

Watt Point™

By Control Module Inc, EVSE LLC

State of the Art EVSE with Cable Management

Overhead Electric Vehicle Supply Equipment / 30A

Model 3722-001



User Manual and Installation Guide

Model 3722-001

Overhead EVSE / 30A

Patents Pending

3722-IG-001 Rev J

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Important Notes

Safety and Compliance

This document provides instructions for installing the Watt Point™ Charging Station Model 3722 Series. Before installation of the Watt Point Charging Station by licensed professionals, you should review this manual carefully and consult with a licensed contractor, licensed electrician and trained installation expert to ensure compliance with local building practices, climate conditions, safety standards, and state and local codes.

The Watt Point Charging Station should be inspected by a qualified installer prior to initial use. Under no circumstances will compliance with the information in this manual relieve the user of responsibility to comply with all applicable codes or safety standards. This document describes the most commonly-used installation and mounting scenarios. If situations arise in which it is not possible to perform an installation following the procedures provided in this document, contact Control Module Inc., EVSE LLC. Control Module Inc., EVSE LLC, is not responsible for any damages that may occur resulting from custom installations that are not described in this document.

Warranty Information and Disclaimer

Your use of, or modification to, the Watt Point Charging Station in a manner in which the Watt Point Charging Station is not intended to be used or modified will void the limited warranty. Other than any such limited warranty, the Control Module Inc., EVSE LLC products are provided “AS IS,” and Control Module Inc., EVSE LLC and its distributors expressly disclaim all implied warranties, including any warranty of design, merchantability, fitness for particular purposes and non-infringement, to the maximum extent permitted by law.

Limitation of Liability

IN NO EVENT SHALL CONTROL MODULE INC., EVSE LLC, OR ITS AUTHORIZED DISTRIBUTORS BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST PROFITS, LOST DATA, LOSS OF USE, COST OF COVER, OR LOSS OR DAMAGE TO THE WATT POINT CHARGING STATION, ARISING OUT OF OR RELATING TO THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CONTROL MODULE INC., EVSE LLC, OR ITS AUTHORIZED DISTRIBUTORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

FCC Compliance Statement

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

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

Important

Changes or modifications to this product not authorized by Control Module Inc., EVSE LLC, could affect the EMC compliance and revoke your authority to operate this product.

Exposure to Radio Frequency Energy

The radiated power output of the ZigBee® radio (optional) in this device is below the FCC radio frequency exposure limits for uncontrolled equipment. This device should be operated with a minimum distance of at least 7.9 inches (20 cm) between the ZigBee antenna and a person's body and must not be co-located with any other antenna or transmitter by the manufacturer, subject to the conditions of the FCC Grant.

No Accuracy Guarantee

Reasonable effort was made to ensure that the specifications and other information contained in this manual are accurate and complete at the time of publication. The specifications and other information in this manual, however, are subject to change at any time and without prior notice.

Copyright and Trademarks

Copyright 2012-2015 Control Module Inc., EVSE LLC. All rights reserved. This material is protected by the copyright laws of the United States and other countries. It may not be modified, reproduced or distributed without the prior, express written consent of Control Module Inc., EVSE LLC.

Watt Point is a U.S. registered trademark and service mark of Control Module Inc, EVSE LLC. All other products or services mentioned have the trademarks, service marks, registered trademarks or registered service marks of their respective owners. Control Module Inc., EVSE LLC, has filed several patent applications.

ZigBee is a registered trademark of the ZigBee Alliance.

Instructions Pertaining To Risk of Fire or Electrical Shock

The following is a summary of safety concerns relevant to the installation and use of the Model 3722-001 EVSE Unit. Failure to follow these safety instructions may lead to serious injury, death and/or damage to the equipment.

As a matter of definition:



WARNING: is used to provide a warning of hazardous voltage and possibility of electric shock.



CAUTION: is used to provide awareness of important safety information in these instructions.

IMPORTANT SAFETY INSTRUCTIONS



WARNING: Only qualified personnel should perform the installation. This installation must be performed in accordance with all local electrical/building codes and ordinances. Follow lockout/tagout procedures.

Improper connection of the equipment grounding conductor may result in a risk of electric shock. Reference National Electrical Code, ANSI/NFPA 70 for proper sizing of the ground conductor.

Do not use this product if the flexible power cord or EV cable are frayed, have broken insulation, or show any signs of damage.



CAUTION: This device is intended to be used to charge vehicles that do not require ventilation during charging.

To reduce the risk of fire, connect only to a dedicated circuit with 40A maximum branch circuit over-current protection in accordance with the National Electrical Code, ANSI/NFPA 70.

(For ZigBee equipped units)

To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended. The antenna used for this transmitter must not be co-located in conjunction with any other antenna or transmitter.

Additional considerations which will contribute to safe operation of this unit include the following:

- DO:**
- Read all instructions before using this product.
 - The device should be supervised when used around children.
 - In case of a problem, contact your installer or CMI Customer Support.
- DON'T:**
- Put fingers into the electric vehicle connector.
 - Use this product if the enclosure or the EV connectors are broken, cracked, open or show any other indication of damage.
 - Attempt to repair or service the unit yourself.

SAVE THESE INSTRUCTIONS

Instructions De Sécurité Importantes



AVERTISSEMENT: sert à fournir une alerte de tensions dangereuses et possibilité de choc électrique.



ATTENTION : est utilisé pour fournir la sensibilisation des renseignements importants dans ces instructions.

INSTRUCTIONS DE SÉCURITÉ IMPORTANTES



AVERTISSEMENT: Seul le personnel qualifié doit effectuer l'installation. Cette installation doit être effectuée conformément à tous les codes électrique/bâtiment locaux et ordonnances. Suivre les procédures de verrouillage/verrouillage.

Connexion inadéquate de l'équipement échouement du chef d'orchestre peut entraîner un risque de choc électrique. Code National de l'électricité, ANSI/NFPA 70 pour le dimensionnement bon chef d'orchestre au sol de référence.

Ne pas utiliser ce produit si le code de la puissance souple ou l'EV sont effiloché de câble, ont brisé isolant ou présentent pas de signes de dommages.



ATTENTION: Ce dispositif est destiné à être utilisé pour charger les véhicules qui ne nécessitent pas de ventilation pendant la recharge.

Afin de réduire le risque d'incendie, se connecter uniquement à un circuit dédié avec 40 a maximum des branches circuit over-current protection conformément aux dispositions du Code électrique National, ANSI/NFPA 70.

(Pour les unités de ZigBee équipé)

Pour satisfaire les exigences de l'exposition du FCC RF pour des périphériques mobiles de transmission, une distance de séparation de 20 cm ou plus devrait être maintenue entre l'antenne de ce dispositif et de personnes au cours de l'opération de l'appareil. Afin d'assurer la conformité des opérations au plus près que cette distance n'est pas recommandée. L'antenne utilisée pour cet émetteur ne doit pas être colocalisé conjointement avec une autre antenne ou éme.

Voici d'autres considérations qui contribueront à la sécurité de fonctionnement de cette unité:

- DO:**
- Lire toutes les instructions avant d'utiliser ce produit.
 - Le dispositif devrait être supervisé lorsqu'il est utilisé autour des enfants.
 - En cas de problème, contactez votre installateur ou soutien à la clientèle CMI.
- NE PAS:**
- Mettre les doigts dans le connecteur de véhicule électrique.
 - Utiliser ce produit si l'enceinte ou les connecteurs EV sont cassées, fissuré, ouvrir ou afficher toute autre indication de dommages.
 - Tenter de réparer ou d'un service de l'unité de vous-même.

ENREGISTREZ CES INSTRUCTIONS

Introduction to Model 3722-001 EVSE Unit

The Model 3722 Watt Point™ Electric Vehicle Supply Equipment (EVSE) is a ceiling-mounted EVSE with motorized cable management. This unit complies with the SAE J1772 specifications for supplying electrical power to a J1772 compatible Electric Vehicle (EV). The Model 3722 stores the power cable safely out of reach and off the ground, eliminating a tripping hazard and tampering. When the Model 3722 is activated by using the Control Module, the cable and connector will be lowered to a position where it can be easily reached and extended to the Electric Vehicle power inlet.

The Model 3722 is comprised of two units. The main assembly is the Electric Vehicle Supply Equipment (EVSE) with a motorized cable controller, and the Control Module, which is used to activate the EVSE (turning it on or off). There are a number of Control Modules that are compatible with the Model 3722, ranging from a simple on/off switch to RFID card reader. The Control Module you selected is included with the shipment of the EVSE unit.

Specifications

Product Code

Product Code Model 3722-001 is an assembled unit with a detached Control Module

Electrical*

Voltage 208-240 VAC, single phase
 Current (Rated) 30A/16A Switchable by Dip Settings
 Current (Simulated Level 1) 7A@208-240 VAC (On Command)
 Connections Line 1 and 2, Ground
 Required Service (Panel Breaker) 2 pole 40 breaker **Non-GFCI** on a dedicated circuit/20A Switchable by Dip Settings
 Stand By Power Less than 8W typical (without communication operating)

Safety Features

Over Current Disconnect 32A/18A Switchable by Dip Settings
 Surge Protection 6KV @ 3000A
 Ground Fault Internal 20 MA CCID with auto re-closure (three attempts)

Compliance

Safety IEC/UL/CSA C22.2 61010-1, UL2594, UL2231-1, UL2231-2, NEC Article 625, SAE J1772
 EMC FCC Part 15 Class B, Canadian ICES-003

Environmental

Operating Temperature -22° to 122° F (-30° C to 50° C) ambient
 Operating Humidity Up to 95% non-condensing
 NEMA Rating NEMA 3R (allow 3 feet of ceiling surface on all sides of unit – See Page 12)

Accessories

Control Module Model 3740 series or Model 3729 Status Indicator (one required)
 Communications Module (ZigBee) Model 3727 – Contains FCC ID: MCQ-PROS2B, IC: 1846A-PROS2B (optional)
 Remote Control FOB Model 3790 - FCC ID: K4E919TD1S FOB Transmitter (optional)

General

Weight 45 lbs (20 Kg)
 Size 9 in x 7 in x 94 in (22.86 x 17.78 x 238.76 cm)
 Mounting Ceiling

* Observe all required Lockout/Tagout procedures while making any electrical connections, or servicing the unit.

Product Description

The Model 3722-001 (**Figure 1**) is a single EVSE unit designed to be mounted to a garage ceiling in a horizontal position. Conduit carries power lines back to its own breaker in the electrical service panel. Separate conduit is used for the Control Module.

The EVSE is equipped with a J1772 power cable, power controller, safety circuit and cable management motor assembly, all housed in weather protected enclosures.

The EVSE utilizes a detached Control Module that is assembled at the factory but is packaged separately for installation on a conveniently located vertical wall. There are a number of Control Modules to choose from. Refer to the Control Module Section of this manual for further explanation of the modules compatible with the EVSE. Also, if the Control Module requirements change after the Model 3722-001 has been installed, a new module can be easily installed in the field without the need of special tools.

The Model 3722-001 is shipped as a complete unit requiring a local electrician to mount the unit and Control Module, install conduit and make final wiring connections for power and Control Module.

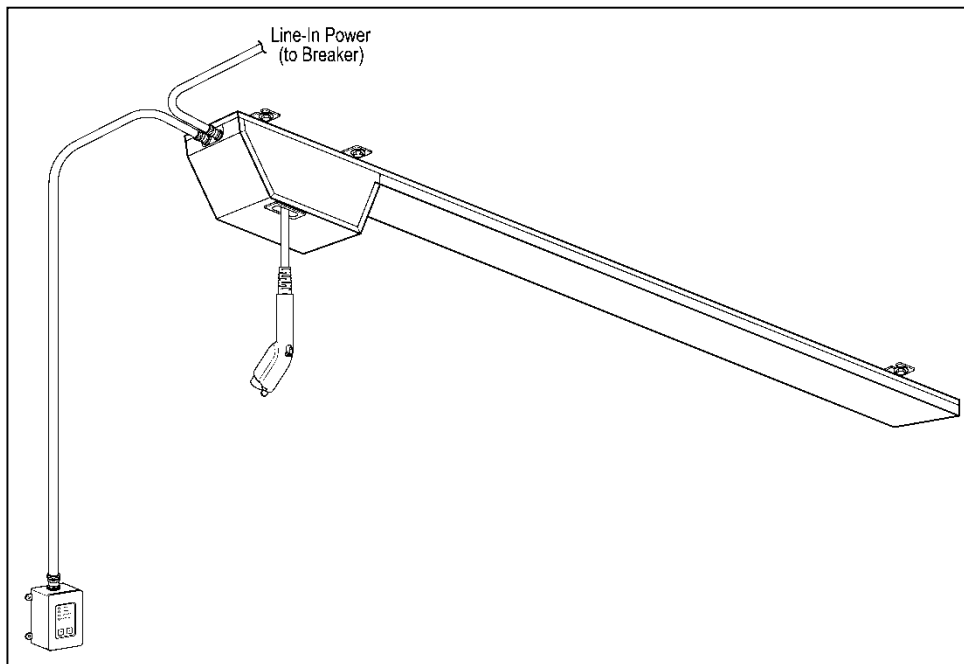


Figure 1

Safety Features

- Tamper Proof** - The J1772 power cord and connector are locked mechanically in the storage position.
- Extension** - The cable is free to be extended while it is automatically lowering to the ADA position without damage to the mechanical system.
- Jam Proof** - When the cable is automatically returning, and it is halted before it reaches its storage position and the drive system will stop. As soon as the stoppage is removed, the cable will continue to retract. If the stoppage is not removed before one minute, the red **Problem** LED will be lit.
- Spark Proof** - Electrical power is not applied to the power connector until the J1772 connector is fully inserted into the power inlet on the Electric Vehicle and communication has been established. When the mechanical release switch is pressed on the power connector, voltage on the power connector is removed.
- Shock Proof** - The Model 3722-001 EVSE is equipped with a Ground Fault Circuit Interrupter (GFCI) which will disconnect the electrical voltage from the power cord and connector, should current leakage to ground exceed 20 MA. The GFCI circuit is automatically tested at the start of each charge sequence. The GFCI will attempt three re-closures to see the ground fault cleared before reporting a problem.
- Over Current** - The Model 3722-001 EVSE, when in use, continuously monitors the current being delivered to the EV. Should the current exceed 80% of the max current rating of the service panel breaker for 15 seconds, the Model 3722-001 EVSE will disconnect the power to the EV before the breaker trips.
- Low-Line** - The source voltage to the Model 3722-001 EVSE is continuously monitored while in use. Should the voltage drop below 180 VAC, the EVSE will disconnect the voltage from the EV to prevent damage to the EV's electronic circuits. When the voltage returns to above 200 VAC, the power will be restored to the EV.
- Cold Load Start** – If power fails while the Model 3722-001 EVSE is connected and charging an EV, charging will automatically resume when power is restored. No user intervention is required. The charging will however, be randomly delayed from 0 to 18 minutes to prevent the power grid from incurring a large power surge.

Installation

Site Selection

The Model 3722 was designed to be mounted at ceiling heights of 7-10 feet above the floor (**Figure 2**) and should be positioned, if possible, so that when the J1772 power connector is lowered it will be close to the power inlet on the electric vehicle. This location is recommended because the cable, when extended, will cover a 24 ft. diameter circle (**Figure 3**). It is also recommended that the cable lowers between vehicles to make it easier to access the power inlet and prevent the power connector from hitting the vehicle(s).

The Model 3722 is provided with two 3/4" knockouts on the back side of the service area, so that the unit can be mounted to the ceiling in an appropriate direction.

The Control Module should be located close to the Electric Vehicle, within a 14' cable length from the EVSE (**Figure 7**) and 4 feet above the floor.

It is mandatory that the unit be mounted on the ceiling with a minimum of 3 feet of continuous ceiling surface on all sides of the EVSE as measured to any edge. This would include seams in a parking garage which could allow draining water from higher levels to flow into the area of the EVSE. This precaution is intended to prevent the unit from being mounted near a ceiling edge exposed to a stream of draining rain water which could flow or be wind-driven around the edge and into the head of the unit.

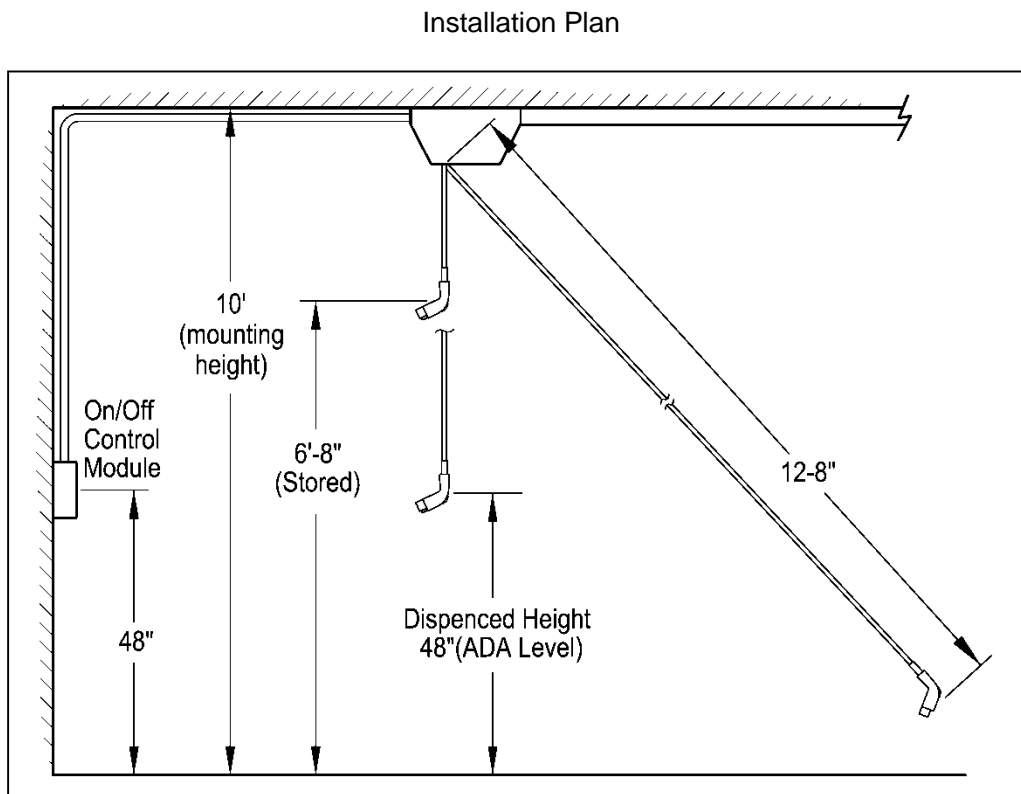


Figure 2

Installation Plan Side, Front and Top Views

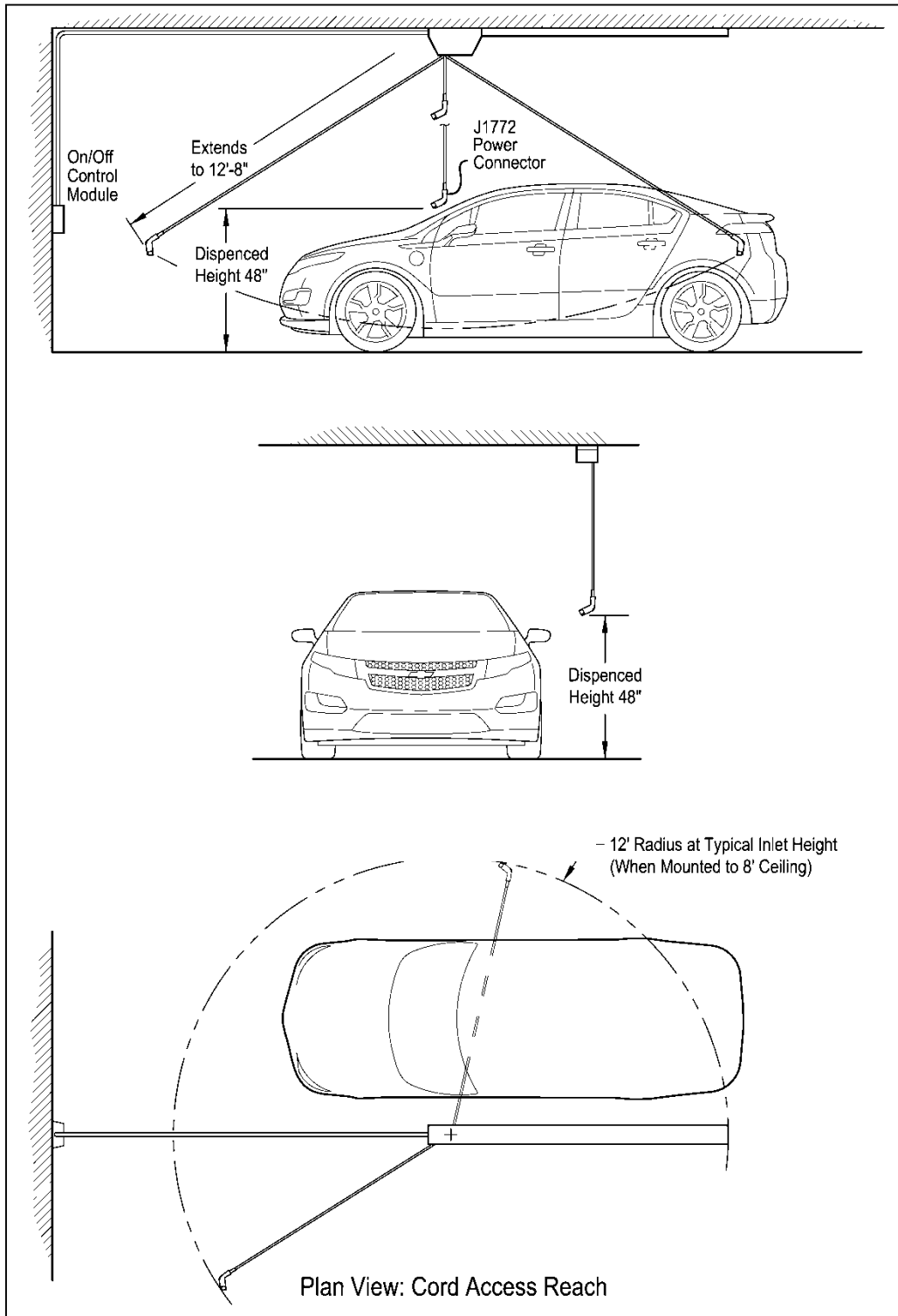


Figure 3

2010 ADA Standards for Accessible Design

According to the 2010 Americans With Disabilities Standards for Accessible Design, “Each facility or part of a facility constructed by, on behalf of, or for the use of a public entity shall be designed and constructed in such manner that the facility or part of the facility is readily accessible to and usable by individuals with disabilities, if the construction was commenced after January 26, 1992.”

While installers should be knowledgeable about all aspects of the requirement, several critical paragraphs and illustrative figures (Fig. 3A-3E) are referenced below to assist with locating the EVSE to meet reach and obstruction requirements of the Act. When properly located relative to the curb, the Model 3704 is compliant with all aspects of the following ADA paragraphs.

303.2 Changes in Level – Vertical

Changes in level of $\frac{1}{4}$ inch (6.4 mm) high maximum shall be permitted to the vertical.

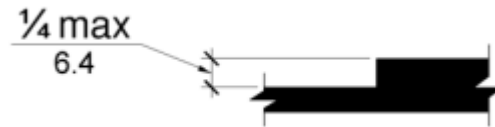


Figure 3A

308.2.1 Forward Reach – Unobstructed

Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and low forward reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

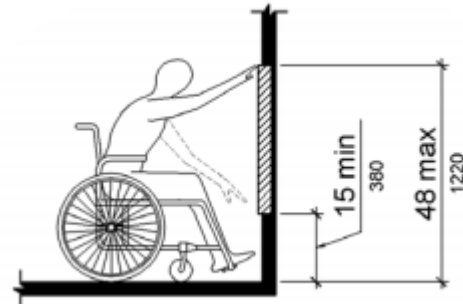


Figure 3B

308.2.2 Forward Reach – Obstructed High Reach

Where a high forward reach is over an obstruction, the clear floor space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches (1220 mm) maximum where the reach depth is 20 inches (510 mm). Where the reach depth exceeds 20 inches (510 mm), the high forward reach shall be 44 inches (1120 mm) maximum and the reach depth shall be 25 inches (635 mm) maximum.

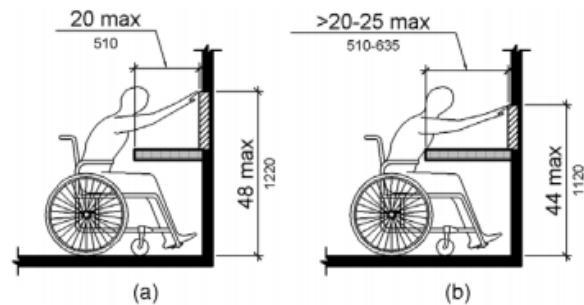


Figure 3C

308.3.1 Side Reach – Unobstructed

Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches (1220 mm) maximum and the low side reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

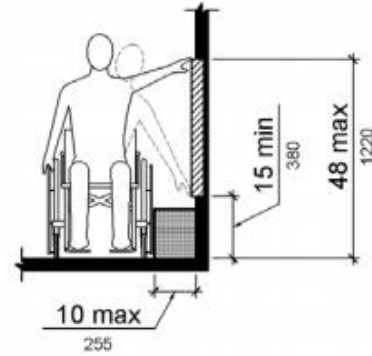


Figure 3D

308.3.2 Side Reach – Obstructed High Reach

Where a clear floor or ground space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches (865 mm) maximum and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum for a reach depth of 10 inches (255 mm) maximum. Where the reach depth exceeds 10 inches (255 mm), the high side reach shall be 46 inches (1170 mm) maximum for a reach depth of 24 inches (610 mm) maximum.

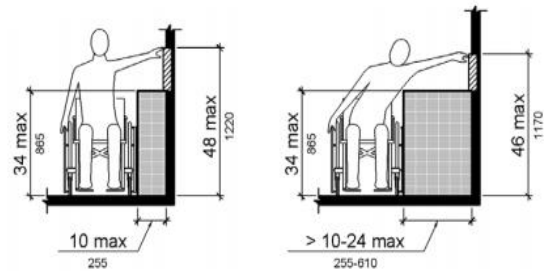


Figure 3E

309 Operable Parts

309.1 General – Operable parts shall comply with 309.

309.2 Clear Floor Space – A clear floor space or ground space complying with 305 shall be provided.

309.3 Height – Operable parts shall be placed within one or more of the reach ranges specified in 308.

309.4 Operation – Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds maximum.

Unpacking the Model 3722-001

1. Place the shipping carton on a flat, level surface with the top facing upwards.
2. Carefully cut open the shipping carton using a sharp knife or box cutter. Use care not to damage the contents by inserting the blade too far into the carton.

Unpacking the EVSE

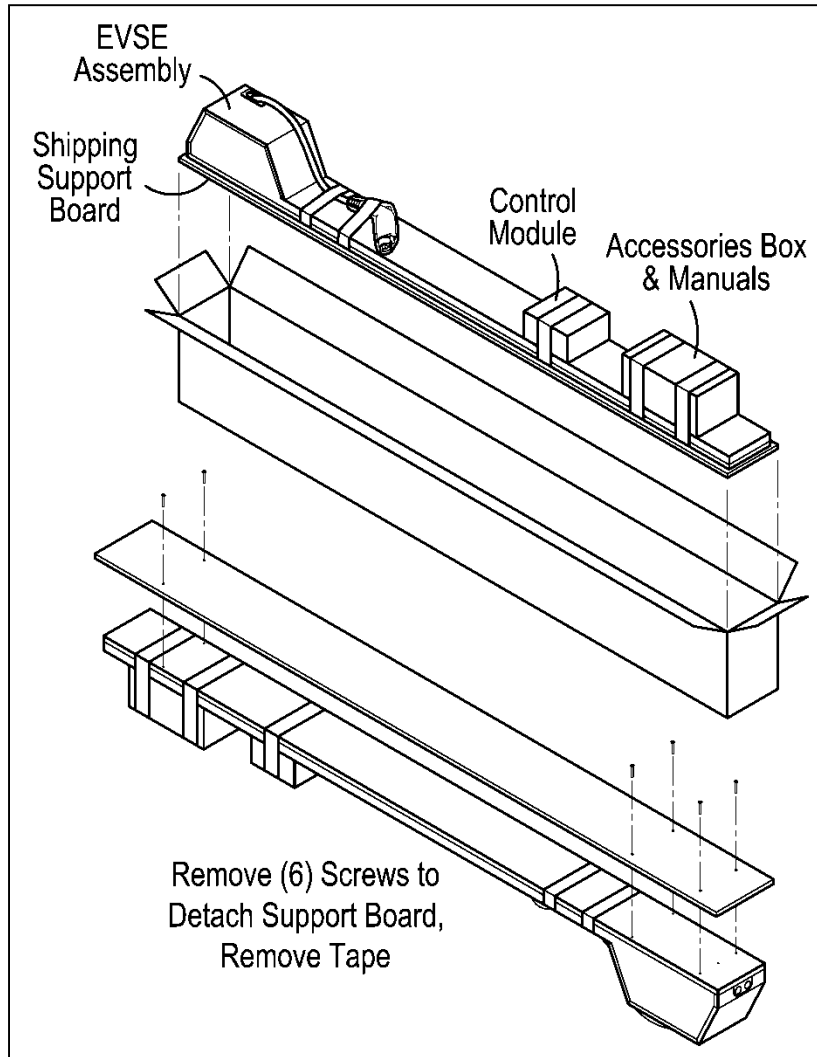


Figure 4

3. Place the EVSE Unit on a suitably padded surface in an upside down position (**Figure 4**).
4. Remove the six screws used to secure the support board to the EVSE Assembly.
5. Remove the tape securing the EVSE Assembly cable, Control Module, and the box containing the Accessories. Set aside.
6. Open the Accessory box and ensure the contents are as follows:

Item	Part Number	Qty.
Slotted Mounting Bracket	J7858-1	2
Mounting Bracket	J7860-1	1
Flat Head Screws #10-32 x 1/2" SS	C003-456	7

Recommended Mounting Method

Refer to the following table for a list of parts needed for installation that are *not* supplied as part of the EVSE Unit. These parts may be purchased at any reputable building supply store. Ensure that all parts meet or exceed local building codes for quality.

Item	Qty.
Unistrut	Minimum of 42 inches is required (3 sections, 14 inches long)
Simpson strong tie p/n DIA 375 or equivalent	6 min. or as required for use in concrete
3/8 x 1" stainless bolts	6
3/8 in. galv flat washers	6
3/8 in. galv lock washer	6
3/8 spring nuts	6
3/4 in. electrical conduit	As required
Brackets and hardware to secure the conduit	As required
Wire (minimum wire size is #8, copper. Increase size for long runs. Use 75°C wire)	As required

Installing the Mounting Brackets to the EVSE

1. Place the EVSE Unit on a suitably padded surface in an upside down position.
2. From the Accessory box select the Slotted Mounting Brackets (2), Non-slotted Mounting Bracket (1), and Flat Head Screws (7).
3. Install the Slotted Mounting Brackets at both ends of the EVSE Unit and the Non-slotted Mounting Bracket between them using the Flat Head Screws as shown in **Figure 5**. Note the direction of the open ends of the Slotted Mounting Brackets and the location of the Slotted Mounting Bracket with three (3) mounting holes.

Installing the Unistruts and Mechanical Installation:

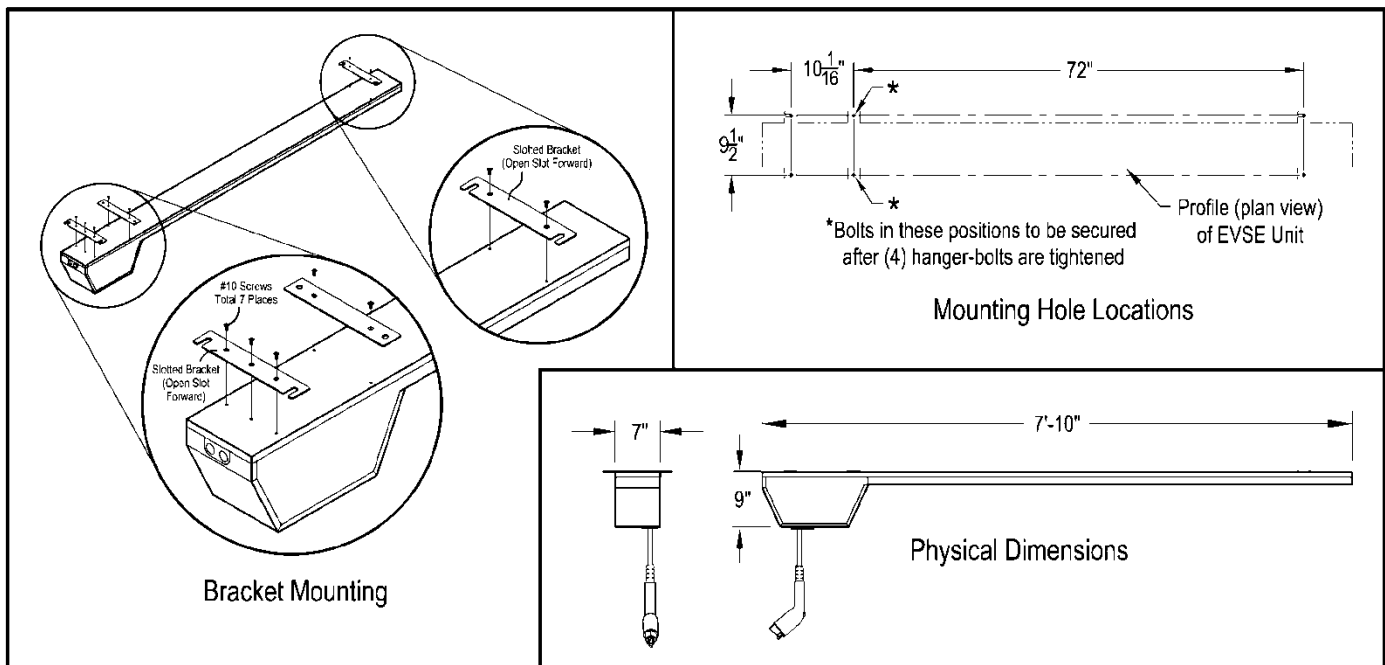


Figure 5

Mounting the Unistruts to the Ceiling

The Unistruts used in this installation are not supplied in the kit. They can be purchased at any reputable building supply source. A minimum length of 42 inches is required. (3 sections, 14 inches long)



CAUTION:

The mounting of the three (3) Unistrut sections must be secured to a solid structure (such as the ceiling joists) using appropriate fasteners. Do not use hollow wall anchors. The EVSE unit weighs 45 lbs. (plus the Unistruts and attaching hardware). Serious injury or death can result if the EVSE unit falls onto personnel during installation or operation.



ATTENTION:

Le montage des 3 trois Unistrut sections doit être sécurisé une structure solide (comme les solives de plafond) à l'aide de fixations appropriées. N'utilisez pas les ancras de mur creux. L'unité EVSE pèse 45 lbs (ainsi que le Unistruts et y attacher le matériel). Des blessures graves ou décès peut se produire si l'unité EVSE tombe sur le personnel pendant l'installation ou de la conduite.

1. If necessary, cut the Unistrut material into three (3) 14 inch sections, or as required per installation.
2. Layout an appropriate hole pattern on the ceiling according to the dimensions in **Figure 6**. Drill pilot holes if necessary.
3. Secure the three Unistrut sections to the ceiling using appropriate hardware (not included). The recommended concrete fastener is a Simpson strong tie p/n DIA 375 or equivalent. Note the minimum holding force required is 500 lb. per fastener and two (2) fasteners per 14 in. section are required.

Mechanical Installation of EVSE Unit

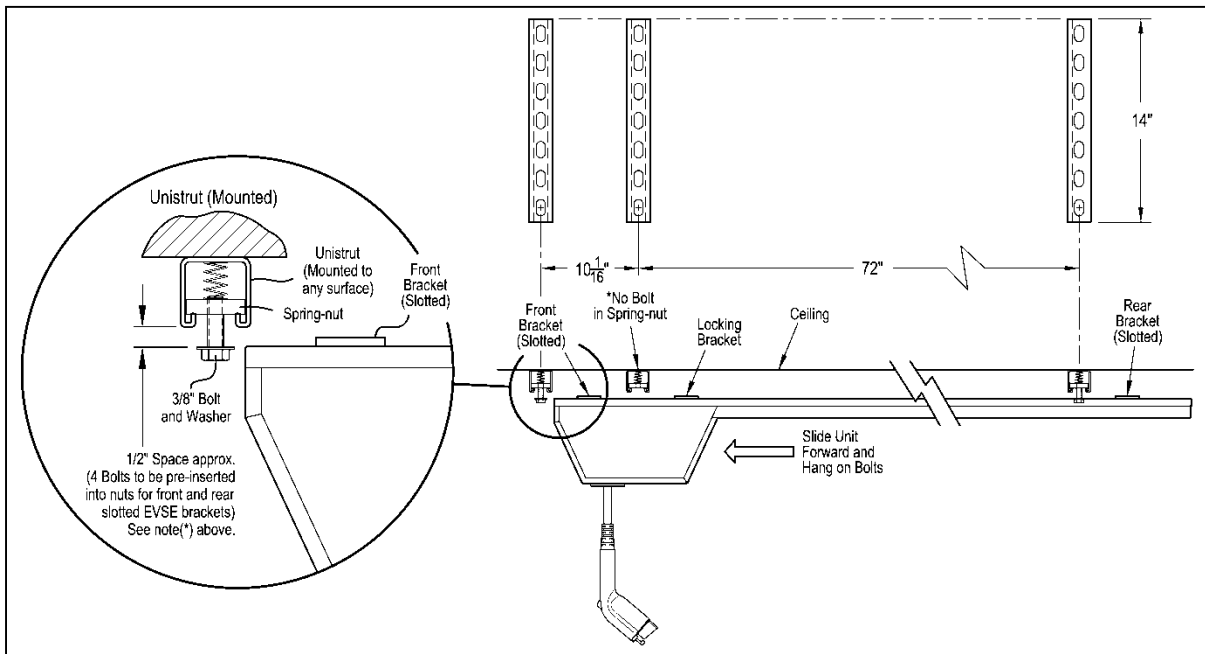


Figure 6



CAUTION:

The EVSE Unit weighs 45 pounds and must be installed by a minimum of two (2) properly trained professionals to avoid injury or damage to the unit.



ATTENTION:

L'unité EVSE pèse 45 livres et doit être installée par un minimum de deux (2) professionnels convenablement formés pour éviter des blessures ou des dommages à l'unité

1. Install the six spring nuts into the Unistrut (2 per Unistrut).
2. Select six (6) 3/8 in. bolts with washers and insert two (2) into both the front and rear spring nuts in the Unistruts. Do not insert bolts into the middle Unistrut at this time. Leave a gap of 1/2 inch between the head of the bolts and the Unistrut side channels (**Figure 6**).
3. Ensure the J1772 connector and attached cable will not interfere with installation.
4. Lift the EVSE Unit into a position level with the ceiling – aligning the open slots with the protruding bolt heads (**Figure 6**).
5. Slide the unit in the direction of the protruding bolt heads until the slots of the mounting brackets butt-up to the shanks of the protruding bolts. (**Figure 6**). Snug up these four bolts.
6. Insert bolts and washers into the middle bracket holes. The unit can be moved slightly to allow the bolts/holes to align.
7. Tighten all bolts (**six places**).

Positioning Junction Box and Conduit

Figure 7 presents a general arrangement for the placement of the Control Module and Conduit needed to provide both power to and control of the EVSE Unit. Your installation might vary according to the conditions at your site.

NOTE: Observe required Lockout/Tagout procedures while making any electrical connections or servicing the unit.

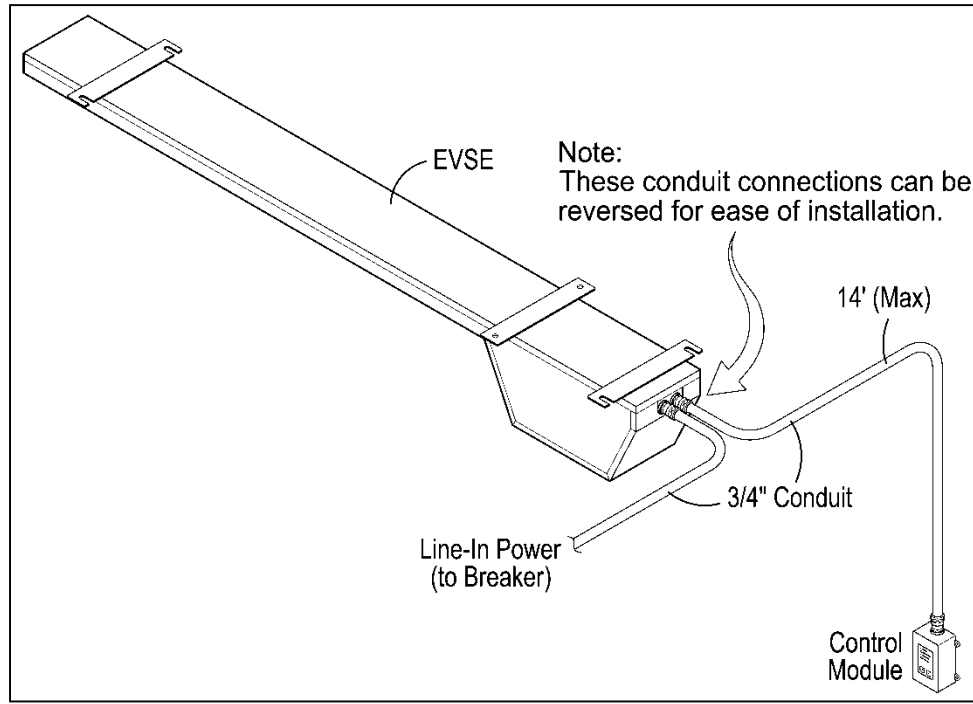


Figure 7

Installing the Control Module and Wiring

1. Locate the Control Module unit (**Figure 8**).
2. Remove the cover and switch plate from the Control Module weather-proof box (**Figure 8**).
3. Locate the most convenient spot for the Control Module and mount it to a wall or pole four (4) ft. above the floor. It needs to be located within a 14' cable length from the EVSE.
4. Install $\frac{3}{4}$ in. conduit between the Control Module and the EVSE.

Control Module Installation:

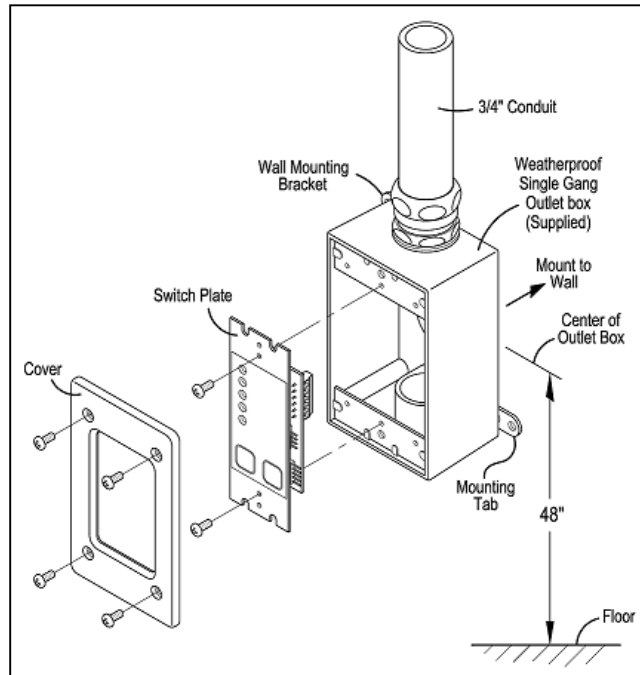


Figure 8

5. Locate the factory-supplied multi-conductor cable and plug it into the 6-pin COMM port on the EVSE (**Figure 9**).
6. Feed the wire through the $\frac{3}{4}$ in. conduit to the Control Module box.
7. Leave a 9 in. service loop and cut the cable.
8. Strip the cable back 2 in. to expose the internal wires.
9. Locate the Control Module control card and attach the wires to the communication terminal block (**Figure 9**).
10. Reattach the switch plate and cover to the wall mounted box.

Control Module Communication Wiring Connection:

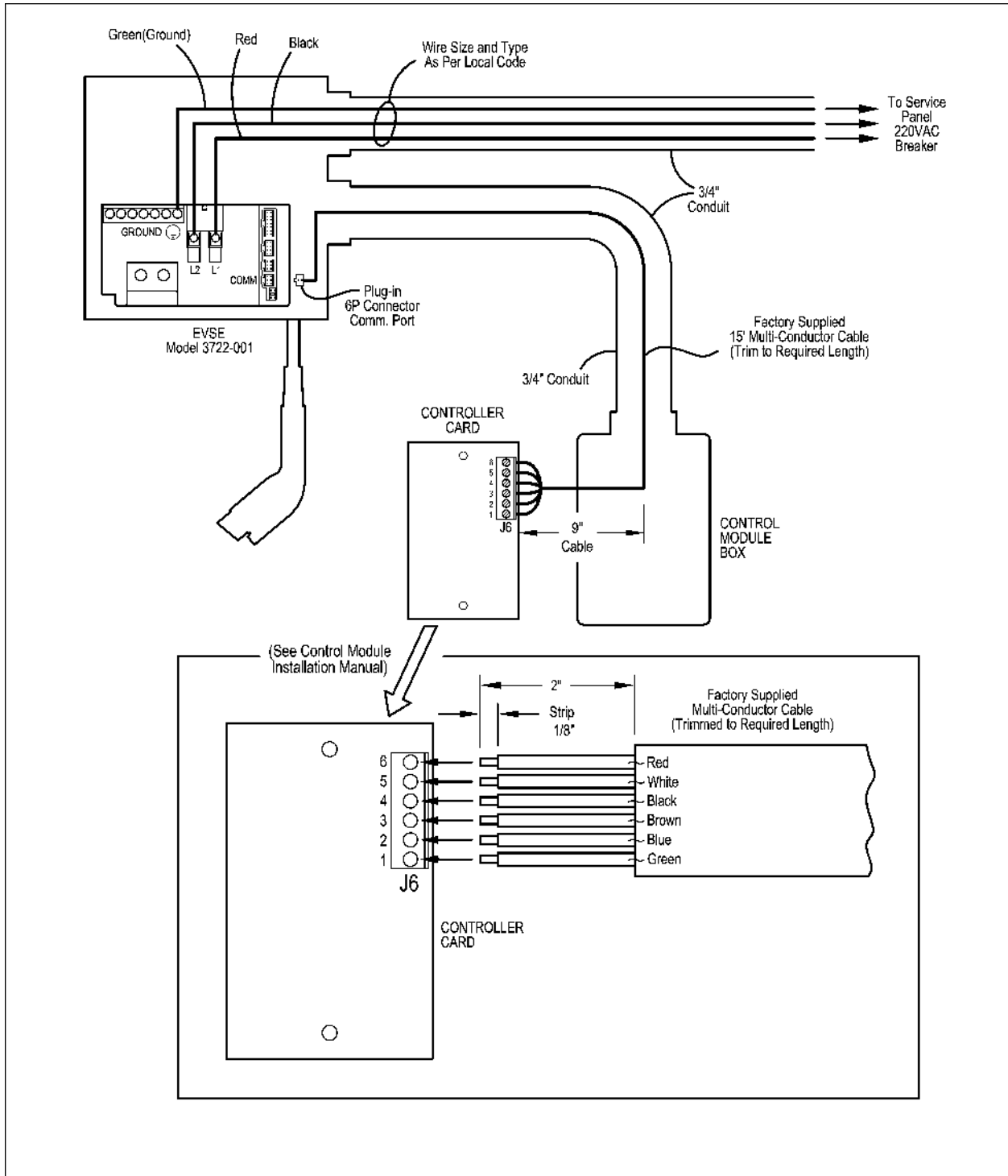


Figure 9*

* **Note:** Refer to Page 8 for Electrical Specifications.

Electrical Service Connections

(Observe all required Lockout/Tagout procedures while making any electrical connections, or servicing the Model 3722)

1) 220/240 VAC, Single Phase Transformer:



Caution:

The two phases used must each measure 120V to Neutral. Earth Ground must be connected to Neutral at only one point, usually at the Service Entry Breaker Panel.



Attention:

Les deux phases utilisés doivent chaque 120V mesure au Neutre. Motif de la terre doit être connecté au Neutre à un seul point, habituellement à l'entrée de Service Breaker Panel.

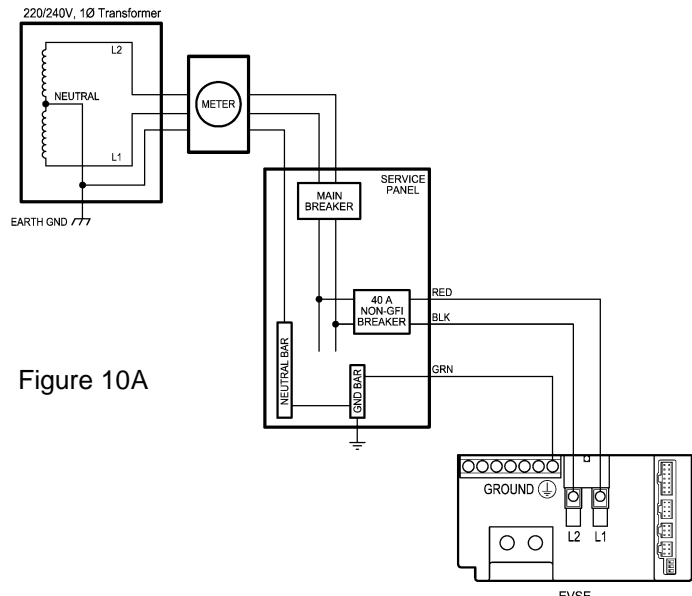


Figure 10A

2) 208 VAC 3-Phase Wye Transformer:



Caution:

This EVSE is a single-phase device. Do not connect all 3 phases of a 3-phase, Wye-connected feed ! The center-point of the 3 phases (usually used as Neutral) must be grounded somewhere in the system. A current-carrying Neutral is not needed by the Model 3722-001. Only Line 1, Line 2 and Ground are required. The two phases used must each measure 120V to Neutral.



Attention:

Cette EVSE est un appareil monophasé. Ne pas connecter tous les 3 phases d'un flux de phase 3!!! Vous pouvez utiliser tout deux phases d'une phase 3, Wye connecté nourrir ! Le point central des 3 phases (généralement utilisé comme Neutre) doit reposer quelque part dans le système. Il n'est pas nécessaire de Neutre porteurs de courant par le Modèle 3722-001. Seulement, Ligne 1, Ligne 2 et au sol sont requis. Les deux phases utilisés doivent chaque 120V mesure au Neutre.

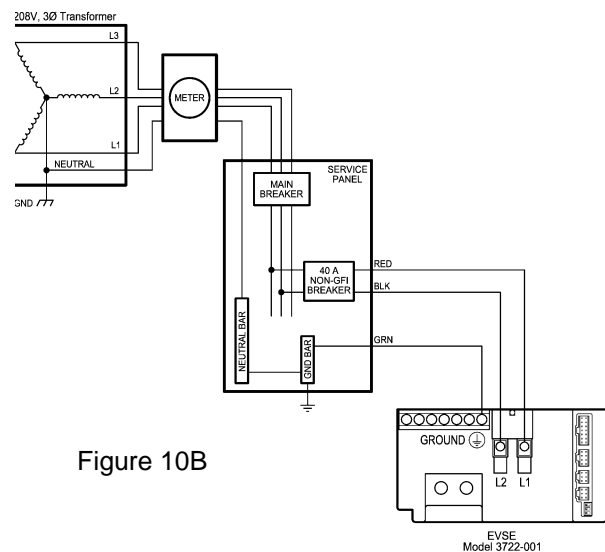


Figure 10B

Note: A 40 Amp. Non-GFCI breaker is required for the 3722-001 EVSE.

3) 240V Delta Transformer:

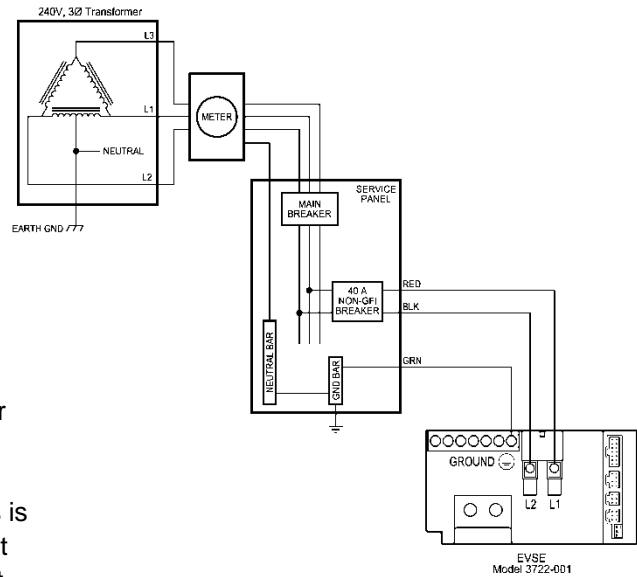


Figure 10C

**Caution:**

When using a delta-style power source for the EVSE 3722-001, there must be a center tap. Only the two phases on either side of the center tap (L1 and L2) can be used and each must measure 120V to Neutral. If this is not done, the ground-fault protection will not function properly. Also, the center tap must be connected to ground. The third phase (L3) is not used.

**Attention :**

Lorsque vous utilisez une source d'alimentation de delta-style pour la EVSE 3722-001, il doit y avoir un robinet center. Seuls les deux phases de chaque côté de l'eau du robinet center (L1 et L2) peuvent être utilisés et chacun doit mesurer 120 v au neutre. Si cela n'est pas fait, la protection du sol-faute ne fonctionnera pas correctement. Aussi, le robinet du Centre doit être connecté au sol. La troisième phase (L3) n'est pas utilisée.

Note: A 40 Amp. Non-GFCI breaker is required for the 3722-001 EVSE.

Final Electrical Wiring



Warning: Disconnect power from service lines.

Avertissement: Déconnecter puissance de lignes de service.

Prior to performing the final wiring steps in this section, ensure that power has been removed from the service lines originating from the service panel.

To maintain the safety of all persons in the area, a lockout/tagout procedure should be followed per 29 CFR 1910.147.

Lockout is the placement of a lockout device on the service panel energy isolation device (circuit breaker) to ensure that the power source cannot be operated until the lockout device is removed. A lockout device utilizes a positive means such as a lock (key or combination lock with a circuit breaker lockout) to hold the breaker in a safe position to prevent energization.

Tagout is the placement of a tagout device (a tag or other prominent warning device) on an energy isolation device to indicate that the energy isolation device and the equipment being controlled cannot be operated until the tagout is removed. The tagout device should be non-reusable, attached by hand, self-locking and non-releasing with a minimum unlocking strength of no less than 50 pounds.

The lockout approach shall be used unless the utilization of a tagout procedure will provide full personnel protection.

Prior to proceeding with the following steps, implement the lockout/tagout at the power source.

Note: The Terminal Block and Ground Bar can accommodate wires from 6-14 gage.

To make final power terminations to the EVSE, you will need to attach the red, black and green power wires originating from a 40A breaker within the service panel (**Figure 9**). Using **Figure 12** as a guide, remove the EVSE's service cover. Locate the **AC LINE IN** power connector, and make sure the two screws are backed off to raise the internal wire pressure plate. Strip 3/8" insulation off the red wire and insert it into the **L1** opening on the AC LINE IN connector. Tighten the screw to 18 ½ **inch** pounds to secure the wire. Strip 3/8" insulation off the black wire and insert it into the **L2** opening on the **AC LINE IN** connector. Tighten the screw to 18 ½ **inch** pounds to secure the wire. Strip 3/8" insulation off the green wire and insert it under one of the ground screws on the **GROUND** bar. Tighten the screw to 25 **inch** pounds to secure the wire. Complete the **Installation Notes** section of this manual and retain for future reference. Re-install the service cover.

Once the steps in this section are completed, an authorized person should confirm that non-essential items are removed and that the EVSE is operationally intact. This person should check to ensure that all persons in the area are safely positioned and notified that the lockout/tagout devices are being removed. The lockout/tagout device must be removed by the authorized person who applied the device.

Installation Notes

It is important to fill out the following information for your records.

Circuit

Panel Location _____

Breaker Number _____

Breaker Rating _____

EVSE

Location _____

Number _____

IP Address _____

Date installed M____ D____ YR____

Installer ID

Company _____

Name _____

Tel. No. _____

Options and Settings

Control Module

There are a number of different versions of Model 3740 Control Modules that are compatible with the Model 3722 EVSE. The Control Module is purchased as a separate line item. However it is tested and shipped with the EVSE.

The primary function of the Control Module is to turn ON and OFF the EVSE, and to display its operational status.

The unit is equipped with five status LEDs.

- Blue:** Indicates primary power is applied.
- Yellow:** When cable is lowered to charge the car it starts blinking, indicating it is ready to be connected. Once plugged into the car, it shuts off.
- Green:** After plugging the J1772 connector into the car it starts blinking, indicating the car is charging. Once the car is fully charged, it turns on solid.
- Red:** Indicates a problem has occurred. (Refer to the **Status Indicator Chart**).
- Orange:** When lit, the EVSE has been reserved for use by another vehicle.

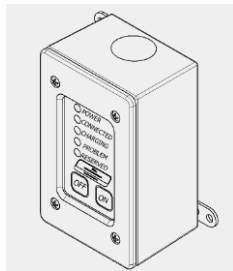


Figure 11

Control Module Options

Model 3740-101	Control Module/On-Off
Model 3740-104	Control Module/Control Access (CASS) (Refer to 3740-CS-104 for installation instructions)
Model 3740-105	Control Module/RFID-Proximity
	Contains FCC ID: JQ60006A Canadian IC: 22361032212A
Model 3729-001	Control Module/Status Indicator

Communications and Payment Options

Remote-mounted Payment Modules (3725-004) and Gateway Modules (3727-200) are available for separate purchase.

ZigBee Communication Module (3727-101) – See the Payment Module (3725-004) or Gateway Module (3727-200) User Guides for instructions for adding a ZigBee-equipped EVSE to the ZigBee Mesh Network.

Serial Communication Module (3740-104)

Service Cover Removal

(For Access to Settings, Controls and Power connections)

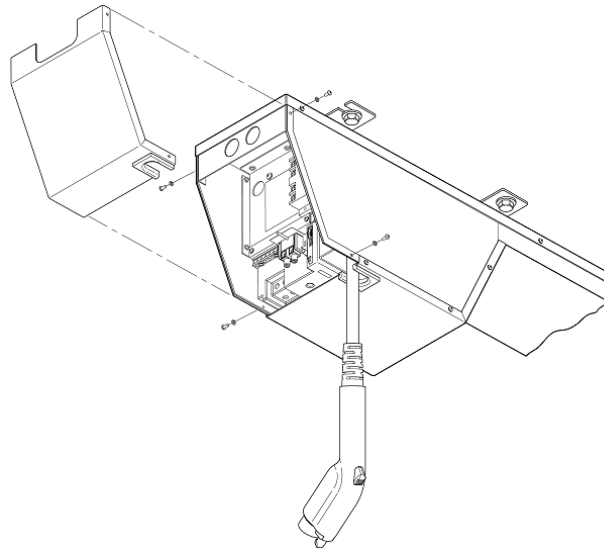


Figure 12

Dip Switch Settings

Each Model 3722 is equipped with an 8-position dip switch (**Figure 13**) on the Power Control Module, for personalizing each installation.

- Service panel limitations might require the EVSE to limit the current to the Electric Vehicle and to reduce the size of the service breaker from 40 amps to 20 amps. The model 3722 is shipped to instruct the Electric Vehicle that it can draw up to 30 amps (a 40 amp circuit breaker). If only a 20A breaker is available, **Switch 8** must be closed, reducing maximum charge current to 16A.
- **Switch 7** sets the amount of time the user has to engage the J1772 connector after authorization. In the case where a payment module is not used and the 3722 **ON** button is the actuation mechanism, the default **OPEN** setting of this switch allows the user one minute to engage the J1772 connector in the vehicle. In the situation where authorization via a payment module is required prior to the initiation of charging, the closed position for **Switch 7** allows a 15-minute timeout for the authorization. In other words, if the J1772 plug is not engaged in 15 minutes, a new authorization must be obtained. This allows the user time to walk from the payment module, which might be located some distance from the 3722, to the vehicle to plug in the connector.
- The mounting height of the EVSE can vary. Therefore, **Switch 5** and **6** are used to lower the J1772 connector to the proper ADA height above the floor (48").
- **Switch 4** allows for setting the pulse length expected from the security access system when the CASS Control Module has been selected for the EVSE.
- **Switch 3** is used for connecting the EVSE to a ZigBee mesh network. See the *3725 Payment Module User Guide* for more information.
- **Switch 2** determines whether the proximity switch signal in the J1772 connector is utilized, upon disconnection from the vehicle, to initiate cable retraction. In the **OPEN**, default setting, the signal is ignored and the loss of the pilot signal initiates retraction. In the **CLOSED** position, the cable retraction is triggered solely by the removal of the connector from the vehicle, as indicated by the proximity switch in the J1772 connector.

SW8
 *Open 40A Breaker
 Closed 20A Breaker

SW7
 *Open Inactivity Timer Enabled, 1 Min
 Also EVSE Activated by Local "On" Key (No Payment Module)
 Closed Inactivity Timer Enabled, 15 Min
 Also EVSE Activated by Payment Module

<u>SW5</u>	<u>SW6</u>	
*Open	Open	10' Height
Closed	Open	9' Height
	Open	8' Height
Closed	Closed	7' Height

SW4
 *Open "DO" (Door Open) On for Full Length of Charge Cycle
 Closed "DO" (Door Open) is Pulsed Like a Door Status Switch
 (Pulsed for 3 Seconds)

SW3
 *Open Not in Test Mode
 Closed Test Mode for adding to ZigBee Network

SW2
 *Open J1772 Proximity Switch Ignored
 Closed J1772 Proximity Switch Used to Initiate Cable Retraction

SW 1
 For Future Use

*DEFAULT SETTINGS

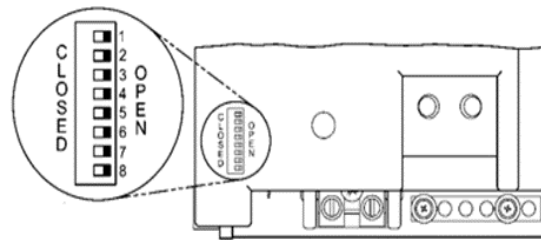


Figure 13

Remote Controls (External Control Input)

Remote controls are wired to an eight-pin connector marked External Control (J3) (**Figure 14**).

A contact closure between Pins 1 and 2 will place the EVSE in standby mode, reducing the available power to the Electric Vehicle to 6 Amps.

A contact closure between Pins 3 and 4 will turn off power to the connected Electric Vehicle.

A 0 to 3.2vdc signal between Pins 5 and 6 will signal the electric vehicle to reduce its charging current.

This feature is compatible with Control Module Inc.'s Power Sharing Modules (Models 3741-002 and 3741-003).

A solid state closure to ground is provided on Pin 8, when the Electric Vehicle signals the EVSE that an external fan is required. It is recommended that, when using these features, the Cable Adapter Card (Model 3728-001) be used, making wiring easier.

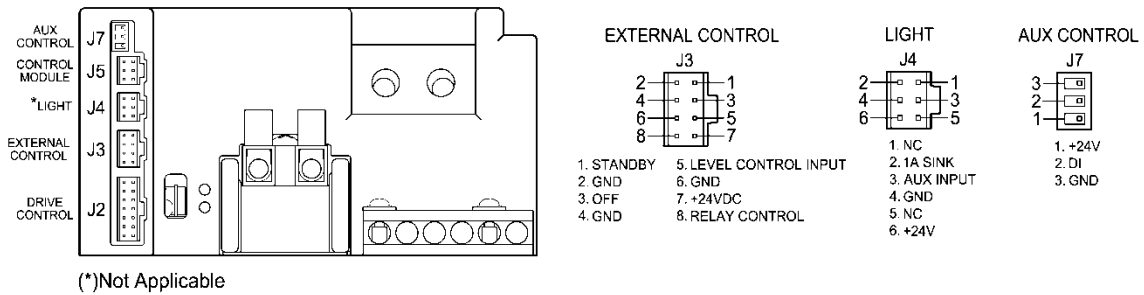


Figure 14

Optional Features

All optional features are compatible with Model 3722 and are purchased as a separate line item. The modules can either be installed at the factory or easily installed in the field at a later date.

Communication Modules (Models 3727)

Several communication modules are available that allow the EVSE to communicate wirelessly with: Payment systems, Home Area Networks and Wi-Fi Gateways. If this EVSE includes a ZigBee module, see the 3725 Payment Module User Guide for information about adding it to a ZigBee Mesh Network.

Remote Fob (Model 3790-001)

An external module that receives RF signals from a remote fob to lower the EVSE J1772 power cable.

Operation

With CMI's Model 3722-001 Watt Point Charging Station, the user of the Electric Vehicle is provided with a safe and manageable link between the power grid and the vehicle. The unit stores the J1772 power connector above most vehicles, and out of the reach of most adults and children.

CMI's Model 3722 is very easy to use, and when in the ready mode, the blue LED will be ON. When the **ON** button is pressed on the Control Module, the charging cable will slowly lower and come to a stop when the cable charging connector is at a height of 48 inches. This complies with the codes specified in the American Disabilities Act (ADA) standards. The charging connector and cable can then be extended and plugged into the vehicle's charge port. There is a mechanical **Proximity Latch** that holds the connector firmly in place while charging. Make sure the latch has clicked into place. Normally, the EV will immediately request a charge, causing the green **Charging** LED to start blinking, and charging will begin.

If the unit is in Simulated Level 1 Charge Mode (7A@208-24A VAC), both yellow and green LEDs will flash while charging.

After lowering, the Model 3722 will wait for one minute for the J1772 to be plugged into the EV's charge port and communication to be established between the EV and the Model 3722. If one minute elapses before the J1772 is connected to the EV, the motorized cable will automatically retract to its storage location.

When communication is established between the EV and the Model 3722 via the pilot signal, it will determine if the EV requires an exhaust fan. If so, since the Model 3722 is not equipped with a fan control, it will not supply power to this EV. It will indicate this with a blinking red **Problem** LED on the Control Module. (**Status Indicator Chart**)

If the EV does not require an exhaust fan, the Model 3722-001 will send a signal that tells the EV how much current it can supply. The Model 3722 can supply up to 30A @ 208-240 VAC if a 40 Amp breaker is installed in the service panel. If a smaller 30A breaker is used, the Model 3722 dip switch must be adjusted to reflect the breaker size being used. (**Figure 13**)

With each new connection, the Model 3722-001 applies a ground fault to ensure the protection is working and the grounds are attached. If the grounds are missing or the circuit does not trip, power is removed and the red **Problem** LED turns on. Charging will not take place until the problem is corrected. If the circuit trips, it is automatically reset and power is applied to the EV.

When power is applied to the EV, the Model 3722 monitors the current being drawn by the EV. Should the current exceed the maximum levels set by the breaker switches, the Model 3722 will again disconnect the power from the EV and the red **Problem** LED will turn on. If there was a ground fault, the Model 3722 will attempt three closures after a short delay. There is no reclosure with an over-current trip.

The Model 3722-001 will continue to apply power to the EV, provided the J1772 connector is attached to the EV. When the Proximity Latch on the J1772 is pressed, the power is removed before the J1772 is removed from the EV. When the Model 3722-001 detects that the J1772 is removed from the EV, the cable fully retracts into storage and the **Charging** LED on the Control Module is turned off.

Test Procedures

With the communications required between the EVSE and the Electric Vehicle, it is recommended that the installer use a Control Module Inc. Model 3840-001 hand-held tester. This will thoroughly check out the EVSE, before using an Electric Vehicle. See the 3840-001 manual for operating instructions.

When the J1772 cable is being retracted, hold the cable and prevent it from retracting. The drive motor should stop. Let go of the cable, and after a moment the cable will again automatically retract.

Refer to the **Status Indicator Chart** for LED Status Indications should a fault occur during installation or operation.

Status Indicator Chart

NORMAL USE MODES:		BLUE	YELLOW	GREEN	RED
1	Line Voltage On	F/2	F/2	F/2	F/2
2	Self-Diagnostics Pass Cable is in home position Line Voltage is between 208-240VAC Ground Connection Present	ON	X	X	X
3	Cable Extending/Waiting to connect Cable Retracting/Disconnected	ON	SF	X	X
4	Cable is connected	ON	ON	X	X
5	Voltage applied to vehicle	ON	X	SF	X
6	Vehicle in charge mode (Level 2)	ON	X	FF	X
7	Vehicle charged	ON	X	ON	X
8	Cable is connected/standby mode (ext. contact) (Level 1 charge)	ON	SF	SF	X
9	Cable is connected/off mode (ext. contact)	ON	FF	FF	X

FAULT MODES:

1	Ground wire is NOT connected	FF	X	X	ON
2	Line Voltage Is less than 208VAC	SF	X	X	SF
3	Clutch/Cable Motor Failure	X	SF	X	ON
4	GFCI Trip (reclosure in process)	SF	SF	X	SF
5	GFCI Trip	SF	SF	X	ON
6	GFCI Circuit Failure	SF	X	X	ON
7	Over Current Trip	FF	FF	X	ON
8	Stall Trip (reclosure in process)	ON	SF	X	SF
9	Stall Trip	ON	SF	X	ON
10	Pilot Problem	ON	ON	X	SF
11	Ventilation Required	ON	X	X	SF
12	Display Offline (comm. problem with sequencer)	FF	X	X	X
13	Load/No Load Voltage Differential Problem	X	X	X	FF

PROGRAM MODES:

1	In Program Mode	SF <--	SF <--	SF <--	SF <--
2	Program Completed/program connector attached	ON	ON	ON	ON

Legend

F/2 = Flash once for 2 sec. X = Led is off
 SF = Slow flash (1/sec) <-- = In Sequence
 FF = Fast flash (3/sec)

User Maintenance

It is recommended that the following preventative maintenance be performed at least monthly:

- The J1772 connector should be checked for foreign matter, cleaned and dried with a mild detergent (safe for plastics), and then allowed to dry.
- The power cord and power connector should be inspected for wear and tear or cuts exposing wires.
- Report mechanical damage.

Moving, Transporting And Storage



WARNING:

Ensure electrical power has been shut-off at the source before removing the Model 3722-001 EVSE.



AVERTISSEMENT :

S'assurer d'énergie électrique a été fermeture à la source, avant d'enlever le Modèle 3722-001 EVSE.

- Should the Model 3722-001 EVSE need to be relocated, remove the unit in the reverse order that it was installed.
- Do not lift or carry the unit using the EV cable.
- Ensure all wiring is stored inside the housing.
- Bag all attaching hardware and secure on/in the unit.
- Store the unit in a dry, low humidity area.
- Protect the unit using appropriate packaging.

Customer Support

Should questions about installation, operation, optional features, maintenance or service arise, please call Technical Support at 1-888-753-8222 between the hours of 8:30 am to 5:00 pm EST, Monday to Friday.

Letter	Service Department Attn: Jack Batalha, Director Product Support Control Module Inc. 89 Phoenix Avenue Enfield, CT 06082
Fax	1-860-741-6064
E-mail	jbatalha@controlmod.com

Warranty

FOB Enfield, CT

EVSE proprietary hardware products are warranted to be free from defects in materials and workmanship for a period of 1 (one) year from the date of receipt of the product. Customer can report an Equipment defect to the Control Module Service Division by (a) telephone between 8:00 A.M. and 4:30 P.M. (EST), Monday through Friday, excluding Control Module holidays, or (b) through the support website.

Telephone number: 800-527-4998

Email address: service@controlmod.com

The foregoing warranty does NOT include

- Furnishing supplies for, painting or refinishing the product
- Electrical work external to such product
- Installation, maintenance or removal of alterations, attachments or other devices not furnished by EVSE, LLC.
- Services which cannot be practicably performed due to alterations in or attachments to the product
- Services for accessories
- Repair or replacement of defective product to the extent the defect is attributable to:
 - Neglect or misuse (including use of the product for purposes other than that for which it was designed)
 - Transportation, vandalism or burglary of the product, acts of terrorism, accident or disaster, or other external causes (including water, wind , lightning and dust)
 - Alterations to the product or servicing of the product by a third party
- The foregoing warranty shall also not apply to the extent the defect in the product is due to the use of the product in conjunction with other products not manufactured by EVSE or to product from which the serial number has been altered, defaced or removed. This warranty extends only to the original purchaser of the product. It may not be assigned to any third party.

Disclaimer of All Other Warranties: THE WARRANTY SET FORTH ABOVE IS THE SOLE WARRANTY THAT EVSE PROVIDES WITH RESPECT TO THE EQUIPMENT. CUSTOMER ACKNOWLEDGES THAT CMI EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY, NON-INFRINGEMENT OR FITNESS FOR A PARTICULAR USE OR PURPOSE, OR ANY WARRANTY IMPLIED THROUGH COURSE OF CUSTOM OR USAGE OF TRADE.

Disclaimer of Liability: IN NO EVENT SHALL EVSE BE LIABLE TO CUSTOMER OR ANY THIRD PARTY CLAIMING THROUGH CUSTOMER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF EARNINGS, PROFIT OR GOODWILL OR COSTS OF COVER, IN EACH CASE RELATING TO THIS WARRANTY OR TO THE EQUIPMENT, EVEN IF SUCH DAMAGES WERE FORESEEABLE AND EVEN IF THIS WARRANTY FAILS OF ITS ESSENTIAL PURPOSE.

EVSE LLC

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