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Installation Manual

EV METER SOCKET ADAPTER V1.0

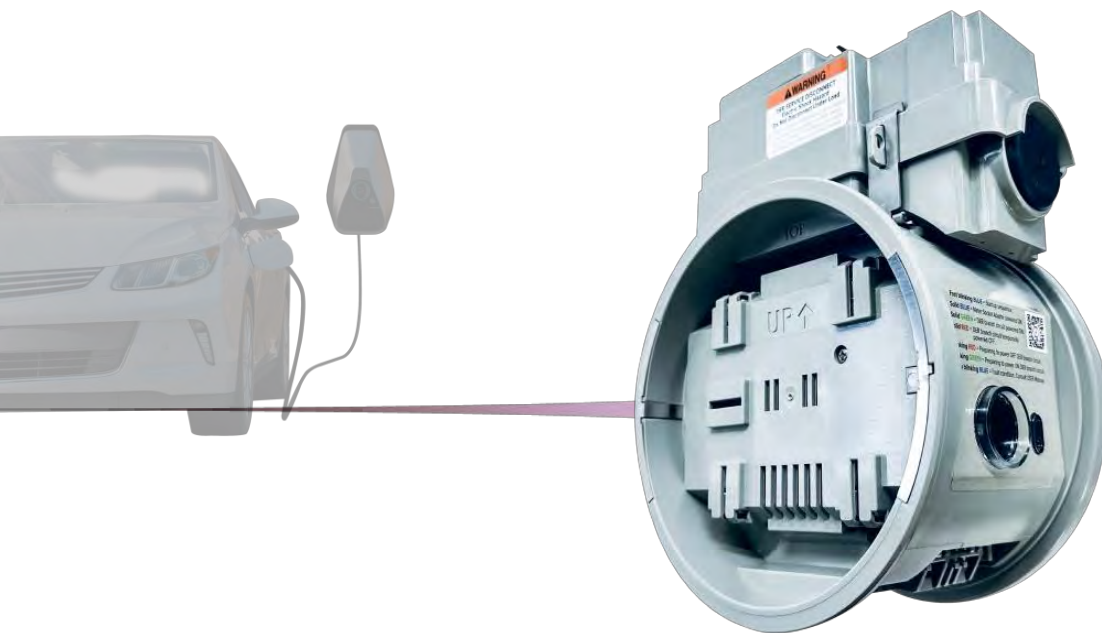


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SYMBOLS USED IN THIS MANUAL



Designates information highlighting the risk of death, serious injury, or damage to property.



Designates helpful information.

INTRODUCTION

RevA of this document is the initial release with ETL listing. It is the responsibility of the party (“the installer”) installing, replacing, and/or servicing the Electric Vehicle Meter Socket Adapter (EV MSA) to obtain and follow the most current installation document, found here:

LINK: <https://connectder.com/installers/>

QR CODE



Intertek grants its listing “ETL Listed Mark” after verifying that products meet a high level of safety and quality, and conform to numerous codes and standards, including the 2023 edition of the National Electrical Code (NEC).

The installer assumes all responsibility and risk associated with the safe and intended use of the EV MSA as expressed in the current installation document. Any deviation from the methods or applications in this manual will violate the product’s Intertek listing, NEC Article 110.3(B), and void the product warranty.

Contact ConnectDER, Inc. at support@connectder.com for technical support with installing, replacing, and/or servicing the EV MSA. Always follow the requirements of the serving electric utility and Authority Having Jurisdiction (AHJ).

Please read these instructions in their entirety before installing an EV MSA.



NOTE – The EV MSA branch circuit is recommended for use with a maximum 32A, 240V continuous load such as an electric vehicle charger. The EV MSA uses 32 amps as the benchmark to safely limit the whole-house current. The 32-amp manufacturer’s setting is non-adjustable. PATENT PENDING. See <https://connectder.com/patents>.



WARNING – The ConnectDER EV MSA contains live parts capable of causing death, injury, or damage to property. Wear appropriate PPE and follow your employer’s safety procedures. Do NOT connect critical loads to the EV MSA.

CAUTION – The EV MSA is only intended for installation on the supply side of the service disconnecting means. The EV MSA must be installed only with the junction box at the top and the whole-house MAIN circuit breaker at the bottom. Do not install the EV MSA in any other orientation. The installer must furnish an electrical insulation blanket and hot jaw safety cover mentioned in the installation steps in this document. Installation and servicing of the EV MSA, associated wiring and interconnections must be performed only by qualified personnel.

The EV MSA is for use with 240v, single-phase DER branch circuit loads/sources such as Electric Vehicle Supply Equipment (EVSE) and/or Listed uni- or bi-directional interactive equipment, **maximum 32 amps continuous recommended**. If using interactive EVSE with a power export function that serves as a bidirectional power feed, it:

- shall be listed and marked as suitable for that purpose,
- must comply with Article 705 of the NEC,
- may be used only as an interactive, grid-tied system (vehicle-to-grid, or V2G), and
- shall not be used for backup power to the premises via the EV MSA.

Comply with national and local codes for rules governing backfeeding power. Follow the serving electric utility’s meter removal and installation rules. The installer must furnish and use 3/4” trade size liquid-tight flexible conduit complying with the Standard for Liquid-Tight Flexible Metal Conduit, UL 360, or the Standard for Liquid-Tight Flexible Nonmetallic Conduit, UL 1660, and fittings complying with UL 514B. The MSA has no Wi-Fi or other communications capability; it provides a power connection for external equipment.

The EV MSA contains no ground fault circuit interrupter (GFCI) protection and **must be hardwired only** (not cord-and-plug-connected) to Electric Vehicle Supply Equipment. The EV MSA may connect other types of loads, or a combination of sources and loads.

Turn off the power supply and all other potential electricity sources before installing or servicing the EV MSA. The graphics in this document mostly depict **deenergized** equipment.

Use a calibrated voltmeter to confirm conductive parts are deenergized before touching. Install the EV MSA using factory-insulated tools.

Do not alter the EV MSA or any other equipment or conductor in a manner that would void its listing or warranty. Do not attempt to replace the integrated circuit breaker(s) or modify any other components. ConnectDER recommends practicing the installation and wiring of the EV MSA using deenergized equipment before proceeding with live field installations.

EV MSA FEATURES

- Readily accessible supplemental whole-house MAIN circuit breaker (located at the bottom of the MSA) for overcurrent protection rated 100 or 125 amps with 22k AIC.
- Readily accessible DER branch circuit service disconnect circuit breaker (located at the top of the MSA) rated 40 or 60 amps and 22k AIC.
- Quick-connect and quick-release weatherproof junction box accommodates field wiring from the left or right side. Utility meter technicians can safely remove the junction box for inspection and servicing, leaving the DER branch circuit field wiring intact.
- Lockout/tagout capability for safety and security.
- Compatible with ringless, ring-type, and horn/lever bypass meter sockets* ANSI form 2S, up to 200 amps maximum. (It is permissible to use a 200 amp meter socket ahead of a 100 or 125-amp service. The EV MSA is intended for use with 100 or 125-amp services.)
- ConnectDER may publish a future technical note covering use cases for 150 or 200-amp services with a load calculation according to NEC Article 220.

WARNING – *For lever bypass sockets, ConnectDER recommends:



- Locking out alternate/backup sources of power.
- Removing power from the premises loads and opening the main service disconnect.
- Actuating the lever bypass to facilitate meter removal.
- Removing the meter.
- Positioning the lever bypass to deenergize the load-side meter socket jaws.

EV MSA OPERATIONAL OVERVIEW

The electrical utility supplies residential single-phase services with two ungrounded conductors, commonly known as line 1 and line 2 (as well as a grounded, or neutral conductor). The EV MSA monitors the whole-house electrical current on each of the ungrounded conductors individually.

The EV MSA has a safety feature that temporarily suspends power to the DER branch circuit (i.e., the EV charger or other load) while overall home consumption is high (80% or more, for 15 minutes accumulated, or 95% or more, for 30 seconds accumulated, of the whole-house MAIN circuit breaker in the MSA, in amperes, **ON EITHER LINE 1 OR LINE 2**). This prevents overloading the electrical service and ensures compliance with the main electrical service rating (100 or 125 amps).

Power is automatically restored to the DER Branch Circuit Breaker after home consumption drops to an adequate level for at least 15 minutes.



NOTE – Most EVSE automatically resume charging after power is interrupted and restored. Please review the manufacturer's EVSE/EV charger documentation for details.

The EV MSA has a higher chance of maintaining power to the DER branch circuit when the electrical load is balanced, meaning the current on line 1 and line 2 are close to equal.

A balanced electrical service provides the best chance to keep the EV charger or other load energized. Consult a qualified electrician to inspect your electrical service and make appropriate recommendations.

The EV MSA contains a supplemental whole-house MAIN circuit breaker to protect the home's electrical service as a redundant feature to the integrated DER branch circuit control mechanism.

Follow the instructions in the remainder of this document to install and operate the EV MSA.

EV MSA KEY COMPONENTS

The key components of the MSA are shown in **Figure 1**. Note that the junction box is reversible and accommodates conduit entry from the left side or the right side.

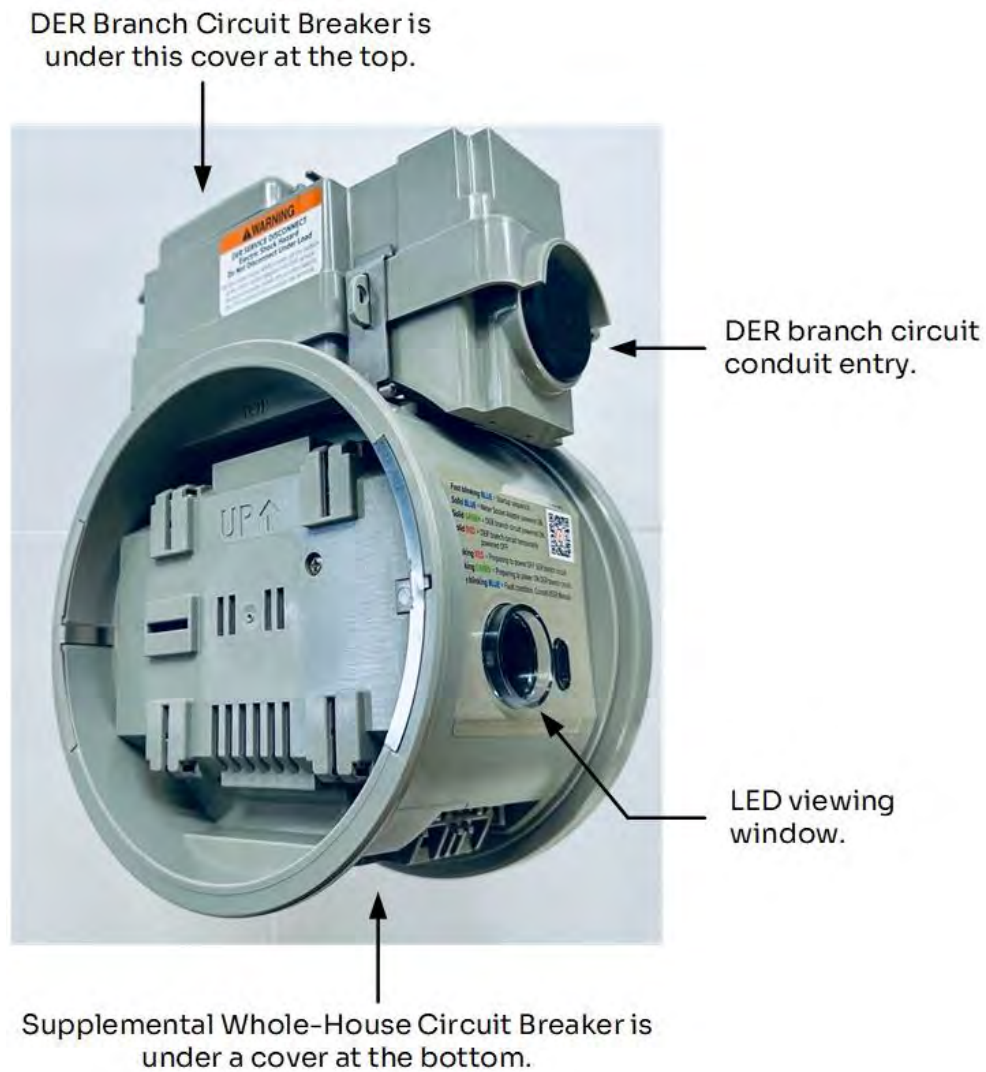


Figure 1 – EV MSA Key Components



LED STATUS LIGHTS

Table 1 describes the LED behavior when the EV MSA is powered on and the whole-house current is at a safe level to energize the branch circuit.

| LED LIGHTS | STATUS |
|---|--|
| Blinking BLUE | EV MSA is starting up. |
| Solid RED ON | DER Branch Circuit is powered OFF. The EV MSA is confirming that whole-house current is at a safe level. |
| AFTER FIVE SECONDS: | |
| Solid BLUE ON | EV MSA is powered ON. |
| Solid RED ON | DER Branch Circuit remains powered OFF. |
| Blinking GREEN | DER Branch Circuit will power ON soon. Whole-house current is adequately low (less than 80% of the service rating, minus 32 amps). |
| AFTER ANOTHER 30 SECONDS AND AN AUDIBLE CLICK – NORMAL OPERATION: | |
| Solid BLUE ON | EV MSA is powered ON. |
| Solid GREEN ON | DER Branch Circuit is powered ON. Power is available for EV charger or other load/source. |

Table 1 –EV MSA Startup with Normal Whole-House Current

Table 2 describes the LED behavior when the whole-house current exceeds 80% or more of the whole-house MAIN circuit breaker rating. The EV MSA safety features are activated to temporarily suspend and reconnect the branch circuit power:

| LED LIGHTS | STATUS |
|---|---|
| Solid BLUE ON | EV MSA is powered ON. |
| Solid GREEN ON | DER Branch Circuit is powered ON. Power is available for EV charger or other load/source. |
| Blinking RED | When the whole-house current has reached 80% to 95% of the whole-house MAIN circuit breaker rating, the DER Branch Circuit will power OFF in approximately 15 minutes accumulated time. When the whole-house current has reached 95% or more of the whole-house MAIN circuit breaker rating, the DER Branch Circuit will power OFF in approximately 30 seconds accumulated time. |
| AFTER THE APPLICABLE ACCUMULATED TIME AND AN AUDIBLE CLICK: | |
| Solid BLUE ON | EV MSA is powered ON. |
| Solid RED ON | DER Branch Circuit is temporarily powered OFF. Power is removed from EV charger or other load/source. |
| AFTER WHOLE-HOUSE CURRENT DROPS TO A SAFE LEVEL: | |
| Solid BLUE ON | EV MSA is powered ON. |
| Solid RED ON | DER Branch Circuit remains temporarily powered OFF. |
| Blinking GREEN | Whole-house current drops. (80% minus 32 amps, or less). DER Branch Circuit will power ON soon. |
| AFTER 15 MINUTES AND AN AUDIBLE CLICK - RETURN TO NORMAL OPERATION: | |
| Solid BLUE ON | EV MSA is powered ON. |
| Solid GREEN ON | DER Branch Circuit is powered ON. Power is available for EV charger or other load/source. |

Table 2 – EV MSA Safety Feature - Branch Circuit Suspension and Reconnection

WIRING SCHEMATICS

ONE-LINE SYSTEM DIAGRAM

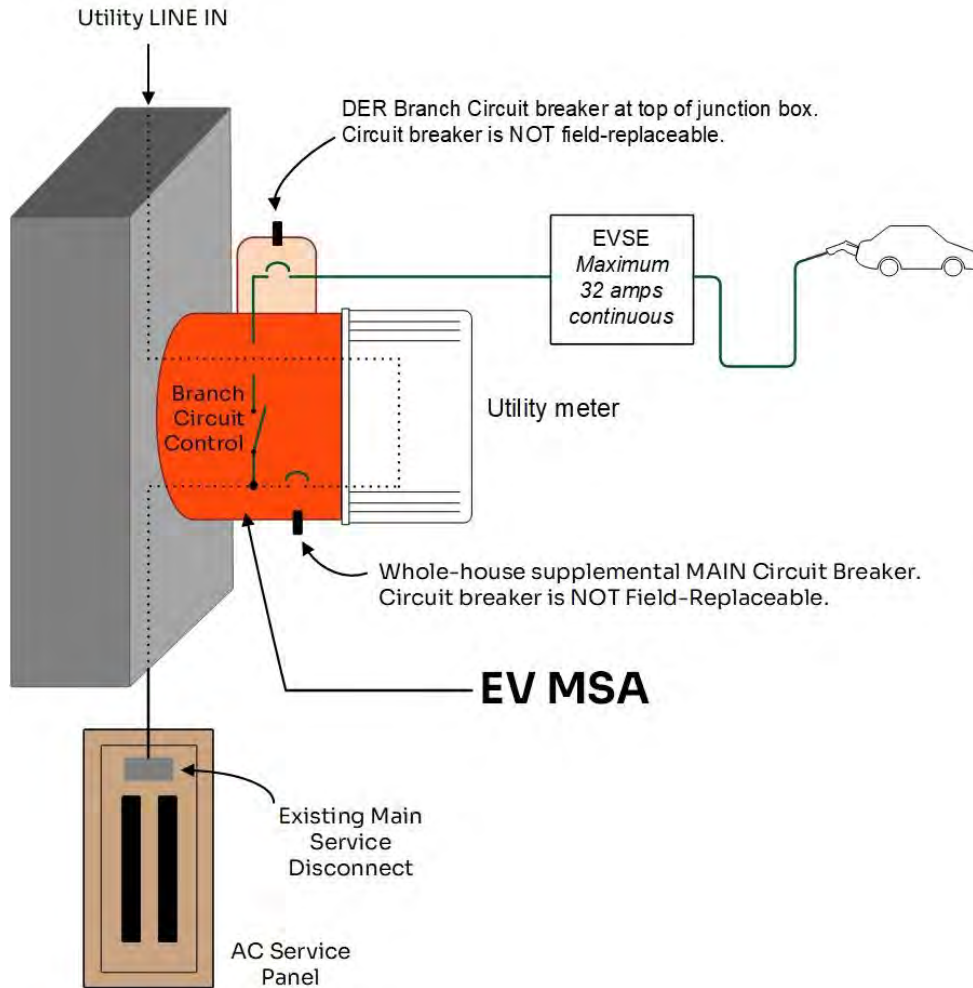


Figure 2 – One-Line System Diagram



NOTE – The EV MSA creates a supply side (of the main service disconnect) interconnection to the load side of the billing meter. The EV MSA contains a factory-installed neutral-to-ground bond.

THREE-LINE WIRING DIAGRAM

Install field wiring from the EV MSA to the EVSE according to the manufacturer's instructions and local codes.

The EV MSA junction box contains a neutral terminal if needed.

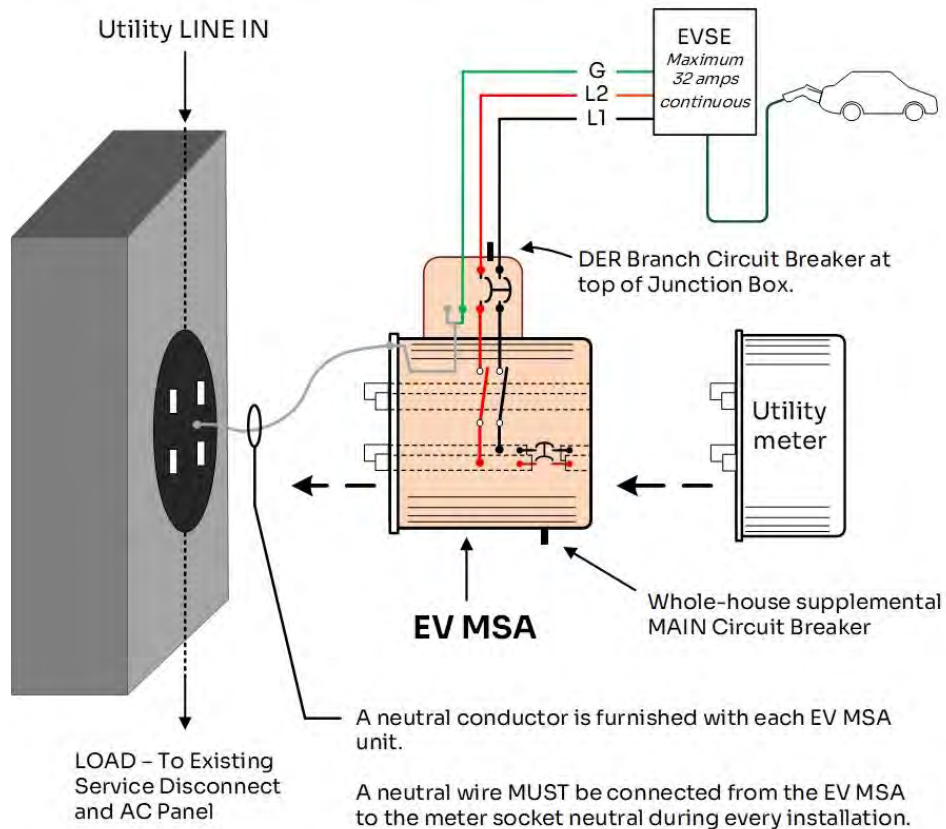


Figure 3 - EV MSA Three-Line Wiring Detail

WARNING – The EV MSA is only suitable for use on the supply side of the service disconnect. Only install the EV MSA with the junction box at the top and the whole-house supplemental MAIN circuit breaker at the bottom. Do not install the EV MSA in any other orientation.



The EV MSA contains no ground fault circuit interrupter (GFCI) protection and must be hardwired only to Electric Vehicle Supply Equipment (EVSE). Do not use cord-and-plug-connected EVSE.

BOX CONTENTS

The package contains the following items. Verify the contents are complete before proceeding with installation:

| Qty. | Item |
|------|--|
| 1 | EV MSA (Electric Vehicle Meter Socket Adapter). |
| 1 | Quick-connect and quick-release junction box, assembled, with (qty. 4) 6/32 x 1/4" socket head machine screws and (qty. 1) 3/4" conduit trade size closure plug. |
| 1 | Locking ring for attaching the meter to the MSA. |
| 1 | Neutral pigtail, white, #6 AWG THHN stranded copper. |
| 5 | Tamper-resistant seals. |
| 1 | Accessory bag with installation reminders & QR code link to EV MSA documentation. |
| 1 | Installation Instructions for the electrician (1-page printed front and back). |
| 1 | User Manual for the homeowner (1-page printed front and back). |
| 2 | 6/32 x 1/4" socket head machine screws (spare junction box screws). |
| 1 | 3/4" Type LFNC liquidtight flexible nonmetallic conduit connector. |



NOTE – The EV MSA installer must furnish and use 3/4" trade size liquid-tight flexible conduit complying with the Standard for Liquid-Tight Flexible Metal Conduit, UL 360, or the Standard for Liquid-Tight Flexible Nonmetallic Conduit, UL 1660, and fittings complying with UL 514B.



WARNING – It is the responsibility of the EV MSA installer to ensure a white #6 AWG pigtail is installed with every unit, even if the connected load/source does not require a neutral.

INSTALLATION PREPARATION

SITE INSPECTION

There are several types of residential meter sockets suitable for EV MSA installation. Some common types, namely single gang/standalone, multi-gang, and combination meter socket/load centers are covered here. All three are available in ringless and ring type configurations.

Begin assessing the suitability of a meter socket by ruling out two instances:

1. Rule out shallow meter sockets (sometimes referred to as “button” or puck-type” meter sockets as shown in **Figure 4**. They lack the interior space and means to accommodate connection of a neutral pigtail.



Figure 4 – Shallow Meter Socket (not recommended)

2. Rule out all meter sockets lacking space to install a #6 AWG neutral pigtail, signs of damage, excessive rust, evidence of loose or damaged service conductors, and enclosures loosely secured to the structure.

3. Confirm if the serving electric utility is restricting EV MSA usage to ringless (**Figure 5**) or ring type (**Figure 6**) meter sockets. The EV MSA supports both configurations.



Ringless meter sockets use a small raised flange to hold the meter in place with the cover closed. They do not use a separate locking ring.

Ringless meter sockets are locked through a sliding lever as shown here, or by other means implemented by the utility.

Figure 5 – Single Gang/Standalone Ringless Meter Socket



Ring type meter sockets have an extruded flange on the cover...



...for a locking ring to secure the utility meter.

Figure 6 – Single Gang/Standalone Ring Type Meter Socket

4. Confirm if multi-gang meter sockets (**Figure 7**) are on the utility's approved equipment list. They may present additional neutral wiring and service access issues over single gang meter sockets. ConnectDER recommends researching the manufacturer's documentation for potential compatibility.

EV MSA compatibility with multi-gang meter sockets may be permitted by the utility on a case-by-case basis. Care must be taken to ensure that the EV MSA junction box can be inserted and disconnected (lifted up a minimum of 2") and the field wiring raceway permits access to circuit breakers and the removal of meter socket covers.

Multi-gang meter sockets may accommodate only the top socket, or left & right sockets, or possibly none at all.



Figure 7 – Multi-Gang Meter Sockets

5. Confirm if meter socket/load centers (**Figure 8**) are on the utility's approved equipment list. They may present additional neutral wiring and service access issues over single gang meter sockets. ConnectDER recommends researching the manufacturer's documentation for potential compatibility.



Figure 8 – Combination Meter Socket/Load Centers



NOTE – Then neutral pigtail is normally terminated in the meter socket compartment. The neutral pigtail is required as part of the installation with **every unit**, even if the connected load/source does not require a neutral. It is a component of the EV MSA itself; therefore, it should be permitted in and confined to the meter compartment. Verify with the AHJ and utility if the neutral connection must remain entirely within the meter socket compartment or terminate in the customer premises wiring section.



WARNING – Do not alter the EV MSA or any other equipment in a manner that would void its listing or warranty.

6. An EV MSA shall not be installed on meter sockets already equipped with another socket adapter as shown in **Figure 9**.



Figure 9 – Existing Meter and Meter Socket Adapter

7. Account for other considerations:
 - a. Check with the utility for other potential EV MSA prohibited installations. Do not install an EV MSA where it is subject to physical damage.
 - b. Verify the EV MSA model number(s) approved for use in the utility's service area.
 - c. Verify the EV MSA would be accessible after the installation with adequate working clearance. The EV MSA extends the billing meter approximately 5.9 inches forward from the meter socket.
 - d. Check with the utility and AHJ before installing an EV MSA indoors. The EV MSA contains an overcurrent device. Overcurrent devices are not permitted in bathrooms, over steps of a stairway, and where subject to physical damage.
 - e. Verify the existing meter indicates the service voltage is 240v, 200 amps maximum, 3-wire, ANSI form 2S. **Verify the customer's electrical service is either 100 or 125 amps.**



PACKAGE INSPECTION

1. Inspect the box and verify the contents are complete and in good condition. Take photos and contact ConnectDER at RMA@connectder.com in case of damaged or missing components.
2. Open the circuit breaker access door at the top of the junction box and verify the ampere rating of the DER branch circuit breaker handle matches what was ordered.
3. Open the circuit breaker access door at the bottom of the EV MSA and verify the ampere rating on the whole-house MAIN circuit breaker handle matches what was ordered.

ITEMS REQUIRED FOR EV MSA INSTALLATION



NOTE – The following items must be provided by the installer to install an EV MSA into a meter socket. Use factory-insulated tools wherever possible. Field wiring termination is covered later in this document.

Qty. Item

- | | |
|-------|--|
| 1 | One or more calibrated torque drivers to cover a range from 8 to 45 in-lbs. |
| 1 | 7/64" hex key. |
| 1 | 7/64" hex bit for use with a torque driver. |
| 1 | 1/4" flat blade screwdriver. |
| 1 | 1/4" flat blade bit for use with a torque driver. |
| 1 | Wire cutter. |
| 1 | Knife or wire stripper for #6 AWG. |
| 1 | Calibrated digital volt-ohmmeter or other suitable metering equipment. |
| 1 | Approved wiring connector and tools to terminate the pigtail inside the meter socket, if needed. |
| 1 lot | Additional tamper-prevention seals. Three are furnished with each unit to secure the junction box hasps. |
| 1 lot | Insulation material for the neutral connection in the meter socket, if needed. |
| 1 | "Meter Grabber™" or equivalent tool to safely remove and reinstall the electric meter. |



SAFETY EQUIPMENT

Always follow company and local safety/PPE requirements related to OSHA and NFPA 70E. Installers must be intimately aware of local and company safety/PPE requirements. If safety/PPE requirements are unknown, STOP work. DO NOT proceed further.

Installers must ensure all PPE has the minimum appropriate rating for the application. Example of common PPE and other protective devices are listed below:

| Qty. | Item |
|--------|---|
| 1 | Safety glasses. |
| 1 | Full-face arc flash shield. |
| 1 | Leather/rubber insulated electrical glove kit. |
| 1 lot | Calorie rated clothing for the site's arc flash rating. |
| 1 pair | Safety footwear. |

ConnectDER recommends insulating energized parts within the meter socket using an appropriately rated electrical insulation blanket that can be cut to size, temporarily applied, then taped and/or clamped into place. Installers should also insert a hot jaw safety cover into the MSA line side jaws to avoid contacting live meter socket jaws of the adapter after it is inserted. **(Figure 10)**. Contact the serving utility for other safety tips or procedures.

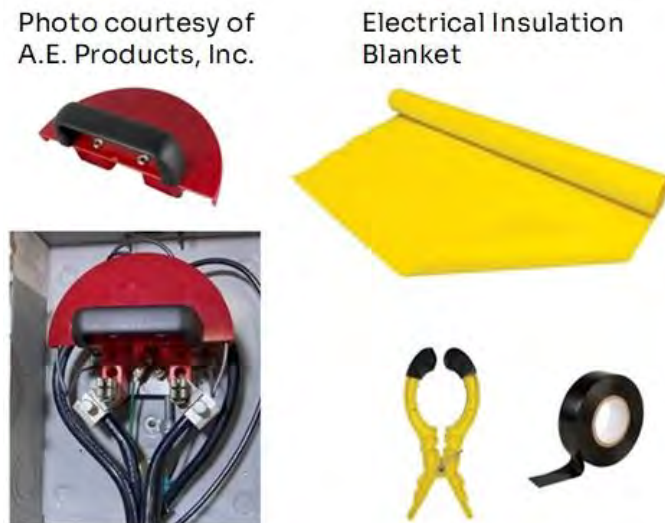


Figure 10 – Protection From Energized Parts

INSTALLATION PROCEDURE



WARNING – EV MSA installation must be performed by qualified personnel only. Electric shock, arc flash hazards, serious injury or death may result if power is not removed prior to the EV MSA installation.

REMOVE THE EXISTING UTILITY METER

In many service territories, the meter must be removed by the utility. An increasing number of utilities are permitting qualified personnel to remove the meter or install the EV MSA. Contact the serving utility to verify the standard practice and/or schedule a visit by the utility or utility-approved personnel to remove the meter.

1. Notify the homeowner that power will be interrupted.
2. **Verify/assist the homeowner in isolating alternate electrical sources such as backup generators, battery systems, etc.**
3. Turn off all power to the loads at the service equipment, then open the main service disconnect to prevent arcing when removing and reinstalling the meter. **The line side meter socket jaws will remain energized unless the utility has disconnected the incoming power at the pole/street/transformer, etc.**
4. Remove all jewelry, put on the appropriate PPE, and follow your employer's safety procedures. Remove the tamper-prevention seals.
5. Remove the locking ring (for ring-type meter sockets). For ringless meter sockets, remove the meter socket cover.
6. For lever bypass meter sockets, actuate the lever to permit meter removal.
7. Using a "Meter Grabber™" or similar tool, remove the utility meter and store it safely.
8. For lever bypass sockets, position the lever bypass to de-energize the load-side meter socket jaws.
9. Inspect the meter socket terminals for loose or broken wires, damaged jaws, and other signs of damage. Confirm the meter socket and service entrance conductors are in good condition. Comply with utility requirements and local codes.

INSTALL THE NEUTRAL LEAD

It is the responsibility of the EV MSA installer to ensure a white #6 AWG pigtail is installed with **every unit**, even if the connected load/source does not require a neutral conductor. Attach the white #6 AWG pigtail (furnished with the unit) from the rear of the EV MSA to a neutral point inside of the meter socket as follows:

1. Put on the appropriate PPE.
2. Install a hot jaw safety cover and/or insulation blanket over live parts if the meter socket must remain energized.
3. Identify the method to terminate the neutral pigtail inside the meter socket. **Figure 11** depicts the interior of a typical 4-jaw meter socket. This model has a single accessory position, circled in yellow. A second accessory position may be available where the blue dot is shown.

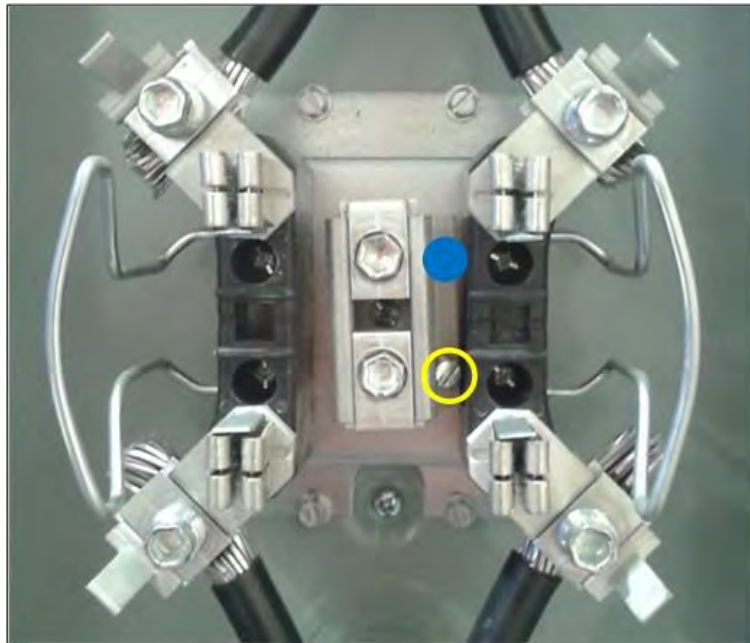


Figure 11 – 4-Jaw Meter Socket

These accessory positions may contain pressure terminals or hardware for the connection of compression lug terminals. Terminate the neutral pigtail in accordance with the manufacturer's torque specifications.

4. Terminate the neutral pigtail to the meter socket using a spare accessory as shown in **Figure 12**. If no spare accessory position is available, terminate the neutral pigtail using an approved wiring termination method suitable for use in meter sockets acceptable to the utility and the authority having jurisdiction (AHJ).

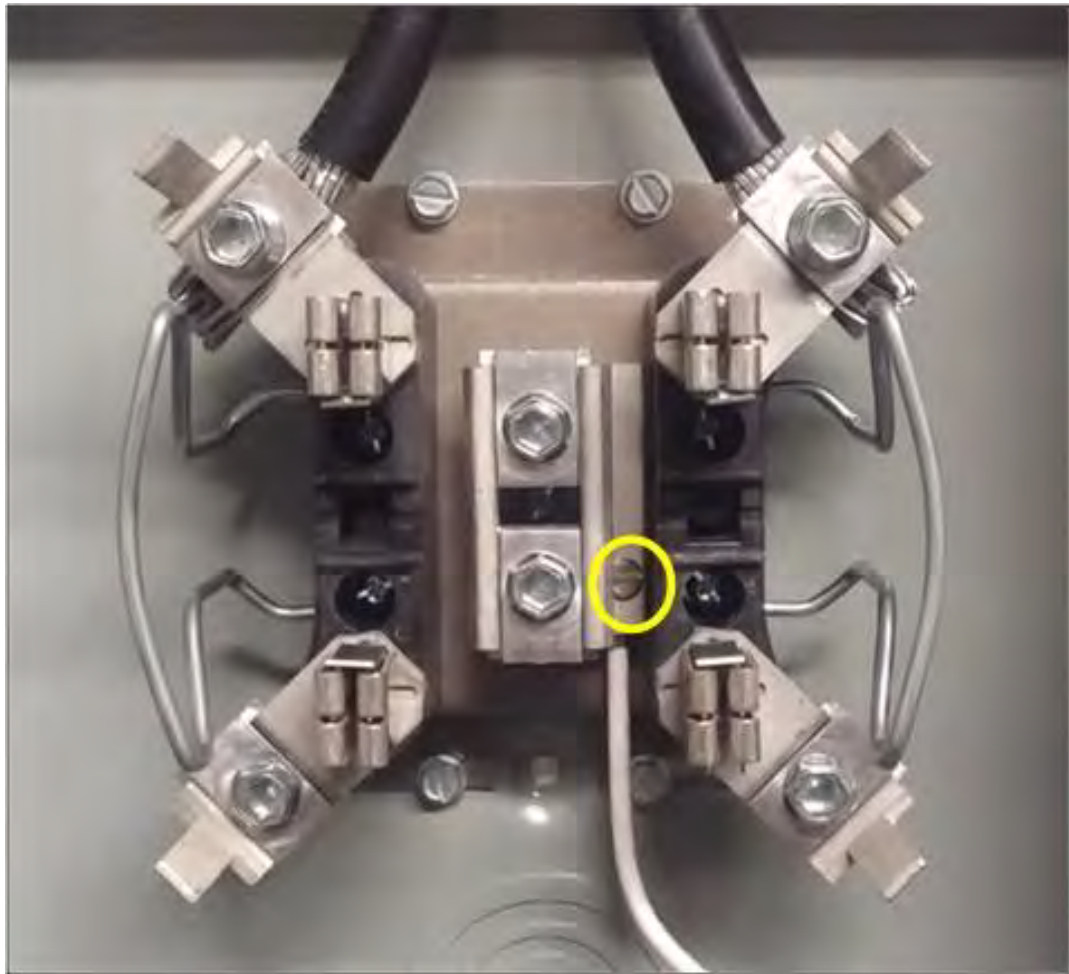


Figure 12 – Terminate the Neutral to the Meter Socket


 NOTE – In case an accessory position is unavailable: As of January 1, 2023, **NEC 230.46 (2020 & 2023)** requires pressure connectors and devices for splices and taps installed on service conductors to be marked “suitable for use on the line side of the service equipment” or equivalent. If no product is available for that use case, the AHJ may permit products that comply with the most recent previous edition of the NEC that was adopted by the jurisdiction per **NEC 90.4(D)**.

Figure 13 shows a parallel tap conductor that is UL Listed as suitable for use on the line side of service equipment.

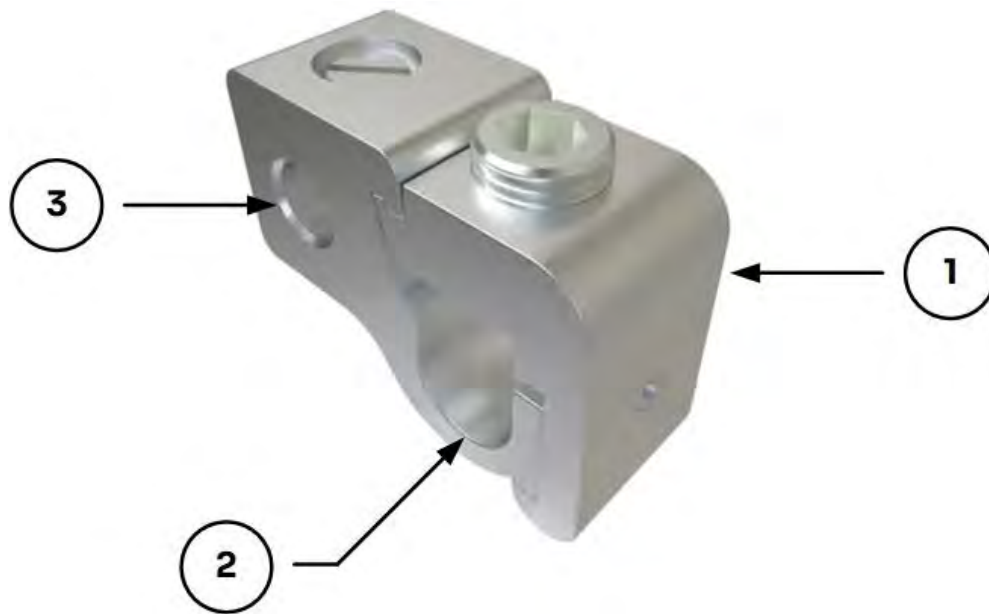


Figure 13 – IlSCO GTA-250-0 Parallel Tap Connector

This parallel tap connector has a removable component (1), leaving an open U-shaped groove (2) allowing the installer to slip the connector around the existing neutral conductor. The removable component is reinstalled and the connection is torqued to the manufacturer’s specifications. The remaining opening (3) accommodates the neutral pigtail supplied with the EV MSA.

Figure 14 shows a similar connector with the neutral pigtail installed.

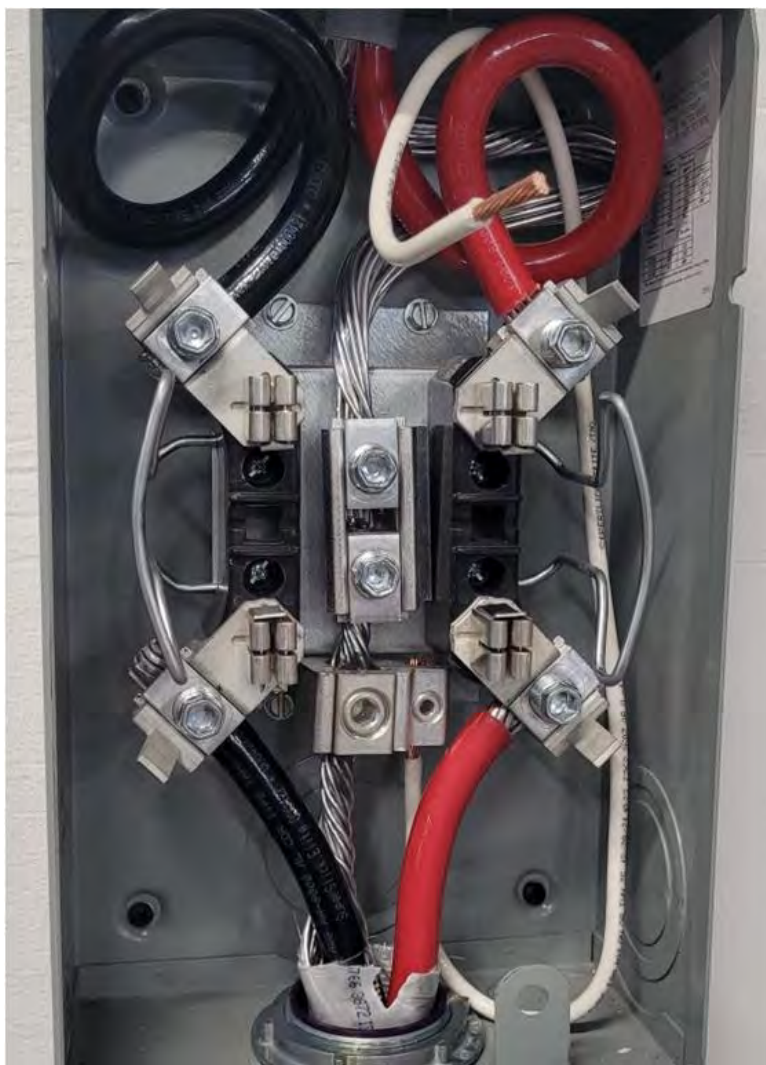


Figure 14 – Parallel Tap Connector Installed



WARNING – It is the responsibility of the installer to verify that a pressure connector or device for splices and taps is suitable for use on the line side of the service equipment when following the 2020/2023 edition of the NEC.

5. Trim, strip, and route the neutral conductor within the meter socket (**Figure 15**) in a manner to avoid damaging the insulation and remain clear of the meter socket jaws. Position the free end to terminate near the top and center of the EV MSA.



Figure 15 – Route the Neutral Within Meter Socket

6. For ring-type meter sockets, reinstall the meter socket cover while routing the neutral lead through the cover opening (**Figure 16**). For ringless meter sockets, connect the neutral lead to the EV MSA before reinstalling the cover (see step #9).



Figure 16 – Reinstall the Ring-Type Cover

7. Remove the junction box from the EV MSA body by hand, pulling it straight upward.
8. Strip ½” (approximately 13mm) of insulation from the neutral pigtail.
9. There are two lug terminals on the rear of the EV MSA. Terminate the neutral pigtail to either lug on the EV MSA using a 1/4” flat blade screwdriver as shown in **Figure 17**. The spare terminal may be used in case the utility or AHJ requires a grounding electrode conductor.



Figure 17 – Terminate the Neutral to the EV MSA

10. Torque the neutral connection at the EV MSA to 45 in-lbs.

8. For ringless meter sockets, reinstall the meter socket cover over the EV MSA, taking care not to cause damage. Tight clearances may necessitate gentle manipulation of the cover around the EV MSA. See **Figure 19**.



Figure 19 – Reinstall the Meter Socket Cover

9. For ring-type meter sockets, install a locking ring to secure the EV MSA to the meter socket cover with the thicker/wider flange facing the meter socket.

10. Verify the meter socket cover is fully engaged. Confirm the whole-house MAIN circuit breaker cover opens freely. See **Figure 20**.



Figure 20 – Circuit Breaker Cover

REINSTALL THE UTILITY METER

1. Remove the hot jaw safety cover from the line side jaws of the EV MSA.
2. Using a “Meter Grabber™” or similar tool, align the utility meter stabs with the EV MSA jaws.
3. Firmly insert the meter into the EV MSA, ensuring a secure fit.
4. Install a lock ring to secure the utility meter to the EV MSA with the thicker/wider flange facing the meter socket.

VERIFY VOLTAGE AT THE EV MSA

1. Use a 7/64" Allen key to remove the junction box screws. Safely set aside the screws and the upper half of the junction box. See **Figure 21**.



Figure 21 – Junction Box Disassembled

2. Flip up the locking clasps on the EV MSA housing. Verify the power interface area is clear of moisture and debris that could cause a fault. Insert the base of the junction box (with the integrated DER branch circuit breaker) onto the top of the EV MSA housing power interface until the pins are fully seated. See **Figure 22**.

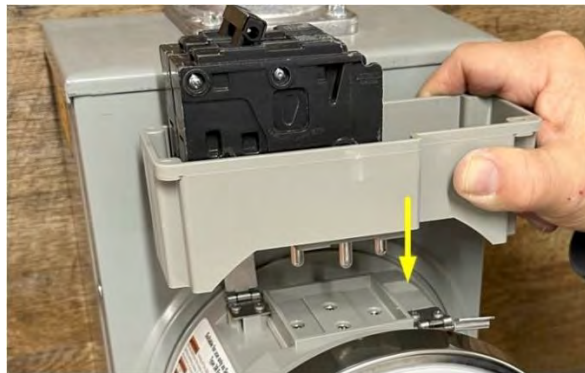


Figure 22 – Insert Junction Box Base

3. Confirm the junction box is clear of anything that could cause a fault. At the bottom of the EV MSA housing, open the circuit breaker cover and turn on the whole-house MAIN circuit breaker. This initiates the EV MSA startup sequence and self-diagnostic check. NOTE that power to the house remains OFF due to the open premises main service disconnect.

During the startup sequence, the following LED behavior on the right side of the MSA should be observed, assuming the whole-house current is at a safe level to energize the branch circuit:

- ① Fast blinking **BLUE**, indicating the EV MSA is starting up.
Solid **RED**, indicating the branch circuit is disconnected.

After five seconds:

- ② Solid **BLUE**, indicating the unit is powered ON.
Solid **RED remains on**, indicating the branch circuit is still disconnected.
Slow blinking **GREEN**, indicating the branch circuit relay is preparing to shut.

See **Figure 23**.

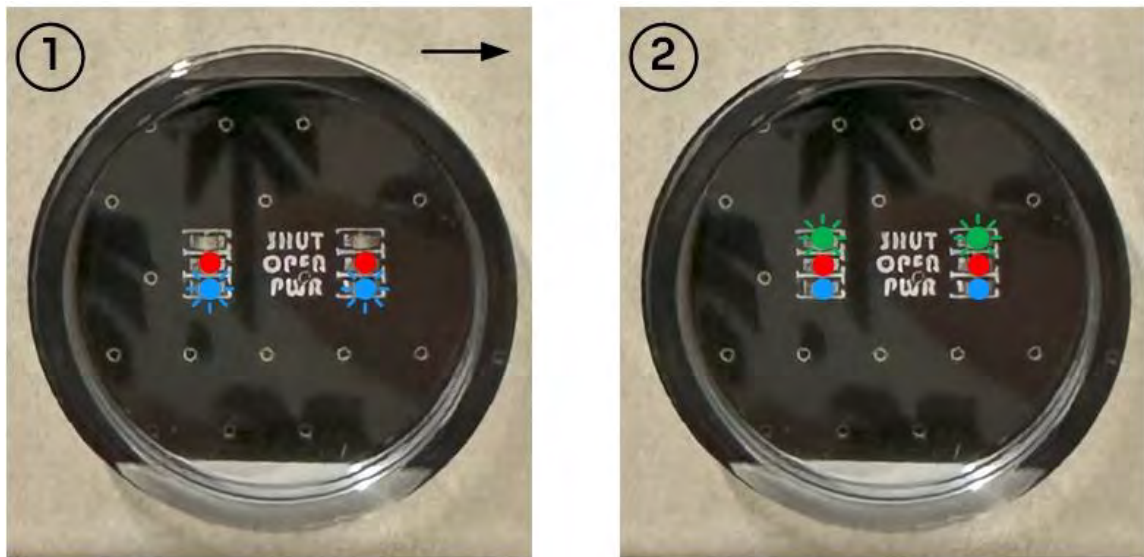


Figure 23 – Normal LED Activity During Startup

4. After approximately 30 seconds the integrated branch circuit relay will shut, causing a “click” that may be audible depending on ambient noise conditions.

The LEDs should display:

Solid **BLUE** = Power on.

Solid **GREEN** = Normal operation.

See **Figure 24**.

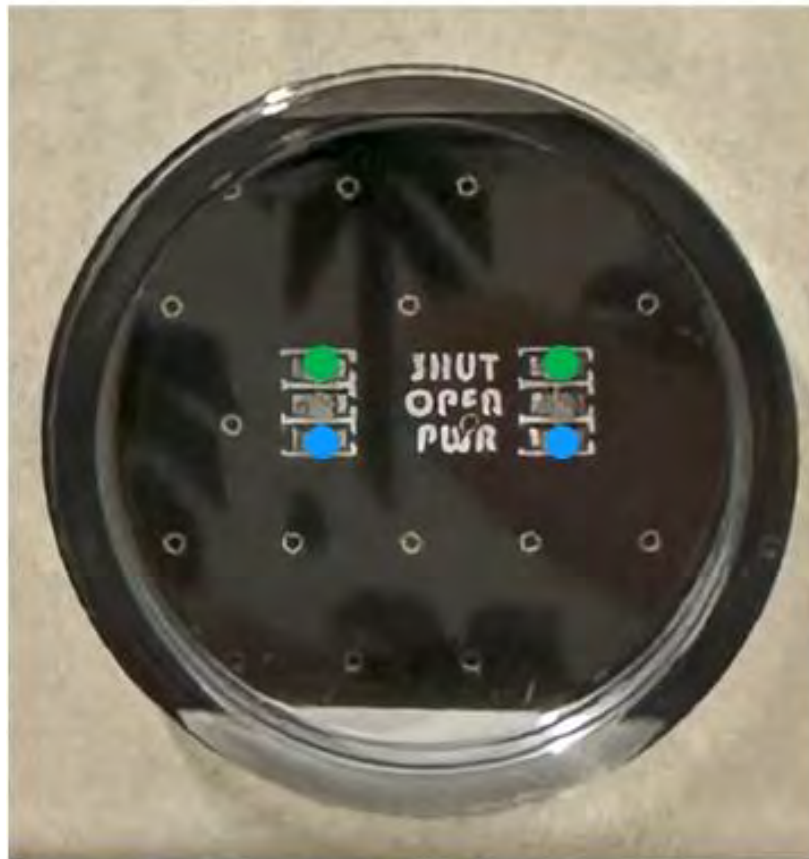


Figure 24 – Normal Status

- Put on the PPE according to your employer's policy. Close (turn ON) the DER branch circuit breaker in the junction box. Verify the presence of appropriate service voltage (120/240v nominal) at the breaker load terminals. As shown in **Figure 25**, left to right check L1 to N/G, L2 to N/G, and L1 to L2.



Figure 25 – Verify Voltage at Junction Box

- Turn OFF the DER branch circuit breaker and confirm the load terminals are deenergized.
- Turn OFF the whole house MAIN circuit breaker at the bottom of the MSA and lock it out.
- Remove the junction box base from the MSA housing.

3. Verify the power interface area is clear of moisture and debris that could cause a fault. Install the junction box by aligning its contact pins with the sleeves embedded in the EV MSA housing and pressing firmly downward as shown in **Figure 27**.



Figure 27 – Junction Box Installation

4. Close the locking clasps to secure the junction box and ensure the conduit entry hole is sealed with the weatherproof plug as shown in **Figure 28**. Note that the junction box is reversible and accommodates conduit entry from the left side or right side.



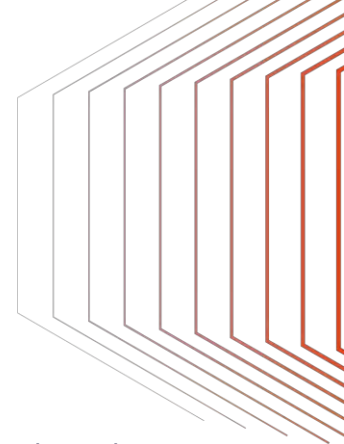
Figure 28 – Sealed Junction Box

5. Install tamper-prevention seals on the lock ring(s) and the junction box clasps as shown in **Figure 29**.



Figure 29 - Tamper-Prevention Seals

6. Confirm the DER branch circuit breaker is open (OFF) and its cover is closed and locked out/tagged out.
7. Remove the lockout device at the bottom of the MSA housing and place the whole-house MAIN circuit breaker in the closed (ON) position. The unit will begin its startup sequence, but power is **not yet restored to the premises**.
8. Verify that any alternate/backup power solutions are in position to restore utility power to the service equipment. Close (turn ON) the service equipment disconnecting means. Verify that power has been restored to the home.
9. Position the metal tabs on both EV MSA circuit breaker covers to hold each cover in the closed (weatherproof) position. For additional protection, install spare tamper-prevention seals or other lockout devices.



INSTALL THE EV MSA BRANCH CIRCUIT WIRING

ITEMS REQUIRED FOR EV MSA DER BRANCH CIRCUIT WIRING INSTALLATION



NOTE – The following items (provided by the installer) are required to connect branch circuit wiring to the EV MSA:

| Qty. | Item |
|-------|---|
| 1 | One or more calibrated torque drivers to cover a range from 8 to 45 in-lbs. |
| 1 | 7/64" hex key. |
| 1 | 7/64" hex bit for use with a torque driver. |
| 1 | 1/4" flat blade screwdriver. |
| 1 | 1/4" flat blade bit for use with a torque driver. |
| 1 | 5/16" flat blade screwdriver. |
| 1 | 5/16" flat blade bit for use with a torque driver. |
| 1 | Wire cutter. |
| 1 | Knife or wire stripper for field wiring. |
| 1 | Calibrated digital volt-ohmmeter or other suitable metering equipment. |
| 1 lot | Tools and materials to install branch circuit raceway to the EV MSA junction box. Use 3/4" trade size liquid-tight flexible conduit complying with the Standard for Liquid-Tight Flexible Metal Conduit, UL 360, or the Standard for Liquid-Tight Flexible Nonmetallic Conduit, UL 1660, and fittings complying with UL 514B. |
| 1 lot | Additional tamper-prevention seals. Five are furnished with each unit to secure the junction box hasps, meter socket rings and cover (if ringless). |



WARNING – EV MSA installation must be performed by qualified personnel only. Follow your employer's requirements for personal protective equipment (PPE) and procedures.



INSTALL THE DER BRANCH CIRCUIT WIRING AT THE EV MSA JUNCTION BOX



NOTE – The reversible junction box accommodates conduit entry from the left or right side. A 45-degree or 90-degree connector is recommended to be used at the junction box. If possible, provide enough slack (i.e., service loop) in the flexible conduit to permit junction box removal (pulling straight up a minimum of 2 inches) for ease of utility inspection and maintenance.



NOTE – The EV MSA junction box wiring should be terminated **first**. It is easier to accommodate an angled connector at the EV MSA junction box by wiring it first.

1. Use type THHN/THWN-2 insulated, **copper conductors only**. Select the wire gauge by following the ampacity at 75°C. Do not use aluminum or copper-clad aluminum conductors.
2. Verify the EV MSA branch circuit wiring is clear of faults using suitable metering equipment.
3. Remove jewelry, put on the appropriate PPE, and follow your employer’s safety procedures.
4. Place the whole-house MAIN circuit breaker in the open (OFF) position.
5. Confirm the DER branch circuit breaker is in the open (OFF) position.
6. Follow procedures for removing the tamper-prevention seals from the junction box clasps.
7. Flip open the junction box clasps.
8. Pull the junction box up by hand to remove it from the EV MSA housing. Once removed, ensure that no moisture or debris enters the power interface of the housing while wiring the junction box. See **Figure 30** on the next page.

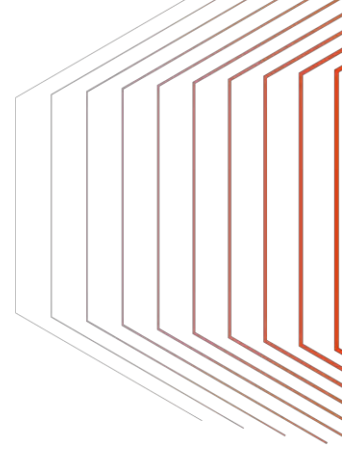


Figure 30 – Junction Box Removed.

9. Using a 7/64” hex key, remove the bottom cover of the junction box, taking care not to damage the gasket material. Set the screws aside in a safe place.
10. Remove the weatherproof plug from the junction box and identify the terminals. See Figure 31.



Figure 31 – Junction Box Terminals

11. Install the liquidtight conduit connector onto the junction box and tighten the locknut with the connector at the desired angle.
12. Pull the DER branch circuit wiring through the conduit connector.
13. Strip the conductor insulation to expose the copper 1/2" (approximately 13mm).
14. Slide each conductor into its individual lug. Ensure all strands from each conductor enter the screw terminal area.
15. Use a 1/4" flat blade screwdriver to hand-tighten the neutral and ground screw terminals ensuring that only the copper conductor is being compressed (**not** the insulation).
16. Use a 5/16" flat blade screwdriver to hand-tighten the line terminals on the circuit breaker.
17. Perform a gentle "pull test" to ensure all connections are secure.
18. Torque the neutral and ground lugs to 35 in-lbs.
19. Torque the circuit breaker terminal lugs to 40 in-lbs. (#8 AWG) or 45 in-lbs. (#4-#6 AWG). See **Figure 32**.



Figure 32 – Junction Box Wiring

20. Route the excess slack back through the conduit connector and reassemble the junction box.
21. Reinstall the 7/64" screws and torque to 8 in-lbs.
22. Slide the liquidtight raceway over the wiring and secure it to the raceway connector.

INSTALL THE JUNCTION BOX

1. Verify the power interface area is clear of moisture and debris that could cause a fault. Align the pins of the junction box over the power interface in the EV MSA housing as shown in **Figure 33**.



Figure 33 – Align the Junction Box Pins

2. Insert the junction box onto the EV MSA housing. Press firmly to ensure it is secured.

3. Secure the junction box with the metal clasps in front of and behind the box. See **Figure 34**.



Figure 34 – Secure Junction Box Clasps

4. Install two tamper-resistant seals – one each at the front clasp and rear clasp as shown in **Figure 35**.



Figure 35 – Tamper-Prevention Seals

5. Confirm the DER branch circuit breaker is open (OFF) and lock it out.
6. Place the whole-house MAIN in the closed (ON) position. The unit will begin its startup process.

7. If the premises main service disconnect is OFF, verify that any alternate/backup power solutions are in position to restore utility power to the service equipment. Close (turn ON) the service equipment disconnecting means to restore power to the premises.
8. Working with the EVSE branch circuit wiring is safe **as long as the DER branch circuit breaker remains OFF.**

COMPETE THE CONDUIT, WIRING, ENERGIZE AND TEST

10. Install, support and terminate the other end of the raceway and conductors to the next enclosure (such as a field-installed junction box or the EV Charger itself). Support the liquidtight conduit per NEC/AHJ requirements. If possible, provide enough slack (i.e., a service loop) in the flexible conduit to permit junction box removal (pulling straight up a minimum of 2 inches). See **Figure 36** for an example of a completed raceway.



Figure 36– Completed Raceway

11. When ready to energize and commission the EVSE, remove the lockout/tagout device at the DER branch circuit breaker and place the DER branch circuit breaker in the closed (ON) position.
12. Follow the manufacturer’s instructions to commission the EVSE system and set the charging load to 32 amps maximum.
13. Position the metal tabs on both EV MSA circuit breaker covers to hold each cover in the closed (weatherproof) position. For additional protection, install spare tamper-prevention seals or other lockout devices.

TROUBLESHOOTING

See **Table 3** below for troubleshooting tips.

| Symptom | Corrective Action |
|---|---|
| LEDs are OFF. | Verify the whole-house circuit breaker at the bottom of the EV MSA is ON. |
| DER Branch Circuit is not receiving power. | <ol style="list-style-type: none"> 1) Verify the DER Branch Circuit Breaker at the top of the junction box is ON, not OFF or TRIPPED. 2) Check the LED lights on the right side of the EV MSA. Refer to the LED STATUS LIGHTS section of this document. 3) Verify the equipment connected to the DER Branch Circuit is drawing a maximum of 32 amps. For example, if there is an EV charger connected, check the status lights on the charger, the charger app, or the charger manual for further troubleshooting steps. <p>The EV MSA has no Wi-Fi or other communications capability; it provides a power connection for external equipment.</p> |
| Slow blinking BLUE LED (1 sec on, 1 sec off). | Fault condition. Wait 5 minutes, then power cycle both the whole-house MAIN and DER Branch Circuit breakers. Note that this will briefly shut OFF power to the entire home. If the issue persists after power cycling, contact an electrician or certified installer. |

Table 3 – Troubleshooting the EV MSA.

For more information, contact support@connectder.com.

NON-EVSE USE CASES

BRANCH CIRCUIT UNI-DIRECTIONAL LOAD

The EV MSA may provide a connection to a non-EVSE load via the DER branch circuit breaker. The EV MSA is available with a 40 or 60-amp circuit breaker, but both models use 32 amps as the non-adjustable benchmark to safely limit the whole-house current. Do NOT connect critical loads to the DER branch circuit.

See **Figure 37** below, shown with a 60-amp DER branch circuit breaker. Other components may be required depending on the application. Follow all applicable codes.

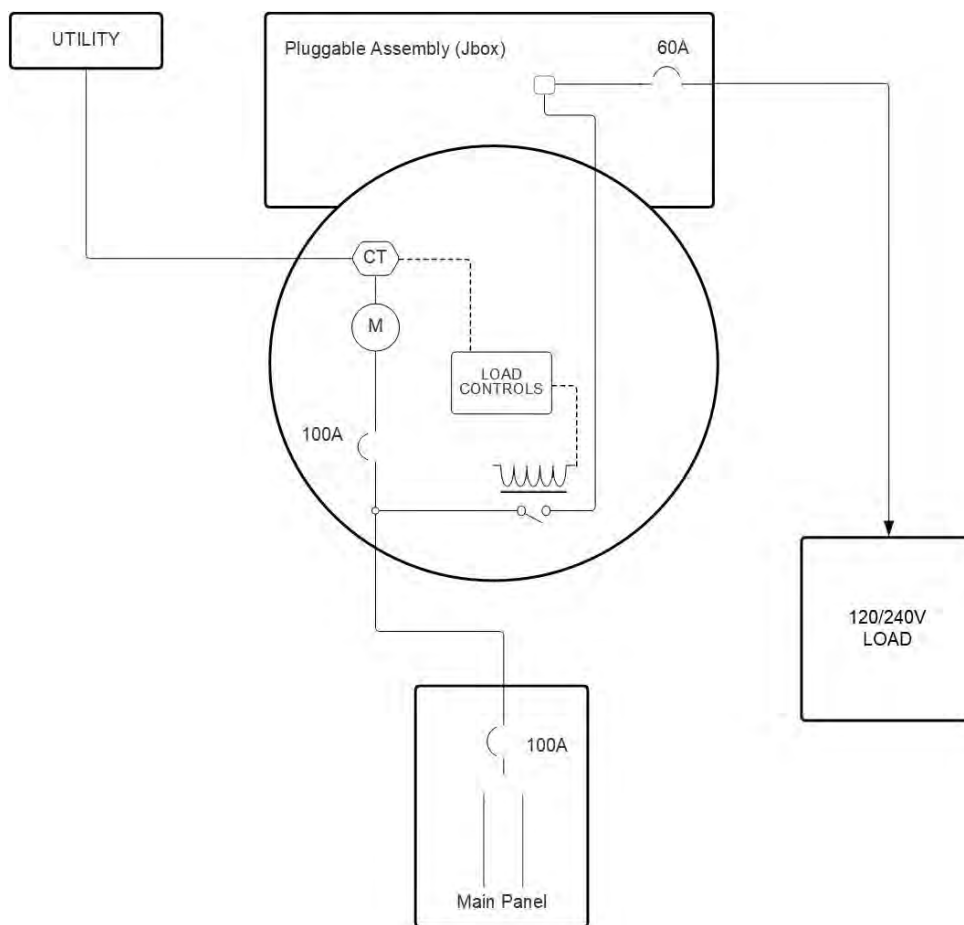


Figure 37 – EV MSA with Non-EVSE Uni-Directional Load

BRANCH CIRCUIT BI-DIRECTIONAL LOAD/SOURCE

The EV MSA may provide a connection to non-EVSE loads and utility-interactive inverter(s) via the DER branch circuit breaker. The EV MSA is available with a 40 or 60-amp circuit breaker, but both models use 32 amps as the non-adjustable benchmark to safely limit the whole-house current. Do NOT connect critical loads to the DER branch circuit. If using interactive EVSE with a power export function that serves as a bidirectional power feed, it:

- shall be listed and marked as suitable for that purpose,
- must comply with Article 705 of the NEC,
- may be used only as an interactive, grid-tied system (vehicle-to-grid, or V2G), and

shall not be used for backup power to the premises via the EV MSA.

See **Figure 38** below, shown with a 60-amp DER branch circuit breaker. Other components may be required depending on the application. Follow all applicable codes.

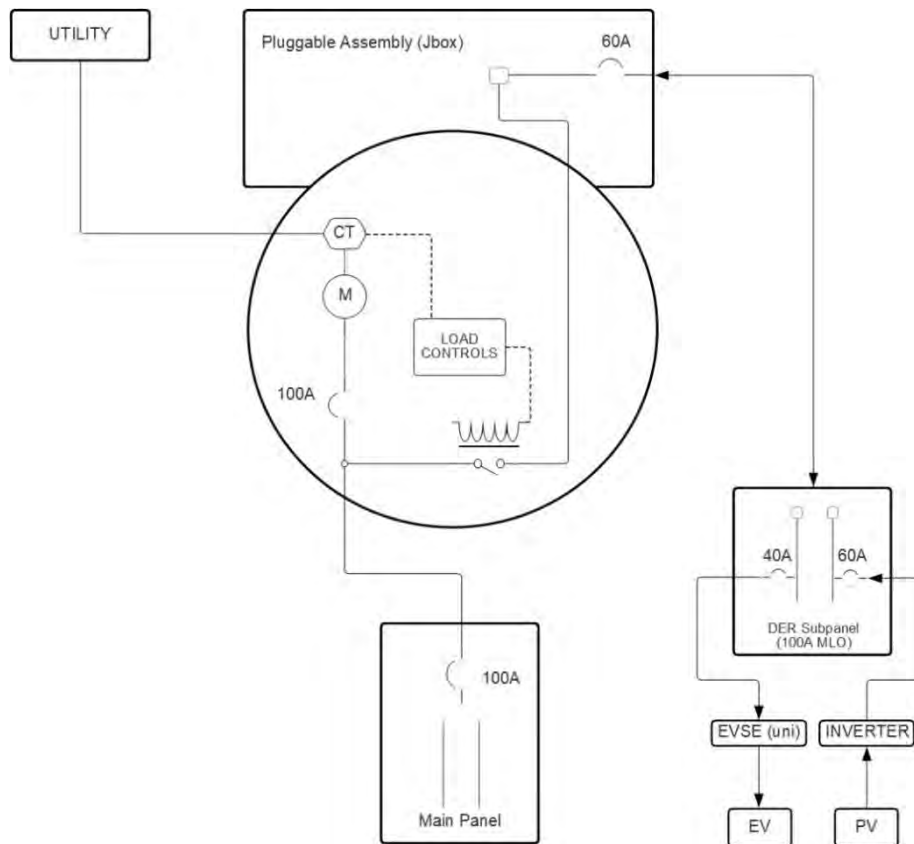
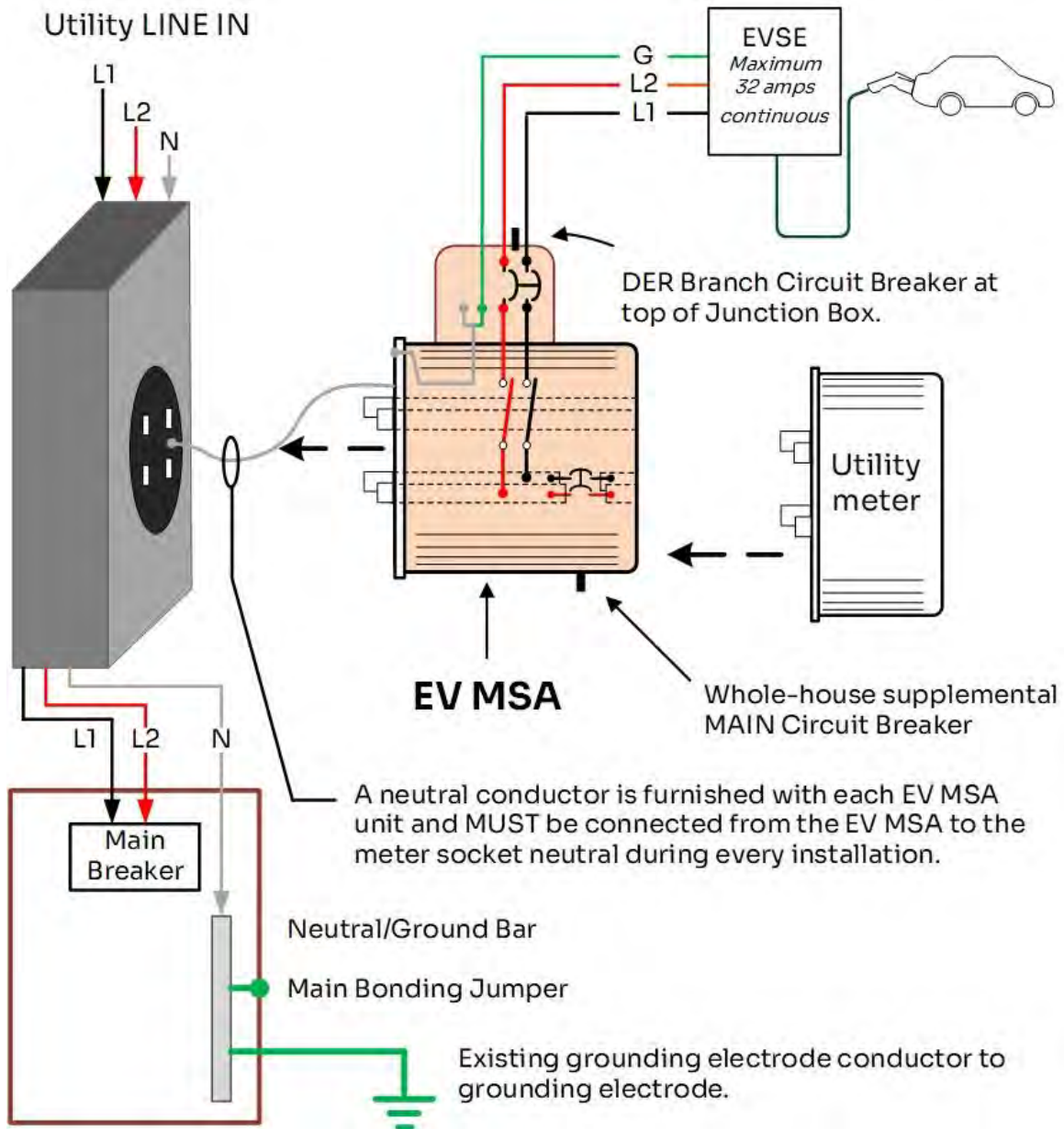
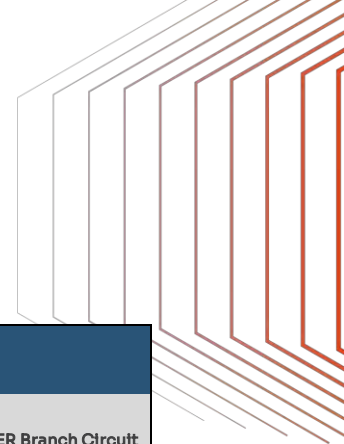


Figure 38 – EV MSA with Load and Source

APPENDIX

Reference 1 – EV MSA System Wiring Example





Reference 2 – EV MSA Model Numbers

| FORM 2S METER TYPES | | | | | | |
|------------------------|-----------------|----------------------|-------------|------------|---------------------|-------------------------------------|
| Model Number | Product Version | Grid Interconnection | No. of Jaws | AIC Rating | Whole-House Breaker | DER Branch Circuit Breaker Amperage |
| E-B-4-22-40-100 | EV MSA | Load Side | 4 Jaws | 22,000 | 100 Ampere | 40 |
| E-B-4-22-60-100 | EV MSA | Load Side | 4 Jaws | 22,000 | 100 Ampere | 60 |
| E-B-4-22-40-125 | EV MSA | Load Side | 4 Jaws | 22,000 | 125 Ampere | 40 |
| E-B-4-22-60-125 | EV MSA | Load Side | 4 Jaws | 22,000 | 125 Ampere | 60 |

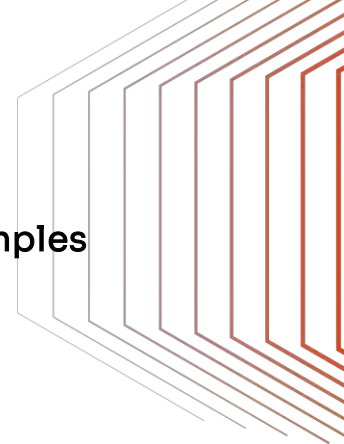
Reference 3 – EV MSA Specifications

| MECHANICAL SPECIFICATIONS | | EVSE/ DER CIRCUIT LOAD RATINGS | |
|-------------------------------------|--|--|--|
| ENCLOSURE RATING | NEMA 3R | MAXIMUM POWER | 7.68 KW AC |
| ENCLOSURE TYPE | Injection molded polycarbonate, UL 94 V0 flame rating | MAXIMUM VOLTAGE | 240V |
| COOLING | Natural convection | MAXIMUM CONTINUOUS DER BRANCH CIRCUIT CURRENT | 32A |
| DIMENSIONS (H X W X D) | 9.5 x 7.5 x 6.0 in with junction box | CONTINUOUS COMBINED CURRENT, DER/GRID | 100/125A |
| WEIGHT | 5.4lb (2.4kg) | DER WIRING TERMINAL | Terminal block |
| MOUNTING SYSTEM | Blade interface with 4-jaw or 5-jaw meter socket | | Blade interface with meter socket for L1/L2, pigtail for neutral |
| ELECTRIC METER COMPATIBILITY | Type 2S | GRID CONNECTION TYPE | Split-Ø/3W (2S/4-jaw) |
| METER SOCKET COMPATIBILITY | Ringless and ring-type, lever and horn bypass meter sockets | | |
| POINT OF INTERCONNECTION | Factory configured, load-side of utility meter/supply-side of main service | | |
| CONDUIT CONNECTION | 3/4" trade size conduit | | |
| TERMINAL CONNECTIONS | L1, L2, N, G; Up to 6 AWG wire | | |

| SAFETY & ENVIRONMENTAL INFORMATION | | OVERCURRENT PROTECTION | |
|--|--------------------------------|--|---|
| APPLICABLE SAFETY STANDARDS | UL 414 – Meter Sockets | TYPE | Siemens Type QPH, thermal magnetic, 120/240V, pigtail for neutral |
| ETL CONTROL NUMBER | 5028888 | WHOLE HOUSE OVERCURRENT PROTECTION RATINGS | 100A, 125A |
| AMBIENT AIR OPERATING TEMPERATURE RANGE | -22°F to 158°F (-30°C to 70°C) | DER BRANCH CIRCUIT OVERCURRENT PROTECTION RATINGS | 40A, 60A |
| AMBIENT AIR STORAGE TEMPERATURE RANGE | -40°F to 176°F (-40°C to 80°C) | CURRENT INTERRUPTING RATINGS | 22k AIC rating |

| DER BRANCH CIRCUIT CONTROL PARAMETERS (Load Control for Service Rating) | | |
|---|------|------|
| UTILITY SERVICE RATING | 125A | 100A |
| CONTINUOUS CURRENT TRIP (15 Min Accumulated) | 98A | 78A |
| CONTINUOUS CURRENT TRIP (30 sec) | 119A | 100A |
| Reconnect Time (15 Min Accumulated) | 66A | 46A |





Reference 4 – DER Branch Circuit Disconnect/Reconnect Examples

Example 1 – Home Load Reaches 80% of Service Rating (100 amp service)

Initial Condition:

- House Current = 35 amps
- Branch Circuit Current (EVSE) = 32 amps for 67 amps total.

Additional House Load:

- Electric dryer starts up, adding 16 amps of continuous load. (House current increases to 51 amps, increasing the total to 83 amps.

Safety Feature Activates:

- After 15 minutes, the DER Branch Circuit disconnects, turning off the EVSE.
- Total load drops to 51 amps (83-32).
- The dryer completes the cycle and turns off, dropping the total to 35 amps.

EV MSA Automatically Reconnects

- After 15 minutes at 35 amps (the maximum reconnection level is 80-32, or 48 amps), the DER Branch Circuit automatically restores power to the EVSE, adding 32 amps. Total is 67 amps, under the 80% threshold. EVSE continues to charge.

Example 1 – Home Load Reaches 95% of Service Rating (100 amp service)

Initial Condition:

- House Current = 35 amps
- Branch Circuit Current (EVSE) = 32 amps for 67 amps total.

Additional House Load:

- Pool pump starts up, adding 30 amps of continuous load. (House current increases to 65 amps, increasing the total to 97 amps.

Safety Feature Activates:

- After 30 seconds, the DER Branch Circuit disconnects, turning off the EVSE.
- Total load drops to 65 amps (97-32).
- The pool pump completes the cycle and turns off, dropping the total to 35 amps.

EV MSA Automatically Reconnects

- After 15 minutes at 35 amps (the maximum reconnection level is 80-32, or 48 amps), the DER Branch Circuit automatically restores power to the EVSE, adding 32 amps. Total is 67 amps, under the 80% threshold. EVSE continues to charge.

Reference 5 – EV MSA Product Labels (English/French)

Product Label:

**Suitable for use only as Service Equipment
Type 3R Enclosure**

Conforms to UL STD 414 | Certified to CSA STD C22.2# 115

⚠ WARNING Turning off the DER branch circuit service disconnect does not de-energize the meter socket adapter. Turn off power from all sources before working inside. Suitable for use with Listed utility interactive equipment in accordance with Articles 705 and 625 of the NEC.

⚠ WARNING Electric shock hazard. Do not touch terminals. Terminals on both Line and Load sides may be energized in the open position.

⚠ WARNING No user serviceable parts inside. Tampering with or removal of this device is strictly prohibited. Hazard of electrical shock or burn. Do not break seal. Contact utility for service.

⚠ WARNING Suitable for use only on the supply side of the service disconnecting means.



⚠ DANGER Risk of electrical shock or burn. Disconnecting means and overcurrent protection are required for external circuits.

NOTICE Not intended for use with disconnect sleeves or additional meter socket adapters.

⚠ CAUTION For use with 240V, single-phase DER branch circuit loads/sources such as EVSE and/or Listed uni- or bi-directional interactive equipment.

NOTICE Suitable for use with 4-terminal, form 2S, ringless and ring-type meter sockets, 1ph, 3 wire, rated up to 200 amps maximum, 240Vac.

NOTE See additional labels at terminals for torque rating values. Field wiring terminal lugs for use with copper conductors only.



Intertek
5028888
Meter Socket Adapter

French Translation:

**Convient uniquement à une utilisation comme
équipement de service
Boîtier de type 3R**

Conforme au standard UL 414 | Certifié au standard CSA C22.2# 115

<Logo ETL/Intertek>

5028888

**Adaptateur de socle de
compteur d'électricité**

French Translation, continued:

AVERTISSEMENT La désactivation du dispositif de sectionnement de service du circuit d'énergie décentralisé (DER) ne met pas hors tension l'adaptateur de socle de compteur d'électricité. Coupez l'alimentation de toutes les sources avant de travailler à l'intérieur. Convient à une utilisation avec les équipements interactifs au réseau électrique certifiés conformément aux articles 705 et 625 du NEC/sections 84 et 86 du CEC, Partie I.

AVERTISSEMENT Risque de choc électrique. Ne touchez pas aux bornes. Les bornes des côtés source (Line) et charge (Load) peuvent être alimentées en position ouverte.

AVERTISSEMENT Aucune pièce réparable par l'utilisateur à l'intérieur. La modification ou le retrait de cet appareil est strictement interdit. Risque de choc électrique ou de brûlure. Ne brisez pas le sceau. Contactez le distributeur d'électricité publique pour le service.

AVERTISSEMENT Convient pour une utilisation uniquement du côté alimentation du dispositif de sectionnement du service électrique.

DANGER Risque de choc électrique ou de brûlure. Dispositif de sectionnement et protection contre les surintensités sont nécessaires pour les circuits externes.

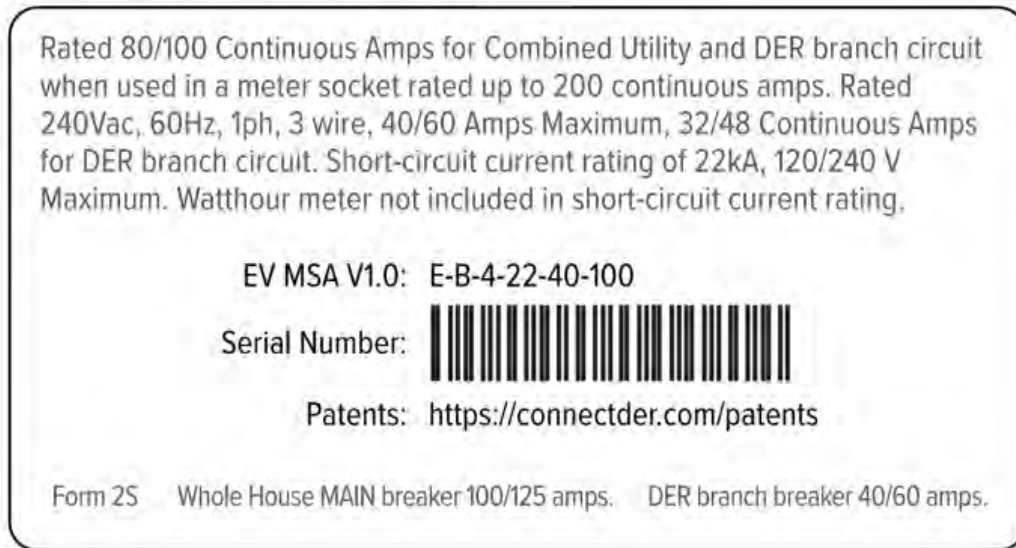
AVIS N'est pas conçu pour une utilisation avec des manchons de déconnexion ou des adaptateurs de socle de compteur supplémentaires.

ATTENTION À utiliser avec des charges/sources de circuit d'énergie décentralisé (DER) monophasées de 240 V, telles qu'une borne de rechargement de véhicule électrique et/ou un équipement interactif uni- ou bidirectionnel certifié.

AVIS Convient pour une utilisation avec des socles de compteur à 4 bornes, forme 2S, sans anneau et de type anneau, monophasées, 3 fils, nominal jusqu'à 200 ampères maximum, 240 Vac.

REMARQUE Voir les étiquettes supplémentaires sur les bornes pour connaître les valeurs de tension de serrage nominales. Bornes de câblage sur site à utiliser uniquement avec des lignes d'alimentation en cuivre.

Serial Number Label:



French Translation:

Courant nominal de 80/100 ampères en service continu pour la combinaison du circuit principal et circuit d'énergie décentralisé (DER) lorsqu'il est utilisé avec un socle de compteur spécifié jusqu'à 200 ampères nominal en service continu. Valeurs nominales de 240 Vac, 60 Hz, 1 ph, 3 fils, 40/60 A maximum, 32/48 A en service continus pour circuit d'énergie décentralisé (DER). Interruption de courant de court-circuit nominal de 22 kA, 120/240V maximum. Compteur d'électricité n'est pas inclus dans le courant de court-circuit nominal.

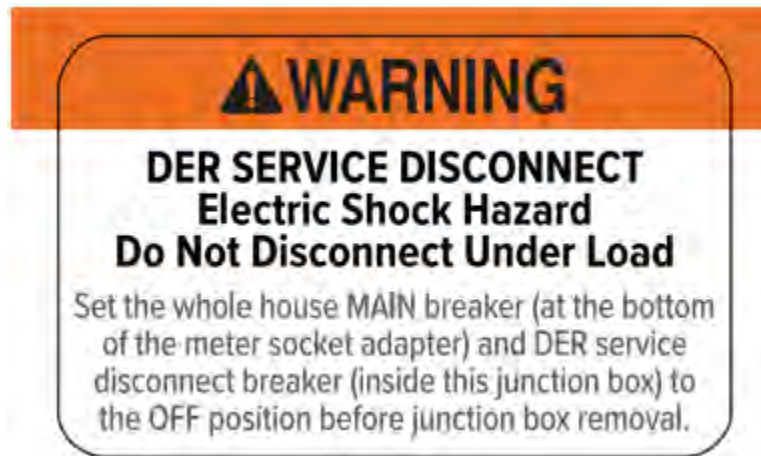
EV MSA V1.0 : E-B-4-22-40-100

Numéro de série : <Code à barres>

Brevets : <https://connectder.com/patents>

Forme 2S Disjoncteur PRINCIPAL de toute la maison 100/125 ampères. Disjoncteur DER 40/60 ampères.

Junction Box Outer Label:



French Translation:

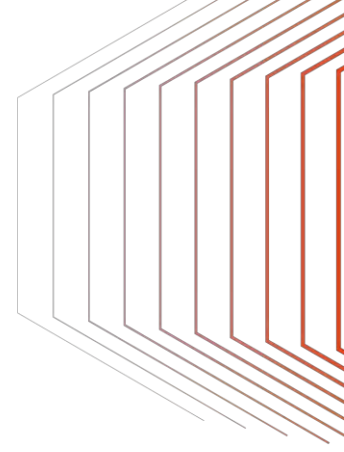
AVERTISSEMENT

DISPOSITIF DE SECTIONNEMENT DE SERVICE DU CIRCUIT D'ÉNERGIE DÉCENTRALISÉ (DER)

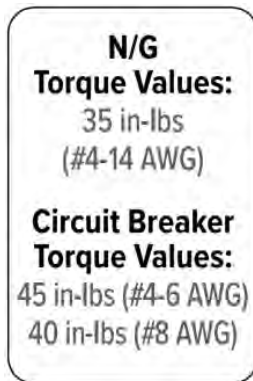
Risque de choc électrique

Ne pas déconnecter sous charge

Désactivez (position OFF) le disjoncteur PRINCIPAL de toute la maison (au bas de l'adaptateur de socle de compteur d'électricité) et le disjoncteur de sectionnement de service circuit d'énergie décentralisé (DER) (à l'intérieur de cette boîte de jonction) avant de retirer la boîte de jonction.



Junction Box Torque Values:



French Translation:

Tension de serrage pour N/G :

4.0 Nm
(#4-14 AWG)

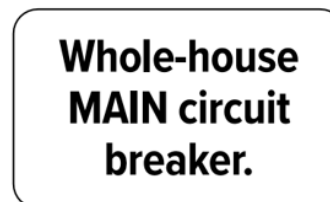
Tension de serrage pour disjoncteur :

5.2 Nm (#4-6 AWG)
4.5 Nm (#8 AWG)

N/G Torque Value:



Whole-House MAIN circuit breaker cover:



French Translation:

Tension de serrage pour N/G :

5.2 Nm (#4-6 AWG)

Disjoncteur PRINCIPAL de toute la maison

LCD Label:



French Translation:

Manuels

<Code QR>

BLEU clignotant rapidement = Séquence de démarrage.

BLEU fixe = Adaptateur de socle de compteur d'électricité sous tension.

VERT fixe = Circuit d'énergie décentralisé (DER) sous tension.

ROUGE fixe = Circuit d'énergie décentralisé (DER) temporairement hors tension.

ROUGE clignotant = Préparation de la mise hors tension du circuit d'énergie décentralisé (DER).

VERT clignotant = Préparation de la mise sous tension du circuit d'énergie décentralisé (DER).

BLEU clignotant lentement = Condition d'anomalie. Consultez le manuel d'utilisation.

FCC REGULATORY STATEMENT

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CALIFORNIA PROP 65 WARNING



WARNING: This product can expose you to chemicals including acrylonitrile, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

DISCLAIMER

The information presented in this document represents ConnectDER's understanding of standards / test procedures and is provided for informational purposes. ConnectDER makes no representation as to the accuracy, completeness, suitability, or validity of the information. ConnectDER will not be liable for any errors, omissions, losses, injuries, or damages arising from the use of this information.

For the official views of Intertek, consult the appropriate standard, or contact Intertek directly regarding the ConnectDER EV MSA, Intertek ETL File Number 5028888.