 32 Pedestal Sanitizing Locations

Table 9 Preventive Maintenance Schedule

Frequency	Task	Related Information
6 Months	Replace the charger tower cabinet filters. Replace more often in dirty environments.	https://www.lincolnelectric.com/en/Service-Navigator
6 Months	1. Inspect the entire charger tower cabinet and pedestal for damage. 2. Inspect the charge cable, connector, latch, and holster for wear and damage.	Schedule service or replacement with the service provider.
2 Years	Inspect and replace damaged or leaking charger tower cabinet door seals and the seal for the pedestal operator interface.	Replace cabinet door seals with original equipment Part Number.

Inspecting the Pedestal Cable Connector Latch

1. Test the charger cable connector latch for secure operation to reduce the chance of injury.
2. Inspect the charge cable, connector, latch, and holster for wear and damage.
3. Test the connector latch for secure operation. The latch must lock the charger connector to the vehicle charge port. Accidental separation of the cable connector from the vehicle charge port may cause an arc flash.

Notify the service provider immediately of damage causing safety risks or interfering with operation.

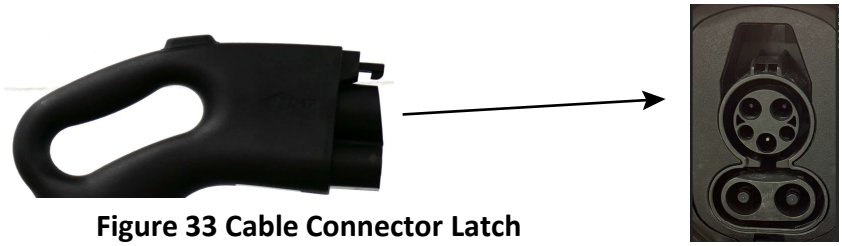

Figure 33 Cable Connector Latch

Replacing the Cabinet Air Filters

The following steps replace the filter material in the front and rear doors of the charger tower cabinet. Use proper personal protection equipment to protect you from the dust and particulates in the used filters.

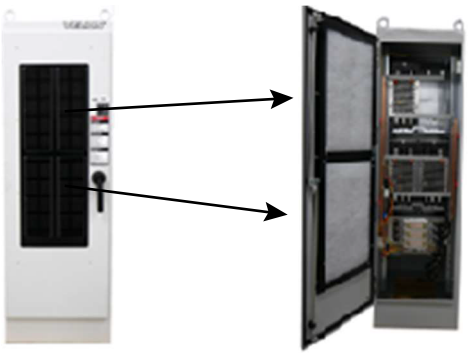

Figure 34 Cabinet Air Filter Location

DANGER Risk of Electric Shock
Electricity can cause injury or death. Document and follow lockout and tagout procedures when working with live circuits to reduce the chance of injury or death.

WARNING

Personal Injury Hazard

- Dispose of filters and consumable products according to local waste and recycling regulations.
- If safety devices are removed, immediately install the safety devices before power is applied.
- Personal protective equipment required by local codes including safety shoes, hard hat, safety glasses, and gloves are worn. Refer to the Personal Protection Equipment section.

Replacing the Cabinet Front and Back Door Filters

1. Release the 2 latches at the lower corners of the upper filter assembly.
2. Remove the upper filter assembly
   a. Slide the filter housing straight up until it is free from the top of the filter frame.
   b. Pull the entire filter assembly out of the door.
3. Remove the filter from the upper filter where there is proper ventilation.
4. Slide filter out of lower filter housing.

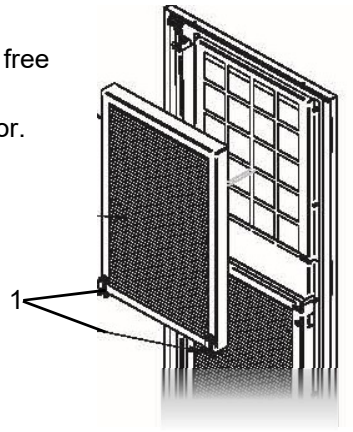

Figure 35 Replacing the Cabinet Door Upper Air Filter

Replacing the Pedestal User Interface Seals

1. Remove the 6 T30 Torx screws attaching the operator interface panel bezel.
2. Remove the operator interface panel bezel
3. Remove the 4 T30 Torx screws sealing the operator interface panel.
4. Completely remove the old seal and all old adhesive residue.
5. Use a non-reactive solvent to clean and prepare the surface where the new seal will be placed.

Note: Follow the manufacturers suggestions for temperature and environmental factors and removing solvent residue.

6. Carefully apply the seal in the same place as the old seal.
7. Press and hold the seal to ensure complete adhesion.
8. Apply a flexible environmental sealant at the corners where the cut ends of the seal touch.
9. Wait the manufacturer's recommended drying time to allow the adhesive to set before closing the cover.
10. Replace the 4 T30 Torx screws sealing the operator interface panel.
11. Replace the 6 T30 Torx screws attaching the operator interface panel bezel.

Figure 36 Replacing User Interface Seals

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