Watt Point™

By Control Module Inc., EVSE LLC

State of the Art EVSE

Electric Vehicle Supply Equipment (EVSE)

Model 3703

For Wall and Pole Mounted Installations

Control Module Inc.
Founded in 1969
EVSE LLC

User Manual and Installation Guide
Model 3703-001
Electric Vehicle Supply Equipment (EVSE)

Patents Pending
3703-IG-001 Rev 2
November 2016

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Important Notes

Safety and Compliance

This document provides instructions for installing the Watt Point™ Charging Station Model 3703 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 personnel 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 A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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 7.8 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

Instructions Pertaining to Risk of Fire and Electrical Shock

The following is a summary of safety concerns relevant to the installation and use of the Model 3703 EVSE Unit. Failure to follow these safety instructions may lead to serious injury, death and/or damage to the equipment.

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, operation 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 the Model 3703-001 EVSE Unit

The Model 3703 Watt Point™ Electric Vehicle Supply Equipment (EVSE) is a 7.2 KW wall- or pole-mounted EVSE with manual cable, capable of providing up to 30A at 208-240VAC, single phase, 50 or 60 Hz. It is configurable as a single wall mount, single or dual pole mount. This unit complies with the SAE J1772 specifications for supplying electrical power to a J1772-compatible Electric Vehicle (EV). The Model 3703 allows the user to conveniently wrap the 17-foot cable onto the storage hook and insert the connector into a holster when not in use. The model 3703 is capable of being controlled remotely to apply, reduce or disconnect power to the electric vehicle, and measures both voltage and current being supplied to the EV. The 3703 communicates directly with a Payment or Gateway Module, and five status lights clearly indicate the state of the charging operation.

Power must be located at each charging location and be supplied by a dedicated 40A non-GFCI circuit breaker at the service panel. (Two breakers for dual EVSEs.) A qualified electrician or installer should provide local power at each charging site, install conduit runs back to the main service panel and make final wiring connections for power at the service panel. For information about the Control Module Inc. products featuring automatically retracted cables, contact us at the Customer Support number noted in this document.

Safety Features

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 3703 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 3703 EVSE, when in use, continuously monitors the current being delivered to the EV. Should the current exceed 32A for 15 seconds, the Model 3703 EVSE will disconnect the power to the EV before the breaker trips. After disconnecting, the 3703 will auto-reset.

Plug Out Detection - The model 3703 EVSE is equipped with a Plug Out Detection circuit that identifies when the connector is attached to the electric vehicle. This allows the EVSE to immediately remove electric power from the electric vehicle before the connector is totally removed from the vehicle inlet.

Payment Options

A Payment Module is used with the 3703 EVSE in fee-based electric vehicle charging environments to facilitate commercial transactions. The 3725-104 Payment Module is engineered to work with the 3703 EVSE, whether the EVSE is single- or dual-mounted on a pole, or wall-mounted. The Payment Module and EVSE can be located on the same pole, nearby when wall-mounted, or mounted remotely from each other. Refer to the *3725 User Manual and Installation Gu*ide for more information about the Payment Module.

Note: A Gateway Module (Model 3727-200) can be used in place of the Payment Module when two-way communication is required without payment functions. . Refer to the *3727 User Manual and Installation Guide* for more information about the Gateway Module.

Communication Options

There are two communication options available for facilitating communication between the EVSE and payment or gateway systems:

Serial Connection

A serial connection can be established between one or more 3703 EVSEs and a Payment Module or Gateway. A single serial Payment Module or Gateway can support from one to eight EVSEs, depending upon its configuration.

ZigBee Connection

The 3703 will also communicate to a Gateway or Payment Module using the ZigBee Mesh protocol, allowing wireless connections. ZigBee networks are secured by 128-bit symmetric encryption keys, so security is assured. A single ZigBee Payment Module or Gateway can support up to 32 remote EVSEs.

Pole-Mounted Connection

When the 3703 EVSE(s) and the 3725-104 Payment Module are mounted together on a pole, typically, an internal serial cable connects each EVSE to the Payment Module. The Payment Module then connects to an external network via a Cellular modem or a hard-wired Ethernet connection. The Cellular modem securely transmits encrypted payment data to and receives authorizations from external PCI-compliant processors. Communication can also link the EVSE network with third-party network management providers for reporting and call center support.

Wall-Mounted Connection

A configuration where it is most convenient to wall-mount the 3703 EVSEs typically means the 3725-104 Payment Module is also wall-mounted nearby. Like the pole-mounted option, connection of EVSE(s) and Payment Module is made using either serial-cable connections, or a ZigBee Mesh network. The Payment Module in this configuration operates identically to that described above for the pole mounted unit.

Remote Connection

Remote connections between 3704 EVSEs and a Payment Module can be made, typically using a ZigBee Mesh network. This allows the EVSEs and Payment Module to be located a greater distance from each other, and also a greater number of EVSEs to work with a single Payment Module. (See chart below).

EVSE to Payment Module Connection	EVSE to Payment Module Distance	EVSEs per Payment Module
Serial	Cable length should be no more than 180 feet from any EVSE to the Payment Module.	8
ZigBee Mesh Network	**Cable Length** **Indoors**: 30 – 65 feet (Depending on walls to penetrate.) **Outdoors**: Up to 4800 feet (Line-of-sight, depending on signal strength and environmental conditions.)	32

NOTE: Administrative data can be transmitted to a remote laptop computer (via the Gateway with a ZigBee Mesh network option only) without accessing an external network.

Specifications

Product Code

Product Code	3703

Electrical*

Voltage	208-240 VAC
Current (Rated)	30A/24A Switchable by Dip Settings
Current (Simulated Level 1)	7A@208-240 VAC (On Command)
Connections	Line 1 and 2, Ground, Neutral (Not Required)
Required Service (Panel Breaker)**	2-pole 40A breaker **Non GFCI** on a dedicated circuit/30A Switchable by Dip Settings
Stand By Power	Less than 8W typical (without communication/Payment Module/Gateway operating)
Max Rated Power	7.2KW

Safety Features

Over Current Disconnect	32A/26A 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 A, 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

Configurations

Mounting	Pole, Surface, Single (3703-1000-B) Pole, Surface, Dual (3703-1000-D) Wall Mounted (3703-1000-W)

Accessories

Communications Module (ZigBee)	Contains FCC ID: MCQ-PROS2B, IC: 1846A-PROS2B (optional)

General

Weight	14.2 lbs.
Dimensions	19.18 in (h) x 9.35 in (w) x 3.24 in (d) (Excluding Pole)

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

** Dual requires two breakers.

3703 Mounting Poles

Note: The EVSE can be configured as wall-mounted units without ordering additional items.

Select the appropriate Pole Kit based on EVSE type (single/dual) and mode of communication (Zigbee/Serial) to the Payment/Gateway Module. Different poles are selected if a Payment Module/Gateway is on the same pole as the EVSE, as noted below. EVSE, pole, Gateway/Payment modules are separate line items on the purchase order.

3841-15x	**Description**
3841-150	Pole Kit, Single, No Payment/Gateway Module, Zigbee
3841-151	Pole Kit, Single, No Payment/Gateway Module, Serial
3841-152	Pole Kit, Single, Payment/Gateway Module
3841-153	Pole Kit, Single, Payment/Gateway Module, Ethernet
3841-154	Pole Kit, Single, No Payment/Gateway Module, Serial, Exterior conduit connector mounting (ceiling)
3841-155	Pole Kit, Single, Payment/Gateway Module, Serial, Exterior conduit connector mounting (ceiling)
3841-156	Pole Kit, Dual, No Payment/Gateway Module, Zigbee
3841-157	Pole Kit, Dual, No Payment/Gateway Module, Serial
3841-158	Pole Kit, Dual, Payment/Gateway Module
3841-159	Pole Kit, Dual, Payment/Gateway Module, Ethernet
3841-160	Pole Kit, Dual, No Payment/Gateway Module, Serial, Exterior conduit connector mounting (ceiling)
3841-161	Pole Kit, Dual, Payment/Gateway Module, Serial, Exterior conduit connector mounting (ceiling)

Site Preparation

Site Selection

The Model 3703 is designed to be located for a specific parking lane or pair of lanes, if desired (**Figure 2**). The power cable can be extended up to seventeen feet (17'), easily reaching the front or side of the Electric Vehicle being serviced.

The site for the EVSE should be selected where it is easily seen, and as close as possible to the power source.

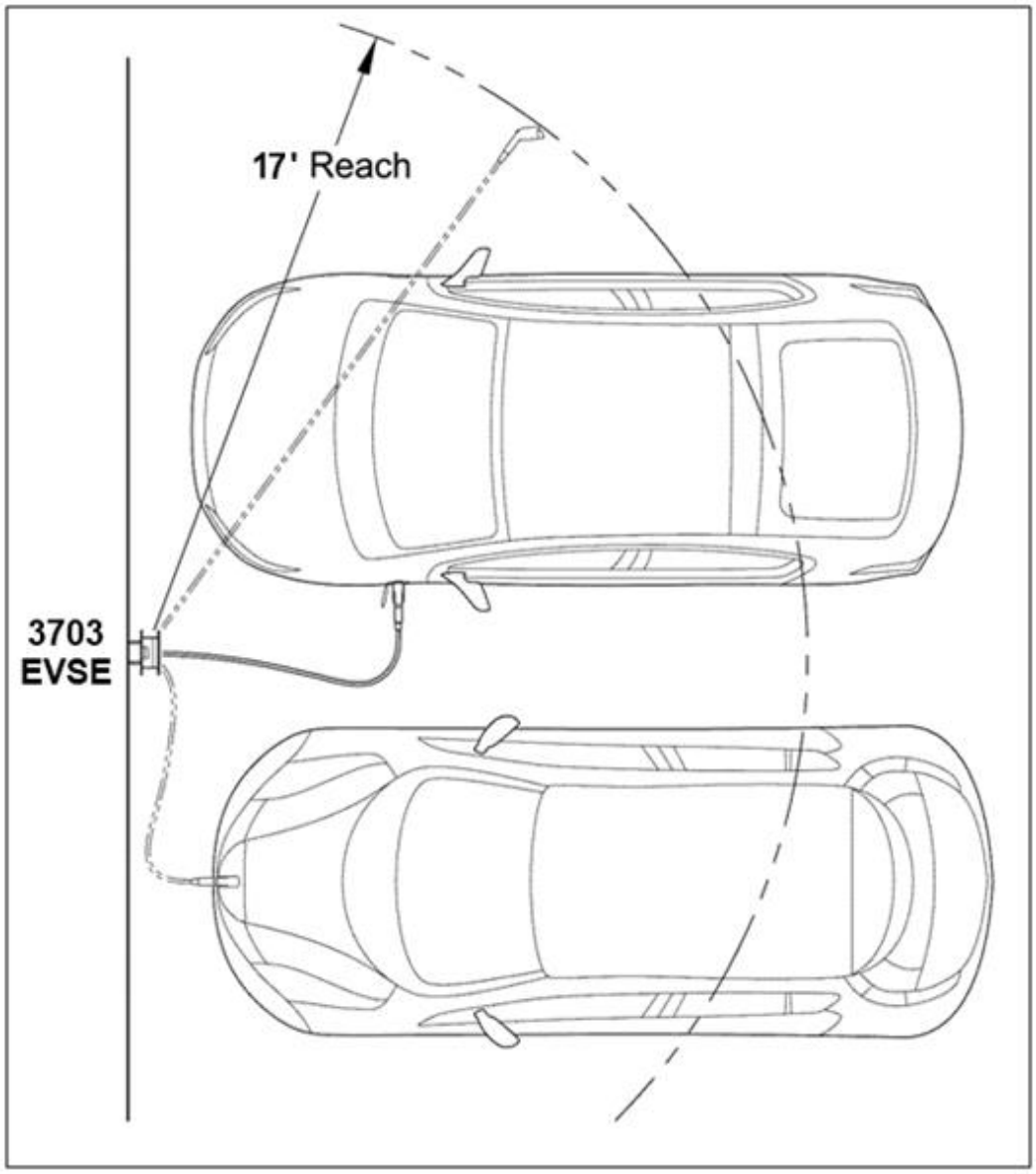

Figure 2

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 3703 is compliant with all aspects of the following ADA paragraphs.

303.2 Changes in Level – Vertical

Changes in level of ¼ inch (6.4 mm) high maximum shall be permitted to the vertical.

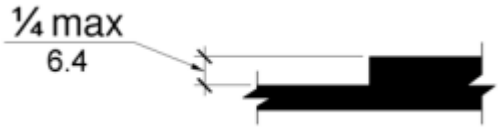

Figure 3A

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.

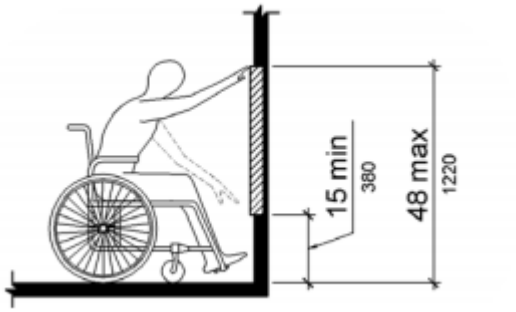

Figure 3B

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.

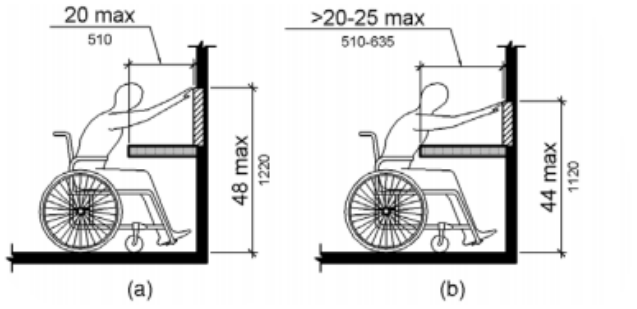

Figure 3C

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.

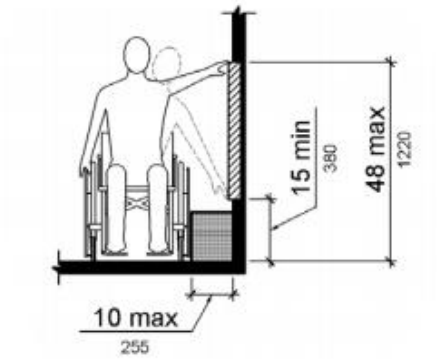

Figure 3D

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.

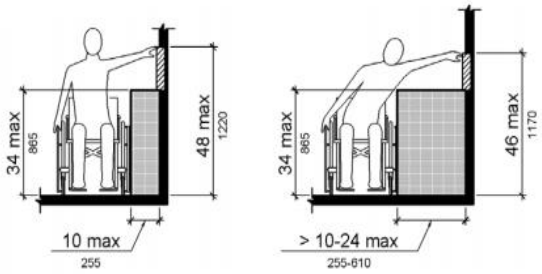

Figure 3E

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.

Dimensions

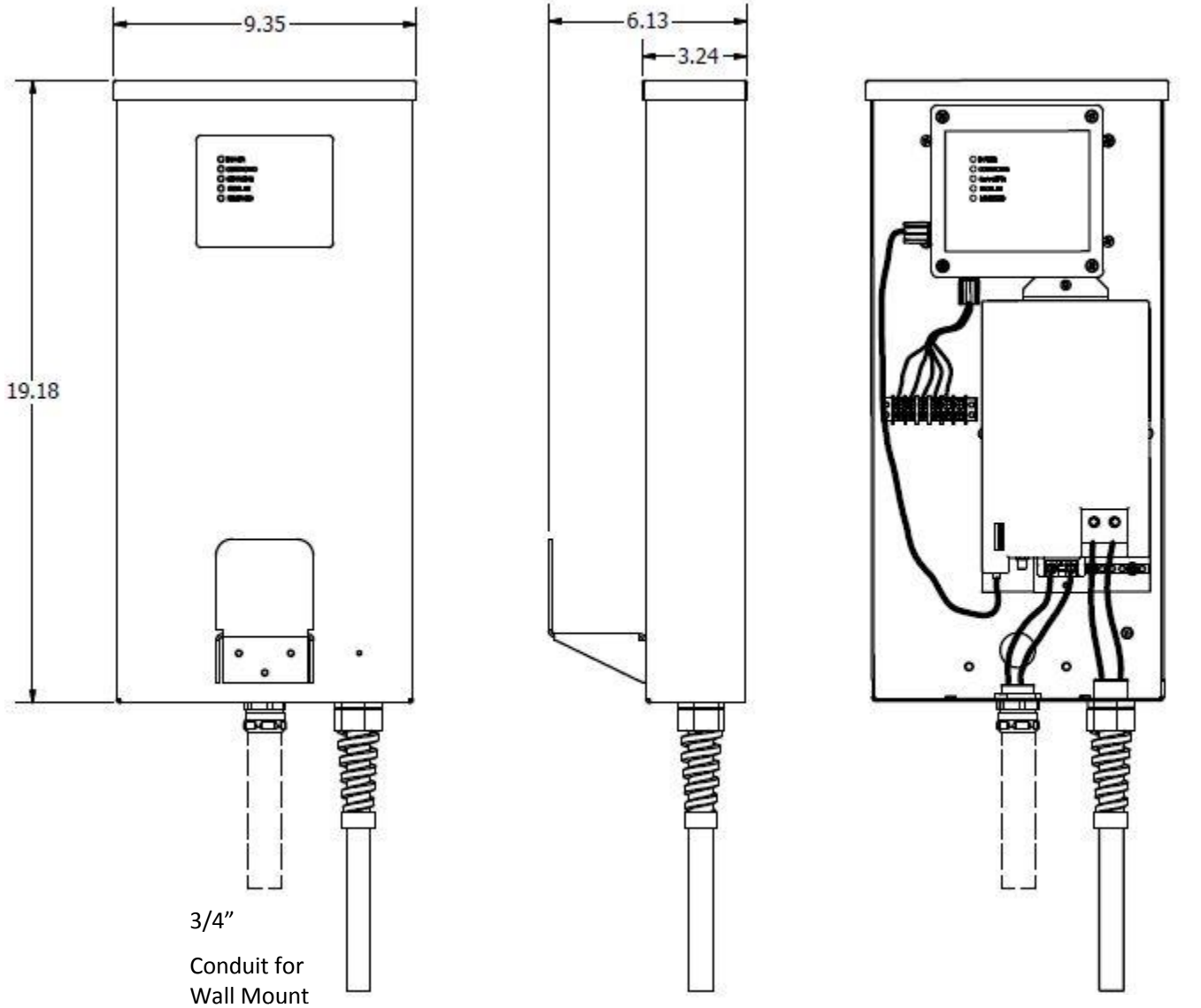

Figure1

Electrical Service Connections

(Dual Unit Shown)

Note: Observe all required Lockout/Tagout procedures while making any electrical connections or servicing the 3703.

1) 220/240 VAC, Single Phase Transformer: 3703

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.

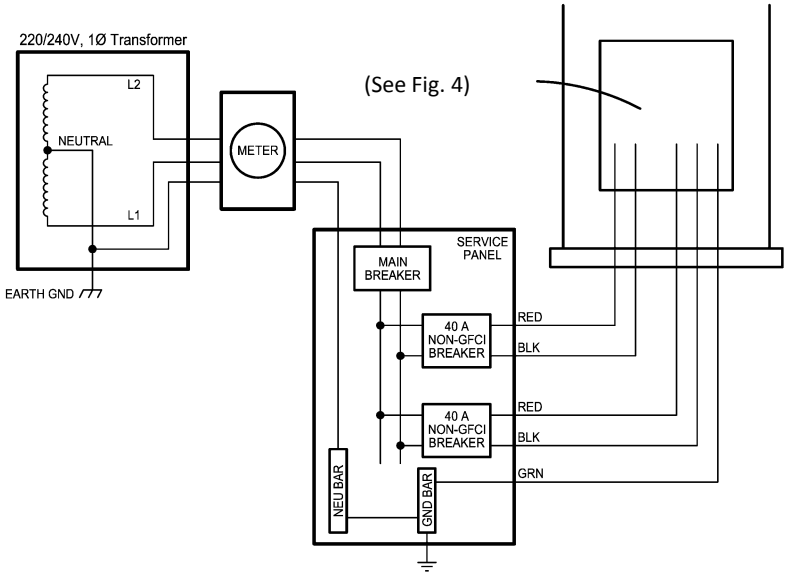

Fig.11A

Model 3703

2) 208 VAC 3-Phase Wye Transformer:

Caution:

<u>This EVSE is a single-phase device. Do not connect all 3 phases of a 3-phase feed!!! You may use any two phases of a 3-phase, Wye-connected feed !</u> 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 3703. The two phases used must each measure 120V to Neutral.

Attention:

<u>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 !</u> 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 3703. Les deux phases utilisés doivent chaque 120V mesure au Neutre.

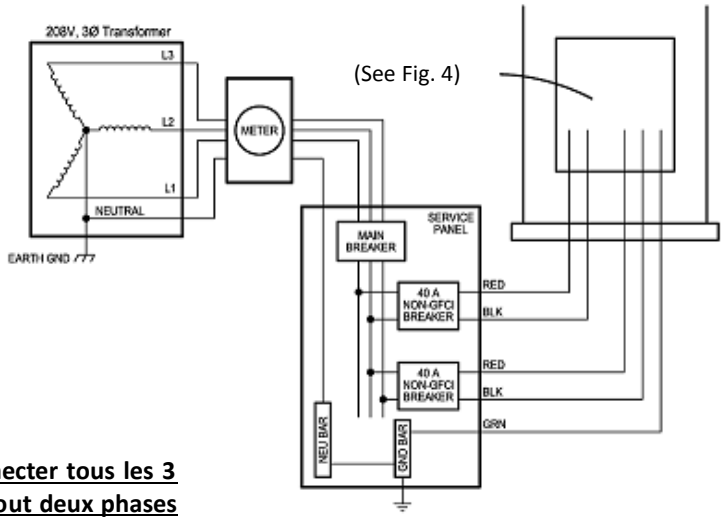

Fig.11B

Note: A separate 40 Amp. Non-GFCI breaker is required for each individual EVSE.

3) 240V Delta Transformer:

Caution:

When using a Delta-style power source for the EVSE Model 3703, 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.

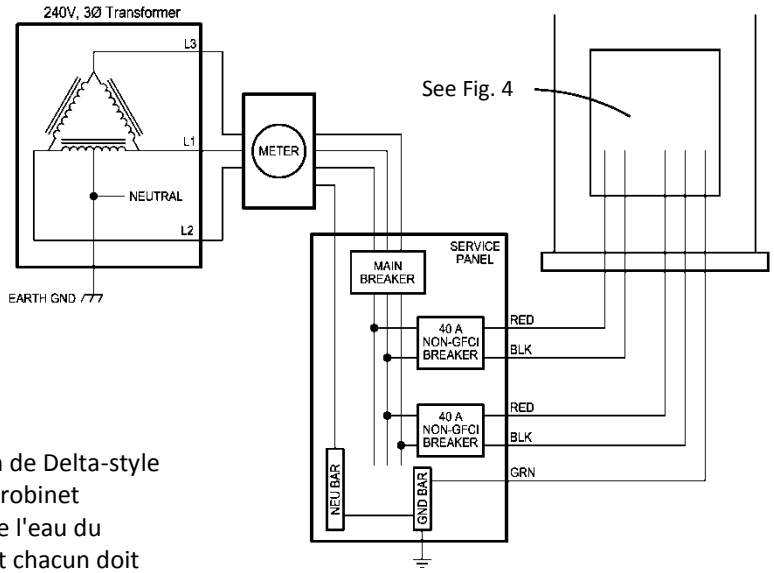

Fig.11C

Attention:

Lorsque vous utilisez une source d'alimentation de Delta-style pour le modèle de EVSE 3703, 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 separate 40 Amp. Non-GFCI breaker is required for each individual EVSE.

Mounting Options

Pole Mounting

Mount the 3703 mounting pole directly to a ground-level flat surface, which should accommodate the weight and pull force of the EVSE(s). The weight of a single pole is 24.6 pounds, while a dual 3703 pole weighs 38.8 pounds. The force required to pull the charging cable from the 3703 is five pounds maximum. A concrete sidewalk is a typical mounting surface. A one-inch conduit (to support AC wiring from the breaker panel) is typically brought up into the center bottom of the hole. If any communication to the 3703 is serial or Ethernet, an additional ¾ inch conduit needs to be brought up into the center bottom of the pole. If a concrete base is being poured to support the 3703 EV charger, the suggested size should be 3'x3'x4" minimum. However, whatever the mounting surface and method, it should conform to town/state/federal building codes.

Note: Do not mount the 3703 pole directly to asphalt. If required, cut a section of the asphalt and pour a concrete base.

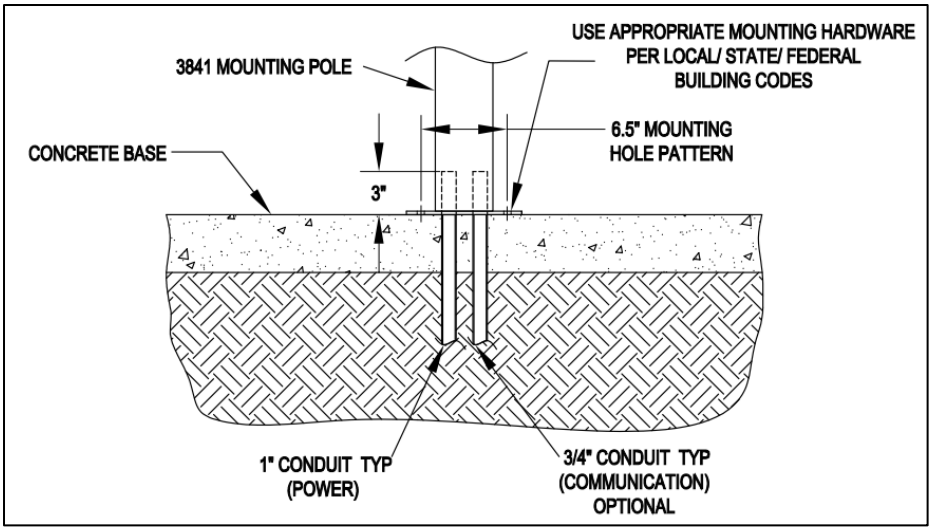

Figure 4A

In areas where frost is a concern, you can also follow these steps to mount the pole utilizing an 18" wide Sonotube, Schedule 40 conduit, four 12" long, 1/2" J-bolts, rebar, #8 bare copper wire, and cast-in-place mounting base as per dimensions shown in Fig 4B. Conduit considerations are the same as above.

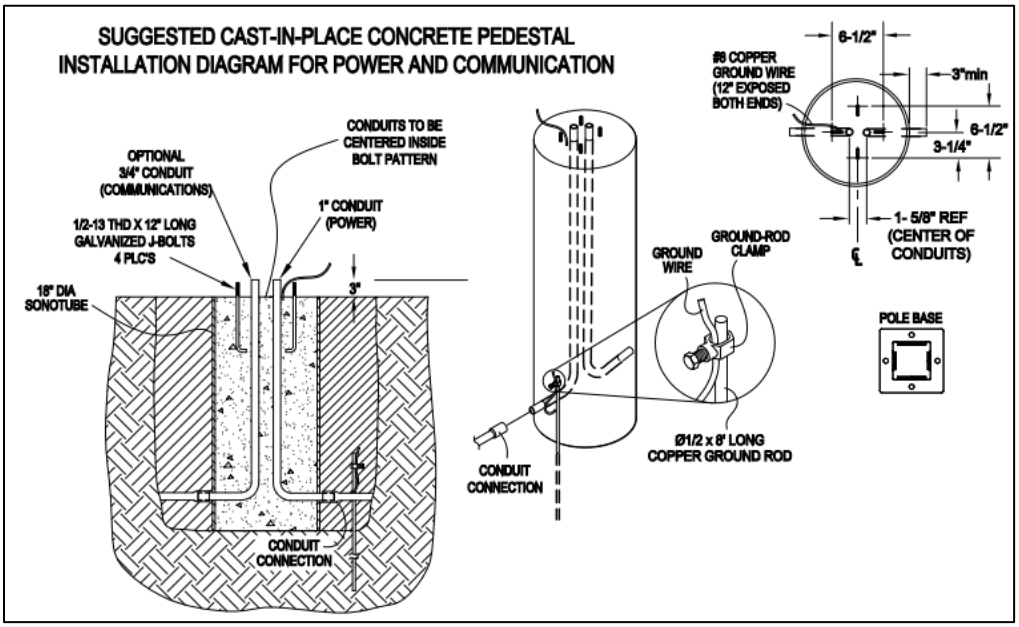

Figure 4B

Wall-Mounting

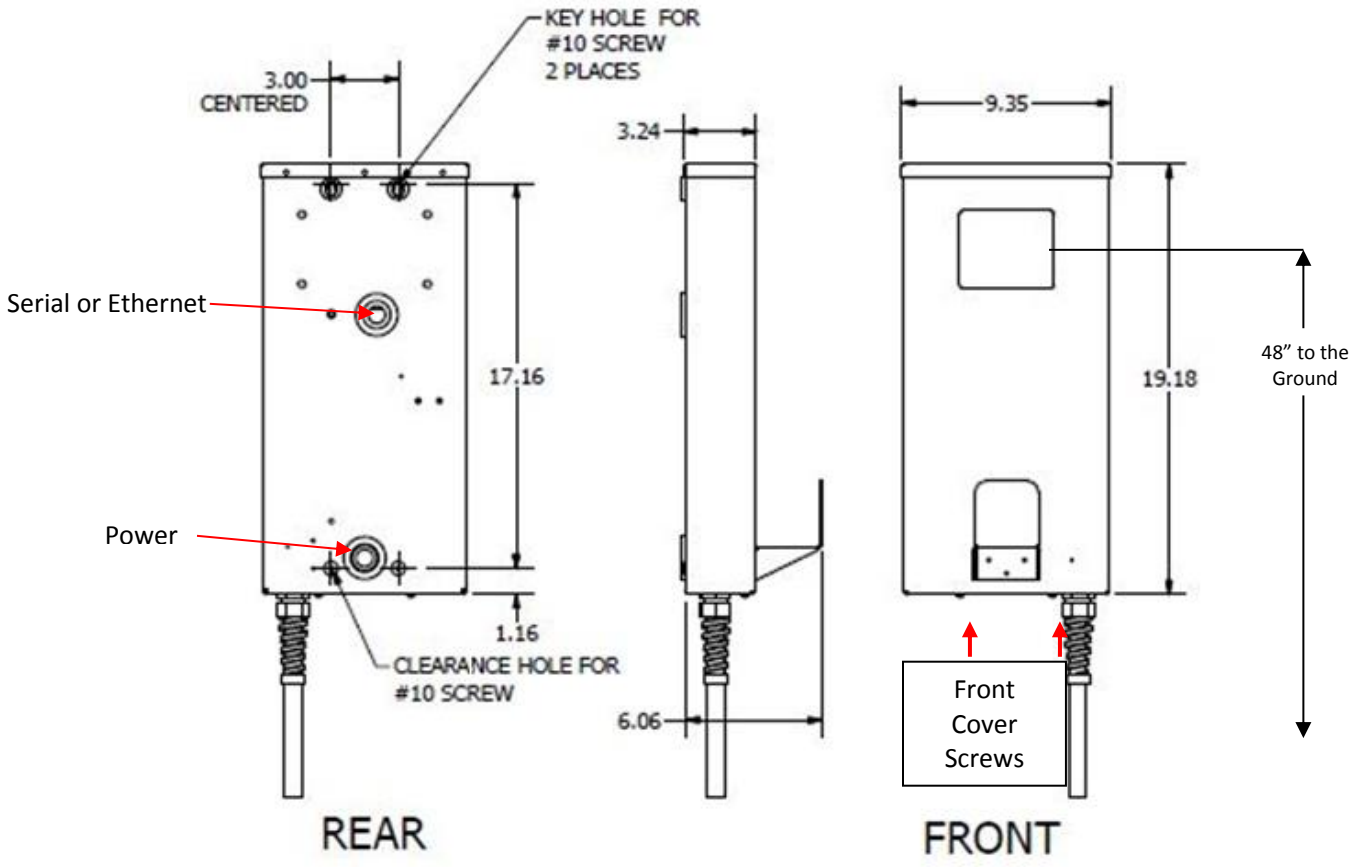

Figure 5

1. Position the 3703 so that the center of its window is 48 inches from the ground (**Figure 1**).
2. Mark and drill 4 holes into the wall, duplicating the pattern shown in **Figure 5**. The mounting hardware/holes should be designed around #10 screws.
3. AC wiring from the breaker panel is typically brought up into the bottom hole. If any communication to the 3703 is serial or Ethernet, it should be brought up into the top hole.

   Note: Wall anchors and #10 screws are customer-supplied and dependent upon wall type. These can be purchased at any reputable building supply store. Ensure that all parts meet or exceed local building codes for quality. The Terminal Block and Ground Bar can accommodate wires from 6-14 gage.

4. Place the EVSE on a table and remove its front cover by removing two screws from the bottom-front of the EVSE (**Figure 5**).
5. Carefully lower and back the cover away from the main unit a few inches so as not to damage the connecting ground wire. When accessible, disconnect the ground wire from the cover.
6. Feed the cables through the appropriate holes in the EVSE, align the keyholes on the 3703's back panel with the holes on the wall and screw the back panel into the wall.
7. Wire the EVSE for power. EVSE red and black wires from the service panel enter through the lower hole and are connected to the GFCI Module (**Figure 4**). Torque the wires to 18.5 in-lb (**Figure 5**).
8. Each of the green ground wires from the service panel connect to the ground bar on the EVSE's back panel (**Figure 5**).
9. Proceed to *Wiring the EVSE Serial Connection*.

Installation

Wall-mounting

CAUTION:

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

ATTENTION:

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

1. Remove the front cover by removing two screws from the bottom-front of the EVSE (**Figure 5**). **Note**: Hold the cover as you remove the screws so it doesn't fall.
2. Carefully lower and back the cover away from the main unit a few inches so as not to damage the connecting ground cable. When accessible, disconnect the cable from the cover.
3. Partially install two mounting screws to the wall in the top holes, leaving adequate space between the heads and wall to hang the top of the EVSE using the key holes. Tighten the screws only enough to support the weight of the 3703 EVSE.
4. Hang the EVSE on the top two mounting screws.
5. Align the EVSE for proper insertion of the bottom mount screws and insert them.
6. Ensure the EVSE is completely level and fully tighten all four screws to securely fasten the 3703 EVSE to the wall.
7. Threading by hand at first, replace the two cover screws and washers removed earlier. Do not crossthread or overtighten with power tools.
8. Wire the EVSE for power. EVSE red and black wires from the service panel enter through the lower hole and are connected to the GFCI Module (**Figure 9**). Torque the wires to 18.5 in-lb (**Figure 10**).
9. Each of the green ground wires from the service panel connect to the ground bar on the EVSE's back panel (**Figure 9**)
10. Proceed to *Wiring the EVSE Serial Connection*.

Pole-Mounting

1. Place the EVSE on a table and remove its front cover by removing two screws from the bottom-front of the EVSE (**Figure 6**).
2. Carefully lower and back the cover away from the main unit a few inches so as not to damage the connecting ground cable. When accessible, disconnect the ground cable from the cover.
3. Ensure the power wires and serial cable are threaded through their appropriate holes.
4. Screw two #10 screws and their two lock washers (**Figure 7**) into the top two holes of the pole (**Figure 8**). Do not tighten. Leave space to hang the 3703 back panel between the washers and the screws.
5. Feed the wires/cable through the appropriate holes in the EVSE, align the keyholes on the 3703's back panel with the screws and hang the unit on the screws, ensuring the cup washers and screws are separated by the back panel.
6. Screw two #10 screws and two cup washers into the bottom two mounting holes of the 3703's back panel. Tighten the screws.
7. Tighten the two top screws.
8. Repeat Steps 1-7 for the second EVSE.

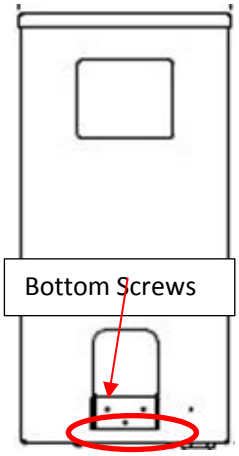

Figure 6

Figure 8

Figure 7

Wiring the EVSE for Power

1. If not done already, thread the two sets of red and black power wires from the power conduit through the lower side access holes (**Figure 9**) of the pole and into each of the EVSEs.
2. Wire the EVSEs. EVSE red and black wires from the service panel enter through the lower hole and are connected to the GFCI Module (**Figure 9**). Torque the wires to 7 in-lb (**Figure 10**).
3. Each of the green ground wires from the service panel connect to the ground bar attached to the pole (**Figure 12**). **Note**: The Terminal Block and Ground Bar can accommodate wires from 8-20 gage.
4. Install two additional ground wires to this ground bar and insert them into the lower power hole. Secure them to the ground bar on the GFCI (**Figure 11**). All ground wires should be torqued to 20 in-lb.

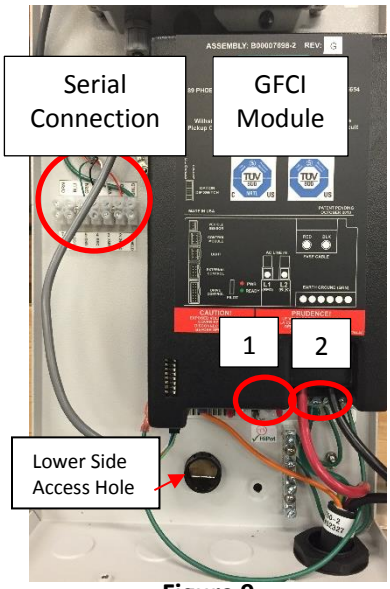

Figure 9

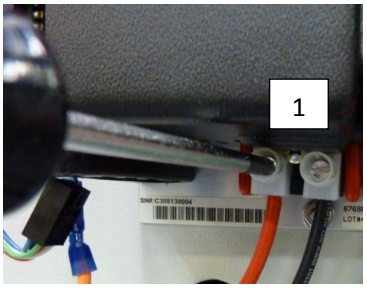

Figure 10

Figure 12

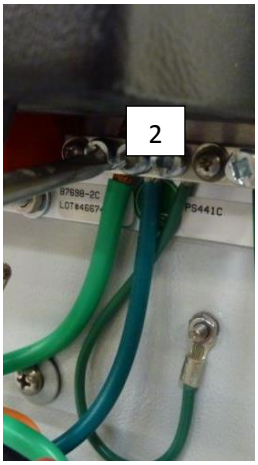

Figure 11

Wiring the EVSE Serial Connection

Feed the two Payment Module serial cables from the serial conduit into the upper side hole of the pole.

Keeping in mind that the **right EVSE is # 1**, attach each individual wire of the Payment Module serial cable to its corresponding, pre-wired counterpart in the 7-position Euro-Block, which represents the connection to EVSE 1 (**Figure 13**).

Position	Function	Wire Color (As Depicted. **Reference Only**!)
1	Not Used	Not Used
2	24 VDC	Red
3	TXD / XMIT	White
4	RXD / REC	Black
5	Ground	Green and Shield
6	(Not Used)	
7	(Not Used)	

Figure 13

1. Repeat **Step 2** to wire **EVSE # 2's** Payment Module serial cable to its corresponding, pre-wired counterpart in the 7-position Euro-Block, which represents the connection to EVSE 2.

Final Wiring Between Payment Module and EVSE:

Payment Module Wiring			EVSE Wiring	
Position	Function		Position	Function
1	24 VDC		1	Not Used
2	REC (**in from EVSE**)	←	2	24 VDC
3	XMIT (**out to EVSE**)	→	3	TXD / XMIT (**out to Payment Module**)
4	GND		4	RXD / REC (**in from Payment Module**)
5	SHIELD		5	Ground

2. Attach the ground wires to the EVSE covers and mount them on the EVSEs. Threading by hand, replace the two cover screws and washers removed earlier. Do not overtighten with power tools.
3. Attach the cover (**Figure 14**) to the pole's hand hole (**Figure 12**), using the supplied screws.

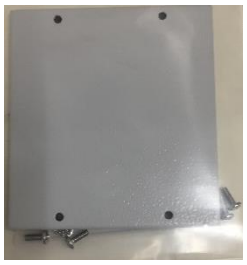

Figure 14

Installation Notes

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

Circuit _____
Panel Location _____
Breaker Number _____
Breaker Rating _____

EVSE Station 1 Installer ID _____
Location _____ Company _____
Number _____ Name _____
IP Address _____ Tel. No. _____
Date installed M D YR

Circuit _____
Panel Location _____
Breaker Number _____
Breaker Rating _____

EVSE Station 2 Installer ID _____
Location _____ Company _____
Number _____ Name _____
IP Address _____ Tel. No. _____
Date installed M D YR

Circuit _____
Panel Location _____
Breaker Number _____
Breaker Rating _____

EVSE Station 3 Installer ID _____
Location _____ Company _____
Number _____ Name _____
IP Address _____ Tel. No. _____
Date installed M D YR

Circuit _____
Panel Location _____
Breaker Number _____
Breaker Rating _____

EVSE Station 4 Installer ID _____
Location _____ Company _____
Number _____ Name _____
IP Address _____ Tel. No. _____
Date installed M D YR

Options and Settings

Dip Switch Settings

Each Model 3703 is equipped with an 8-position dip switch on the GFCI (**Figure 13**), to personalize each installation.

Service panel limitations may require the EVSE to limit the current to the electric vehicle and to reduce the size of the service breaker from 40 amps to 30 amps. The model 3703, as shipped, is set to instruct the electric vehicle that it can draw up to 30 amps (a 40 amp circuit breaker). If only a 30 amp breaker is available, Switch 8 must be closed, reducing the maximum charge current to 24 amps.

Switch 6 should be set to the open position for most applications. It applies for situations where external authorization of EVSE operation is required prior to use of the charging system (e.g. parking payment systems). The open position allows the charging system to operate automatically when the J1772 plug is inserted into the vehicle. The closed position for switch 6 requires that an external authorization be received prior to the initiation of charging.

Again, Switch 7 should be set to the open position for most applications. For those situations where authorization is required prior to the initiation of charging (reference switch 6), the open position for switch 7 enables the inactivity timer which establishes a 60 second timeout for the authorization. In other words, if the J1772 plug is not engaged in 60 seconds, a new authorization must be obtained. The closed position for switch 7 disables the inactivity timer and allows an indefinite period for the J1772 plug to be engaged.

Switch 3 puts the EVSE into a test mode used for connecting to a Payment Module via a ZigBee mesh network. See the *3725-UG-002 Rev A Payment Module User Guide* for information about adding the 3703 to the network. **OPEN** = Not in Test Mode; **CLOSED** = In Test Mode

Switches 1, 2, 4 and 5 are not currently used and are reserved for future applications.

SW8
*Open 40A Breaker
Closed 30A Breaker

SW7
*Open Inactivity Timer Enabled
Also EVSE Activated by Local "On" Key (No Payment Module)
Closed Inactivity Timer Disabled
Also EVSE Activated by Payment Module
SW6
*Open Automatic Mode Enabled
Closed Automatic Mode Disabled (Authorization Required)
SW3
*Open Not in Test Mode
Closed Test Mode for adding to ZigBee Network

SW 1, 2, 4, 5
For Future Use

*DEFAULT SETTINGS

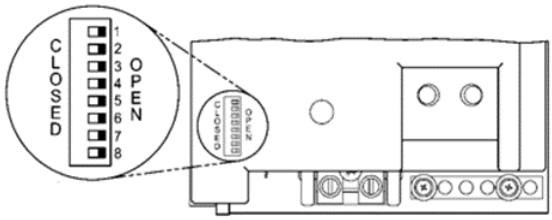

Figure 13

Remote Controls

External Control Input (J3)

Remote controls are wired to an eight pin connector, marked External Control.

A contact closure between pin numbers 1and 2 will place the EVSE in standby mode, reducing the available power to the electric vehicle to 6 Amps.

A contact closure between pins number 3 and 4 will turn off power to the connected electric vehicle.

A 0 to 3.2vdc signal between pin 5 and pin 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 optional I/O connector card (Model 3728-001) should be installed, making wiring easier.

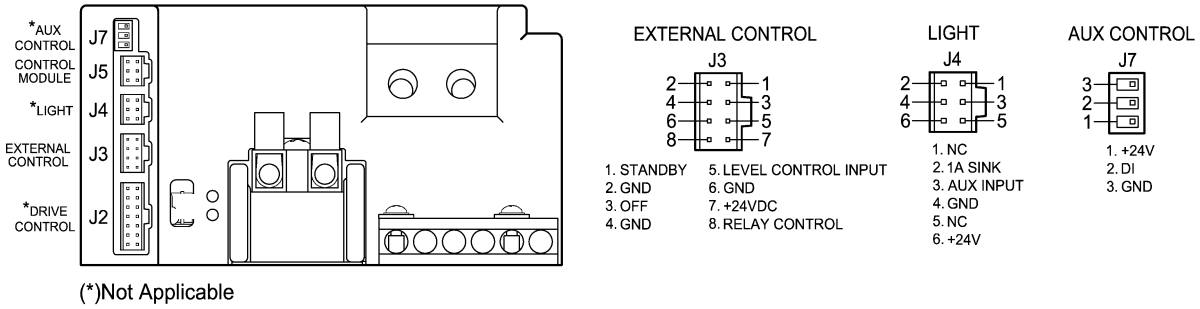

Figure 14

Operation

Note: The following operation assumes all steps with the Payment Module have been completed.

When you are ready to charge your Electric Vehicle's battery:

1. Open the lid to your vehicle's charging receptacle.
2. Observe the Control Panel on the front cover of the EVSE (Fig.10). The blue "Power" LED is lit.
3. Remove the charging cable from your Model 3703's holster and plug the J1772 connector into the charging receptacle in your electric vehicle. Observe the amber "Connected" LED turn on briefly and the green "Charging" LED begin flashing. Your vehicle's battery is now charging.
4. The green "Charging" LED turns solid when the vehicle's battery is fully charged. When charging is complete, disconnect the J1772 connector from the electric vehicle's charging receptacle by pressing the button on top of the charging connector and then pulling out. Observe that the amber "Connected" LED remains off and the green "Charging" LED turns off. Only the blue "Power" LED remains on.
5. Replace the cable on the EVSE by wrapping the cable and placing it back in its holster.

NOTE: If you remove the charging cable from the electric vehicle's receptacle before the battery is fully charged, the charging process automatically and instantly terminates. Power is removed from the connector prior to its full removal from the receptacle as a safety precaution. The charging process will automatically and instantly resume if the charging cable is again plugged into the electric vehicle's receptacle. There is no time limit for this reconnection to occur.

When power is applied to the electric vehicle, the Model 3703 monitors the current being drawn by the EV. Should the current exceed the maximum levels set by the breaker switches, the Model 3703 will disconnect the power from the EV and the red "Problem" LED will turn on. If there was a ground fault, the EVSE will attempt 3 closures after a short delay. There is no re-closure with an over-current trip.

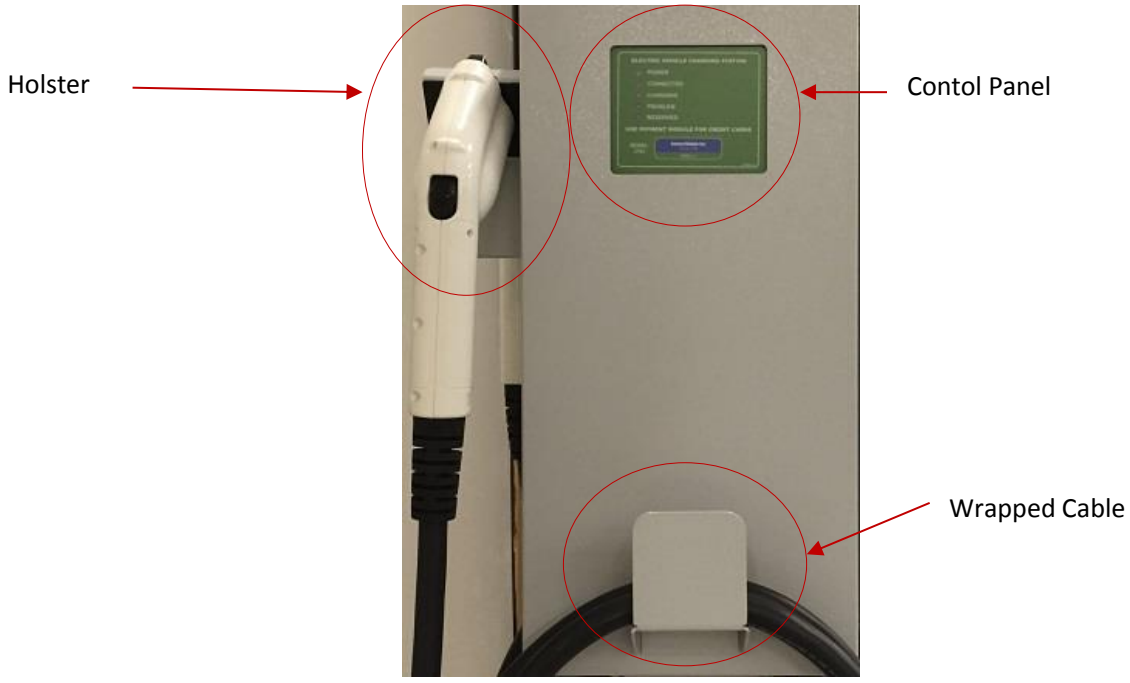

Figure 15

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. Refer to Figure 12 for Control Module LED Status Indications should a fault occur during installation or operation.

The basic layout Status Indicator Control Module is described below. The unit is equipped with five status LEDs:

Blue: Indicates primary power is applied.

Yellow: When EVSE is ready to charge the car, it starts blinking indicating the cable 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, on page 26).

Orange: When lit the EVSE has been reserved for use by another vehicle.

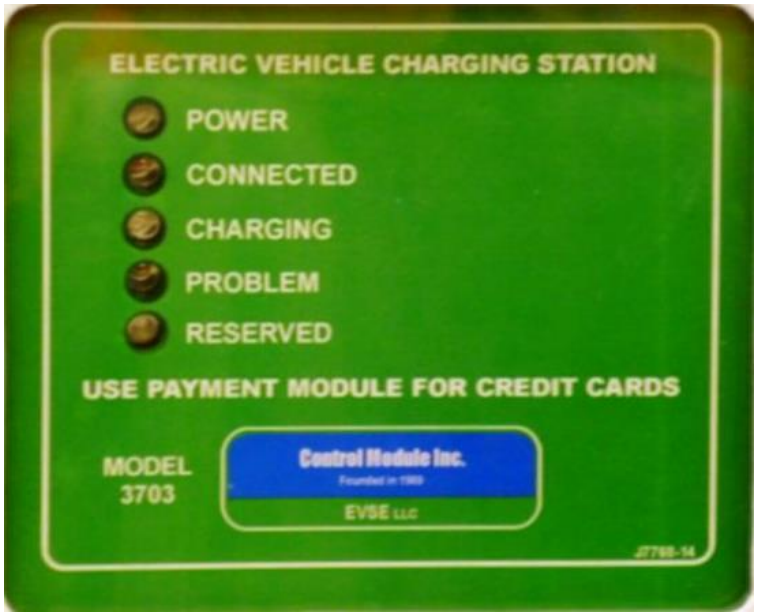

Figure 12

See the following page for a complete Status Indicator chart.

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 Line Voltage is between 208-240VAC Ground Connection Present	ON	X	X	X
3	Waiting to connect to EV	ON	SF	X	X
4	Cable is connected	ON	ON	X	X
5	Random start time activated – Charging begins in 2-5 minutes	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/stand by 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	Not Applicable	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	Not Applicable	ON	SF	X	SF
9	Not Applicable	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:

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

Legend

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

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 starting any electrical work.

AVERTISSEMENT:

Assurer l'alimentation électrique a été fermeture à la source avant de commencer les travaux d'électricité.

Should the Model 3703-001 EVSE have 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

A Subsidiary of Control Module, Inc.

89 Phoenix Ave., Enfield, CT 06082

Local Phone: 860.745.2433

Toll Free Phone: 800.722.6654

evse.controlmod.com