

ConnectDER Solar Meter Socket Adapter Installation Manual - Version V5.2



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REVISION HISTORY

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SYMBOLS USED IN THIS MANUAL



WARNING

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



NOTE

Designates helpful information.

INTRODUCTION



NOTE - Version 1.0 of this document supersedes all previous versions. It is the responsibility of the party installing, replacing, and/or servicing the Solar Meter Socket Adapter (the “installer”) to obtain and follow the most current installation document.

The ConnectDER™ Solar Meter Socket Adapter (“MSA”) is a UL Listed device that enables rapid interconnection of grid-ready distributed energy resources (DERs). It creates a safe, standardized, low-cost alternative to traditional wiring methods.

Underwriters Laboratories, Inc. (UL) grants its listing after verifying that products meet a high level of safety and quality, and conform to numerous codes and standards, one of which is the most current edition (**2023** edition for the V5.2 MSA) of the National Electrical Code (NEC).

The MSA operates in parallel with the utility grid. It is approved for use with interconnected electric power production sources in accordance with Article 705 of the NEC such as Listed grid-interactive photovoltaic (PV) systems where the inverter(s) meets UL 1741 requirements.

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

Contact ConnectDER, Inc. at support@connectder.com for the most current document and technical support before installing, replacing, and/or servicing the MSA. Always follow utility and Authority Having Jurisdiction (AHJ) requirements.

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



WARNING - The ConnectDER Solar MSA and the meter socket contain energized parts capable of causing death, injury, or damage to property. Meter removal and replacement must only be performed by qualified personnel trained in meter removal and replacement.

Installation and servicing of the MSA, all associated wiring and interconnections must be performed by qualified personnel. NEC Article 100 defines a qualified person as *one who has the skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved.*

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

Use a calibrated voltmeter to confirm conductive parts are de-energized before touching. Use factory-insulated tools.

Do not alter the MSA or any other equipment or conductor in a manner that voids its listing or warranty. Do not attempt to replace the integrated PV/DER circuit breaker or modify any other components. ConnectDER recommends practicing the installation and wiring of the MSA using de-energized equipment before proceeding with field installations.



WARNING - The MSA is permitted to interconnect a parallel **source to the supply side of the main service disconnecting means. The MSA shall not be used to interconnect electric vehicle supply equipment (EVSE) or other non-controlled loads except for battery energy storage systems (BESS) charged solely by **solar PV or another source other than the utility**. The 200-amp combined utility (190 amps for line-side units) and DER rating is permitted only when the DER is an **input source** to the MSA.**

Loads connected to the MSA must be limited to the minimal current that the inverter(s) require to start, commission, and monitor a solar PV system, NOT for battery charging current or other loading.

BESS may only be interconnected to the MSA when used in conjunction with an approved 3rd party **Listed Energy Management System / Power Control System (EMS/PCS)**, in accordance with latest applicable NEC regulations. The EMS / PCS must be configured to **never import power from the utility** via the MSA for battery charging. The EMS/PCS and BESS design must be approved by the local AHJ and utility, and shall prevent overloading of services, busbars, feeders, and branch circuits, per NEC requirements.

SOLAR METER SOCKET ADAPTER FEATURES

- Enables rapid connectivity for PV systems and other DERs.
- Quick-connect and quick-release weatherproof junction box for field wiring.
- Readily accessible circuit breaker for overcurrent protection and AC DER disconnect.
- Lockout/tagout capability for safety and security.
- Compatible with ringless, ring type, and lever bypass meter sockets*, form 2S, rated 200 amps maximum.



WARNING - *For lever bypass meter sockets, ConnectDER recommends:

- Locking out alternate/backup sources of power.
- Removing power from the premises loads.
- Actuating the lever bypass to facilitate meter removal.
- Removing the meter.
- Positioning the lever bypass to de-energize the load-side meter socket jaws.

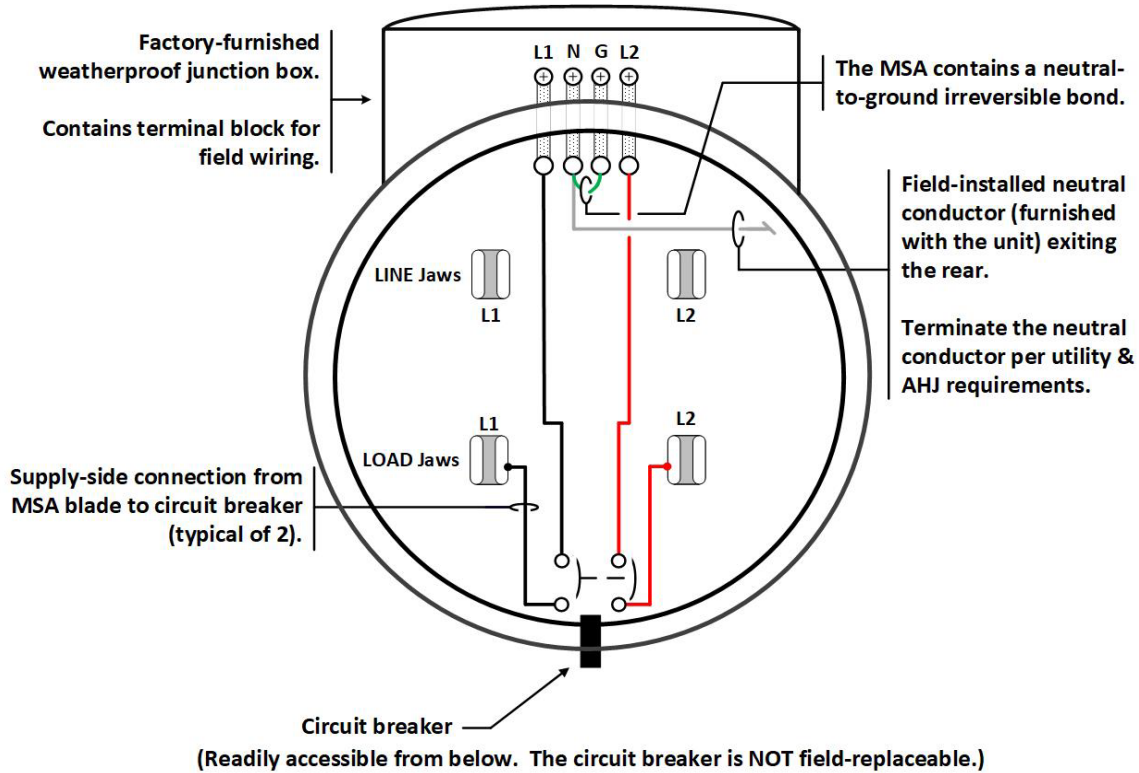
This is covered again in the [INSTALLATION PROCEDURE](#).

WHAT'S NEW FOR V5.2

- Available in meter form 2S, 120/240v and form 12S, 120/208v, single phase.
- Available with a choice of 40, 60, or 80-amp PV/DER interconnection circuit breaker, in either 10 kAIC or 22 kAIC rating.
- 200 amp continuous combined utility and PV/DER rating (**load**-side of meter PV/DER interconnection point)
- 190 amp continuous combined utility and PV/DER rating (**line**-side of meter PV/DER interconnection point)

WIRING SCHEMATICS

Figure 1 – Power Wiring Schematic – Load Side of Meter Interconnection



NOTE – The MSA in Figure 1 creates a supply side PV/DER interconnection on the load side of the billing meter. Interconnection at the line side of the billing meter is available for utility-owned systems only. See the [APPENDIX](#) for a line-side (of billing meter) schematic diagram. The MSA contains a factory-installed neutral-to-ground bond.

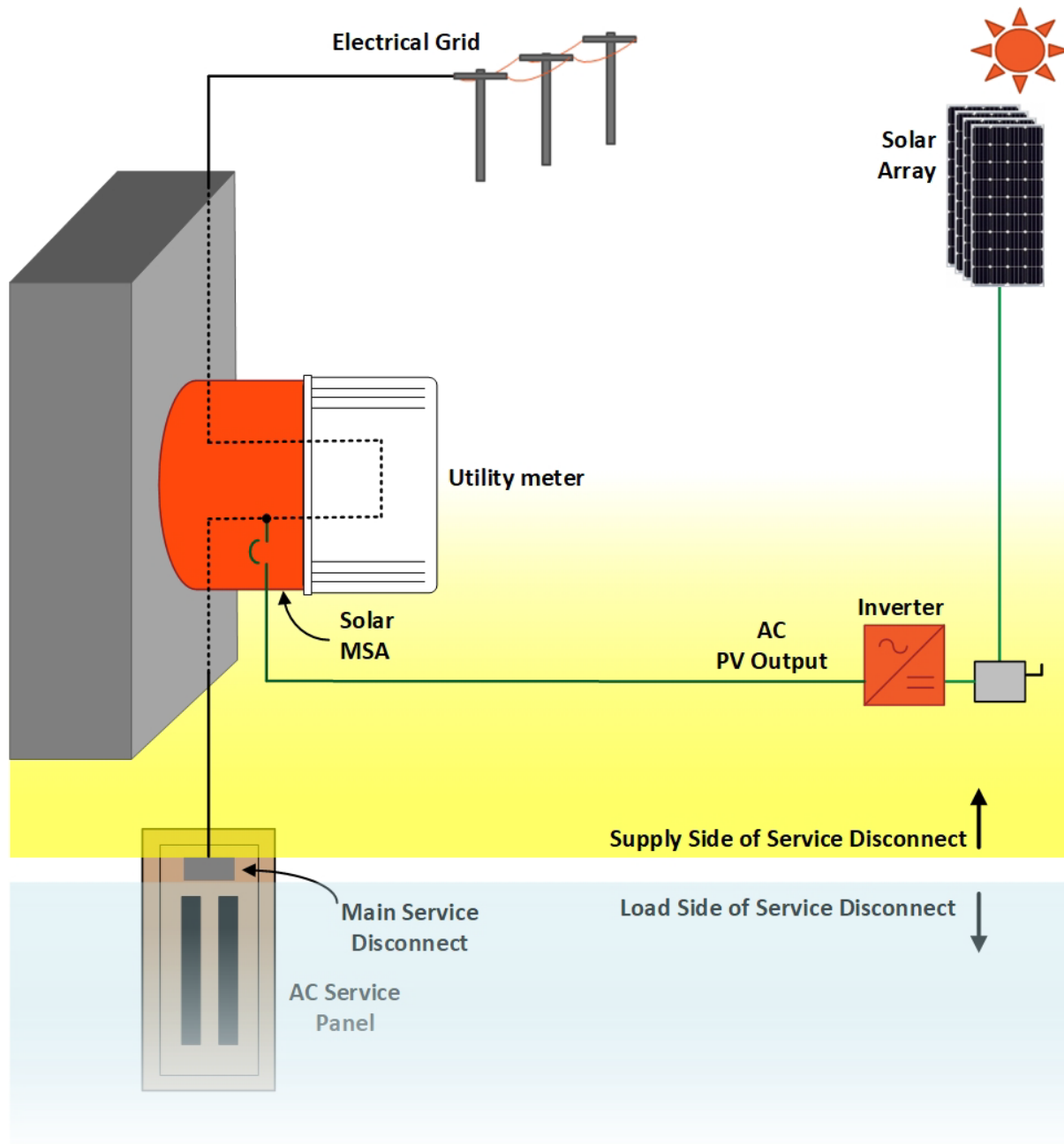


WARNING – The MSA is only suitable for use on the supply side of the service disconnecting means.

The MSA must be installed with the junction box at the top and the integrated circuit breaker at the bottom. Do not install the MSA in any other orientation.

The MSA creates a connection to the supply side of the service disconnect as shown in **Figure 2**.

Figure 2 – Conceptual Supply-Side Solar PV Interconnection



BOX CONTENTS

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

Qty.	Item
1	Solar Meter Socket Adapter.
1	Quick-connect and quick-release junction box with a 1" trade size conduit closure plug.
1	Locking ring for attaching the meter to the meter collar.
1	Neutral pigtail, white, #6 AWG THHN stranded copper for 60-amp units and below.
1	Neutral pigtail, white, #4 AWG THHN stranded copper for 80-amp units.
2	Tamper-resistant seals.
1	Accessory bag with installation reminders and a QR code to access installation manuals.
1	1" trade size type LFNC-B liquidtight nonmetallic flexible conduit connector, 90-degree*.

*Any 1" trade size liquidtight flexible nonmetallic conduit (type LFNC) connectors complying with the Standard for Conduit, Tubing, and Cable Fittings, UL 514B may be used, provided they are approved for use with the liquidtight nonmetallic raceway containing the field wiring. The raceway must be furnished by others.



WARNING – It is the responsibility of the MSA installer to ensure a white neutral pigtail is installed with every unit.

The neutral pigtail must have a minimum ampacity as the ungrounded conductors protected by the MSA internal circuit breaker. Use a method approved by the utility and AHJ to attach the white pigtail from the MSA to a neutral point inside of the meter socket.



NOTE - More information regarding the neutral connection is contained in the "[INSTALL THE NEUTRAL LEAD](#)" section of this document.

INSTALLATION PREPARATION

SITE INSPECTION

There are several types of existing residential meter sockets suitable for MSA installation. Some common types, namely single gang, multi-gang, and combination meter socket/load centers are covered in this section. 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 3**. They lack the interior space and means to accommodate a neutral pigtail.

Figure 3 – Shallow Meter Socket (Not Recommended)



2. Rule out meter sockets with inadequate space to install a 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 utility is restricting MSA usage to ringless (**Figure 4**) or ring type (**Figure 5**) meter sockets. The MSA supports both configurations.

Figure 4 – Single Gang Ringless Meter Socket



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 Ring Type Meter Socket



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



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

4. Confirm if multi-gang meter sockets (**Figure 6**) 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.

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 MSA junction box may be inserted and disconnected (lifted up a minimum of 2") and the field wiring raceway does not block access to circuit breakers and/or the removal of meter socket covers.

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

Figure 6 – Multi-Gang Meter Sockets



5. Confirm if combination meter socket/load centers (**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.

Figure 7 – Combination Meter Socket/Load Centers



NOTE - The neutral pigtail from the MSA is normally terminated in the meter socket compartment. The neutral pigtail is required as part of the installation and is a component of the MSA itself; therefore, it may be confined to the metering compartment. Check with the AHJ and utility to verify if the neutral connection must remain entirely within the meter socket compartment, or if it may cross any barrier to the customer premises wiring section.

6. An MSA shall not be installed on meters already equipped with a socket adapter (**Figure 8**).

Figure 8 – Existing Meter and Socket Adapter



7. Account for other considerations:
 - a. Check with the utility for other potential meter collar prohibited installations. Do not install an MSA where it is subject to physical damage.
 - b. Verify the MSA model number(s) approved for use by the utility.
 - c. Verify the meter socket is accessible with adequate working clearance. The MSA extends the billing meter 4.6 inches forward from the meter socket.
 - d. Check with the utility and the AHJ before installing an MSA indoors. The 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 either 240volts, 200 amps maximum, 3-wire, and form 2S, or 208volts, 200 amps maximum, 3-wire, and form 12S. Check with the utility in order to specify the correct meter form when ordering. (Some utilities are deploying 12S/five-jaw meter sockets but installing 2S/four-jaw net meters.)



WARNING – Do not alter the MSA, conductors, or any other equipment in a manner that voids its listing or warranty.

PACKAGE INSPECTION

1. Inspect the box and verify the contents are complete and in good condition. Contact ConnectDER at RMA@connectder.com in case of damage or missing components.
2. Open the circuit breaker access door at the bottom of the MSA and verify the ampere rating on the circuit breaker handle matches what was ordered.
3. Verify the correct meter form: 4-blade (form 2S) or 5-blade (form 12S).

ITEMS REQUIRED FOR SOLAR METER ADAPTER INSTALLATION



NOTE – The following items (provided by the installer) are required to install a Solar Meter Adapter into a meter socket:

Qty.	Item
1	One or more torque drivers to cover a range from 5 to 50 in-lbs.
1	7/64" hex key.
1	7/64" hex bit for use with a torque driver.
1	¼" flat blade screwdriver.
1	¼" flat blade bit for use with a torque driver.
1	Wire cutters.
1	Wire strippers.
1	Calibrated digital volt-ohmmeter or other suitable metering equipment.
1	Approved wiring connector to terminate the neutral pigtail inside the meter socket if no spare terminal is available.
1 lot	Additional tamper-prevention seals.
1 lot	Insulation material for the neutral connection in the meter socket.
1	"Meter Grabber™" or equivalent tool to safely remove and reinstall the electric meter.

The items required to terminate PV/DER field wiring are listed in the "[INTERCONNECT THE PV/DER WIRING](#)" section of this document.

SAFETY EQUIPMENT

Always follow company and local safety/PPE requirements related to OSHA and NFPA 70E.

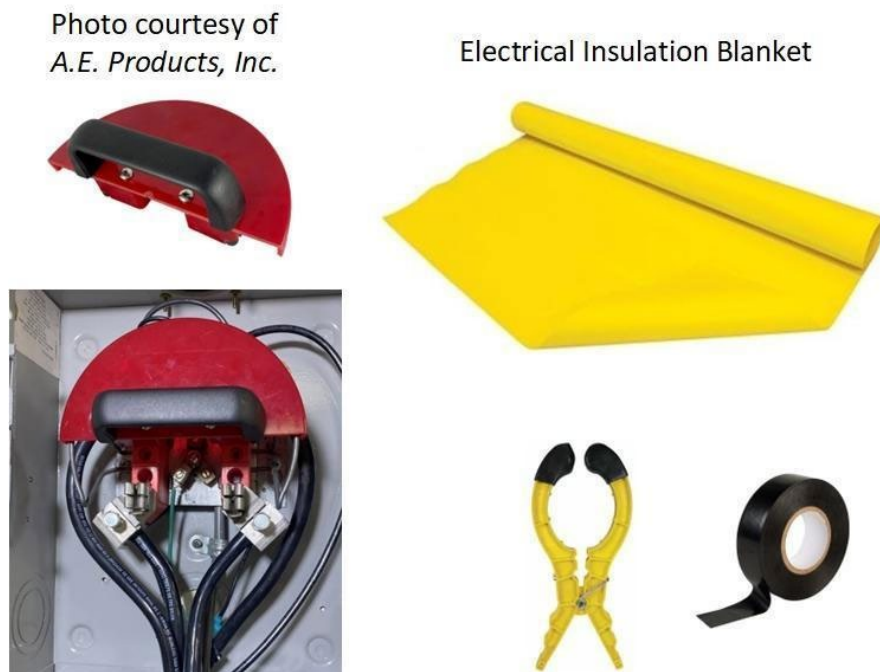
Installers must be intimately aware of local and company safety/PPE requirements. If safety/PPE requirements are unknown, STOP work. DO NOT proceed further.

Installers must ensure all PPE has the minimum appropriate rating for the application. Example of common PPE is 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. Equipment examples include a safety cover for energized jaws, and an appropriately rated electrical insulation blanket that can be cut to size, temporarily applied, then taped and/or clamped into place. (**Figure 9**). Contact the serving utility for other safety tips or procedures.

Figure 9 – Protection From Energized Parts



INSTALLATION PROCEDURE



WARNING – Solar Meter Adapter installation must be performed by qualified personnel only. Electric shock, arc flash hazards, fire, serious injury or death may result if power is not removed from the meter socket prior to the 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 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 that the homeowner has all turned off and locked out/tagged out any alternate electrical sources such as backup generators, battery systems, etc.**
3. Turn off all power to the customer's 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.**
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 facilitate meter removal.
7. Using a "Meter Grabber™" or similar tool, remove the electric 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 and comply with utility requirements and local codes.

INSTALL THE NEUTRAL LEAD



- Attach the white pigtail from the rear of the MSA to a neutral point inside of the meter socket. The neutral pigtail must have a minimum ampacity as the line conductors protected by the MSA internal circuit breaker.
- Use a method approved by the utility and the authority having jurisdiction (AHJ).

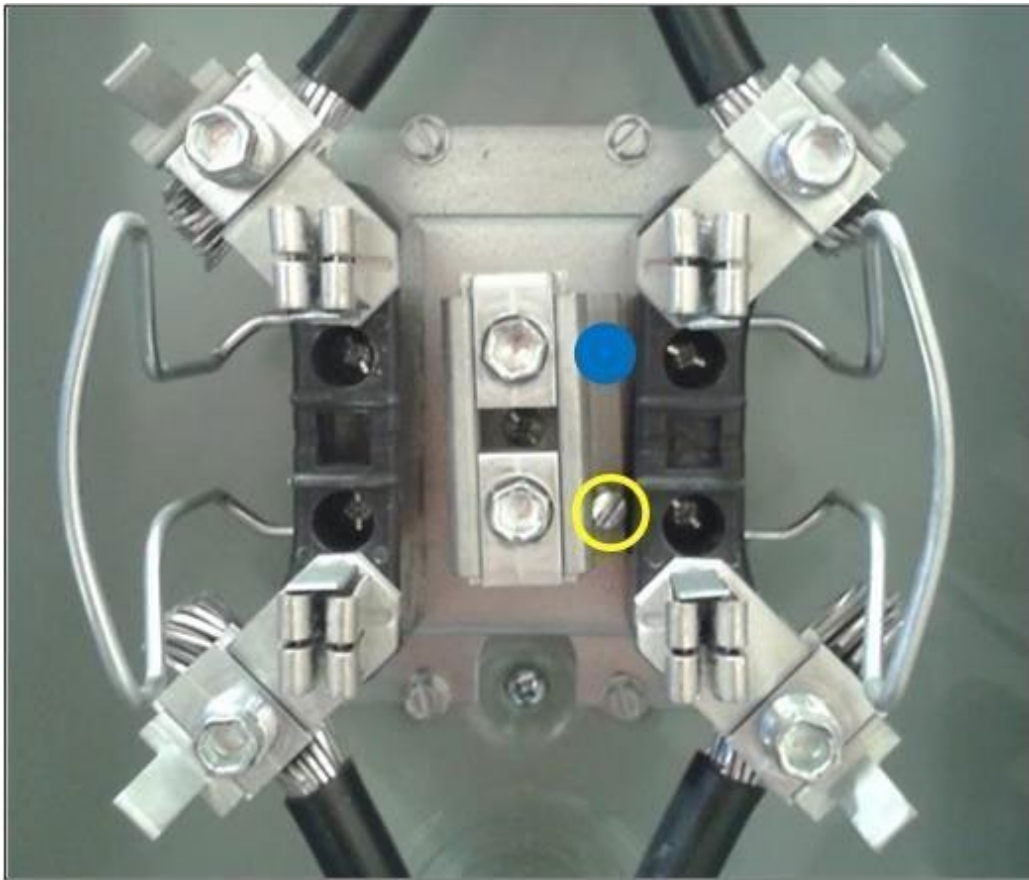


WARNING **ALL METER SOCKETS** require a neutral conductor pigtail to be attached from the rear of the MSA to a neutral point inside of the meter socket. Failure to install a neutral conductor may result in damage to equipment and void the manufacturer's warranty.

It is the responsibility of the MSA installer to ensure a white neutral pigtail is installed with **every unit.**

1. Install a hot jaw safety cover and/or insulation blanket over energized parts if the meter socket must remain energized.
2. Identify the method to terminate the neutral pigtail inside the meter socket. **Figure 10** 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 10 – 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.



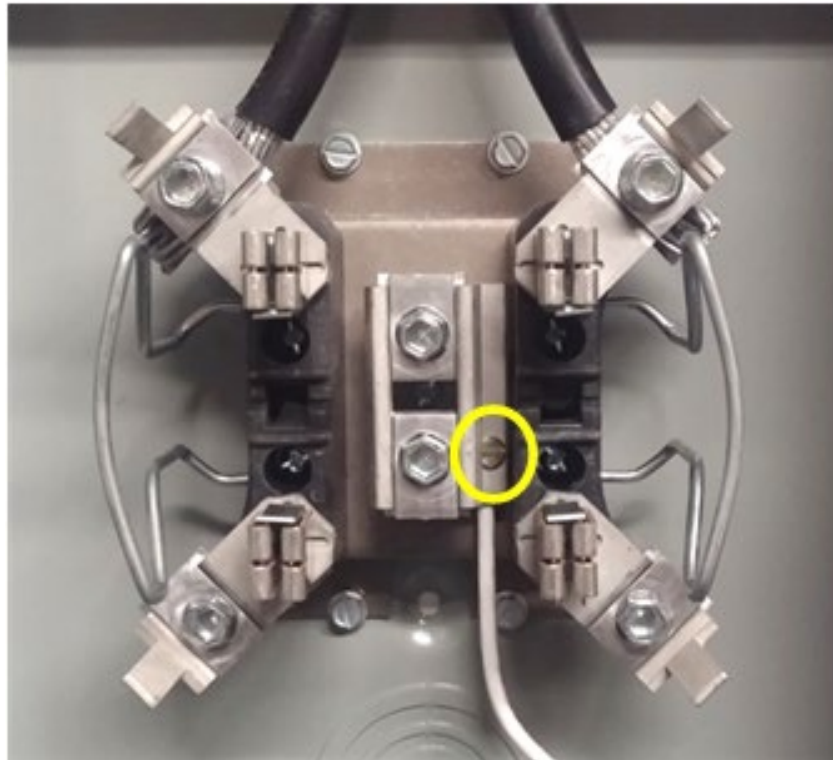
NOTE – In case an accessory position is unavailable: As of January 1, 2023, **NEC 230.46** requires pressure connectors and devices for splices and taps installed on service conductors shall be marked “suitable for use on the line side of the service equipment” or equivalent. If no product is available 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)**.



WARNING – Terminate the neutral pigtail using a method acceptable to the utility and the AHJ.

3. Confirm energized parts are isolated with appropriate insulating material. See **Figure 9**.
4. Terminate the neutral pigtail to the meter socket using a spare accessory as shown in **Figure 11** (preferred), or by another method approved by the utility and the AHJ.

Figure 11 – Terminate the Neutral to the Meter Socket



5. Trim, strip and route the neutral conductor within the meter socket (**Figure 12**) in a manner to avoid damaging the insulation. Position the other end to terminate near the top and center of the MSA.

Figure 12 – Route the Neutral Within Meter Socket



6. For ring type meter sockets, reinstall the meter cover while routing the neutral lead through the cover opening (**Figure 13**). For ringless meter sockets, connect the neutral lead to the MSA before reinstalling the cover (see step #9).

Figure 13 – Reinstall the Ring-Type Cover



7. Remove the junction box from the MSA body by hand, pulling it straight upward.
8. Strip $\frac{1}{2}$ " (approximately 13mm) of insulation from the neutral pigtail furnished with unit.
9. Terminate the neutral pigtail to the MSA using a $\frac{1}{4}$ " flat blade screwdriver as shown in **Figure 14**.

Figure 14 – Terminate the Neutral to MSA



10. Torque the neutral connection at the MSA to 45 in-lbs. for #6 AWG or #4 AWG. For #3 AWG, torque to 50 in-lbs.

INSTALL THE MSA INTO THE METER SOCKET

1. Confirm the MSA circuit breaker is in the open (OFF) position. See **Figure 15**.

Figure 15 – Verify MSA circuit breaker is open (OFF)



2. Remove the temporary insulation protection.
3. Shut the circuit breaker cover.
4. Ensure the MSA is positioned with field wiring contacts at the top and circuit breaker at the bottom.
5. Align the MSA stabs with the socket jaws, ensuring all wire and additional terminations will avoid non-insulated parts within the meter socket.
6. Quickly and forcefully insert the MSA into the meter socket.
7. **Ensure the MSA stabs are securely seated in the meter socket jaws. The MSA should not move freely once properly seated.**

8. For ringless meter sockets, reinstall the meter socket cover over the MSA, taking care not to cause damage. Tight clearances may necessitate manipulation of the cover around the MSA. See **Figure 16**.

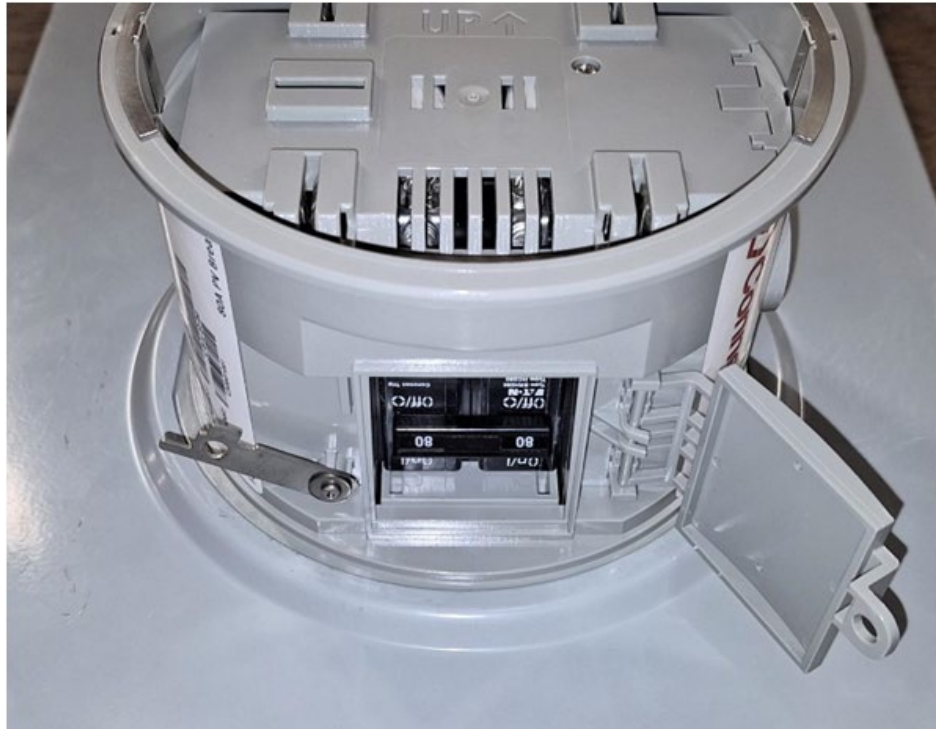
Figure 16 – Reinstall the Meter Socket Cover



9. For ring type meter sockets, install a locking ring to secure the MSA to the meter socket cover.

10. Verify the meter socket cover is fully engaged. Confirm the circuit breaker cover opens freely. See **Figure 17**.

Figure 17 – Circuit Breaker Cover



REINSTALL THE UTILITY METER



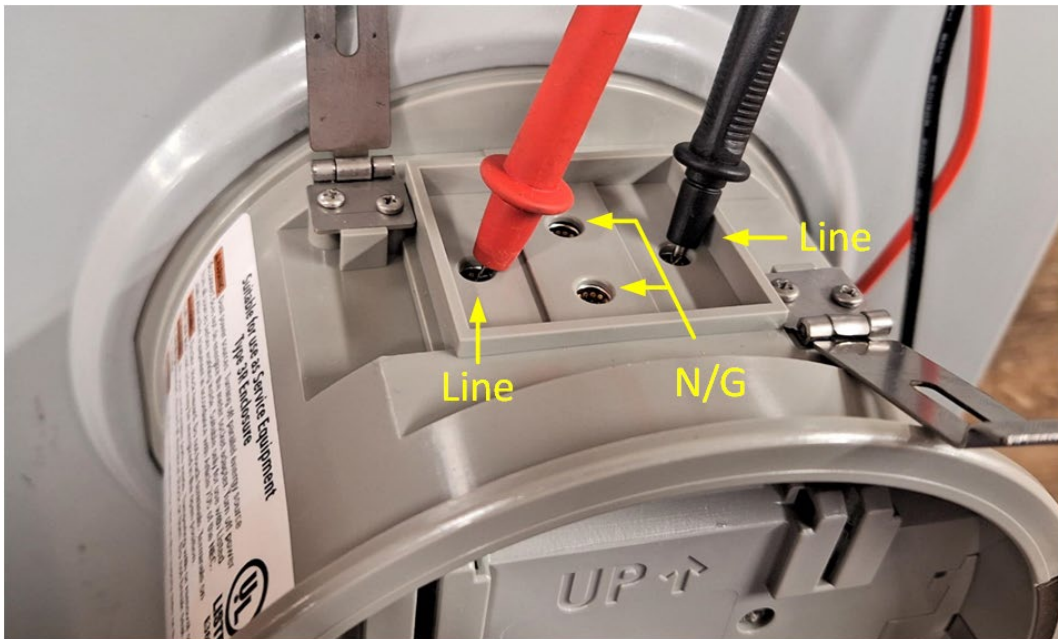
WARNING - This will energize the line side terminals at the service disconnect. Use a “Meter Grabber™” or similar tool.

1. Align the utility meter stabs with the MSA jaws.
2. Firmly press the meter into the MSA, ensuring a secure fit.
3. Install a lock ring to secure the utility meter to the MSA.

VERIFY THE VOLTAGE AT THE MSA

1. Place the MSA circuit breaker in the closed (ON) position.
2. Using proper PPE, verify the presence of appropriate service voltage at the top of the meter collar as shown in **Figure 18**. Check L1-L2, L1-N/G, and L2-N/G. Do not proceed with installation until the voltages meet expected values.

Figure 18 – Verify the Voltage at the Quick-Connect Contacts



3. Return the MSA breaker to the open (OFF) position, then verify the contacts are **deenergized**.
4. Shut the cover to the circuit breaker and lock it out until the PV/DER wiring is interconnected.

INSTALL THE MSA JUNCTION BOX

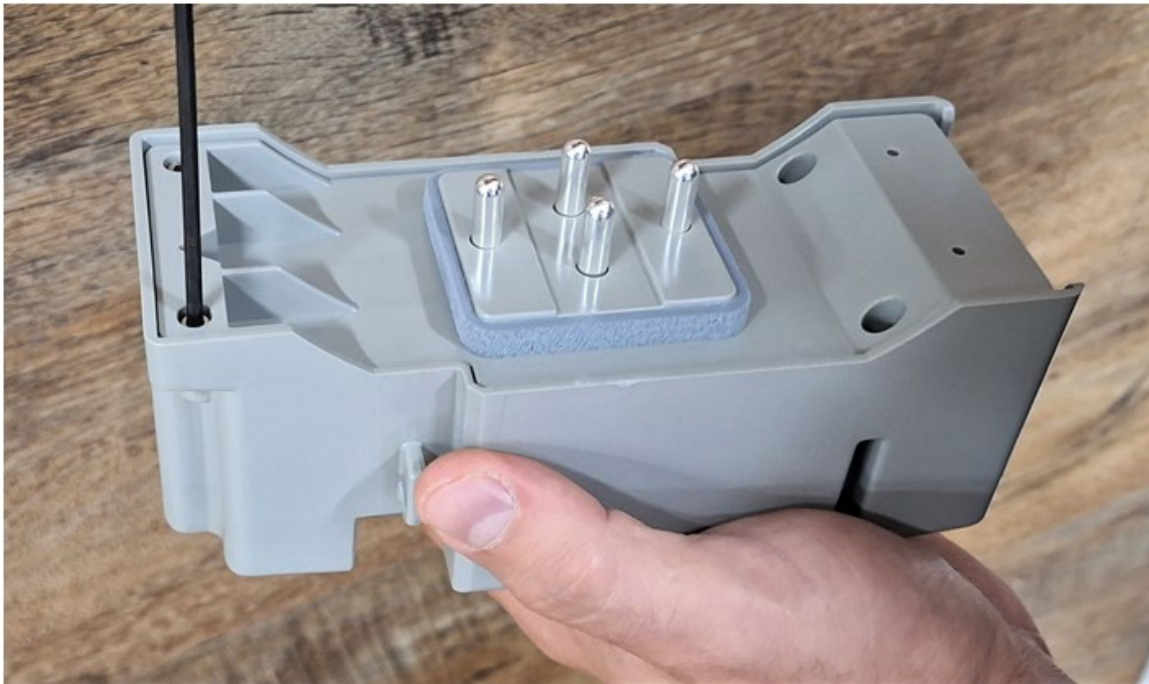
1. If the PV/DER wiring is to be performed at this time, refer to the “[INTERCONNECT THE PV/DER WIRING](#)” section of this document. Otherwise, complete the installation to make the assembly weatherproof and safe.
2. Confirm the MSA circuit breaker is in the open (OFF) position and locked out.
3. Flip the junction box locking clasps open as shown in **Figure 19**.

Figure 19 – Junction Box Locking Clasps



4. Confirm the 7/64" screws on the bottom of the junction box (**Figure 20**) are torqued to 8 in-lbs. in case they loosened during shipping.

Figure 20 – Torque the Junction Box Screws



5. Install the junction box by aligning its contact pins with the sleeves embedded in the MSA body and pressing firmly downward. Seal the conduit entry hole by pressing in the provided plug as shown in **Figure 21**.

Figure 21 – Junction Box Installation



6. Reposition the locking clasps to secure the junction box.
7. Install tamper-prevention seals on the lock rings, the meter socket cover, and the junction box clasps as shown in **Figure 22** unless directed otherwise by the utility or the AHJ.

Figure 22 – Tamper-Prevention Seals



8. Verify with the homeowner that any alternate/backup power solutions are in position to restore utility power to the service equipment, then restore utility power.
9. The installation of the MSA is complete and ready for PV/DER interconnection.

INTERCONNECT THE PV/DER WIRING

ITEMS REQUIRED FOR PV/DER INSTALLATION



NOTE – The following items (provided by the installer) are required to connect PV/DER wiring to an MSA:

Qty.	Item
------	------

- | | |
|-------|---|
| 1 | One or more torque drivers to cover a range from 2 to 50 in-lbs. |
| 1 | 7/64" hex key. |
| 1 | 7/64" hex 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 cutters. |
| 1 | Wire strippers. |
| 1 | Calibrated digital volt-ohmmeter or other suitable metering equipment. |
| 1 lot | Tools and field wiring materials to install PV/DER raceway to the MSA junction box. Use 1" liquidtight flexible nonmetallic conduit type LFNC with an approved connector to enter the solar meter adapter junction box. |
| 1 lot | Tamper-prevention seals. (Only two are furnished with the MSA). |

SAFETY EQUIPMENT



WARNING – PV/Interconnection wiring must be performed by qualified personnel only.
Follow your employer's requirements for personal protective equipment (PPE) and procedures.

INSTALL THE PV/DER WIRING AT THE SOLAR METER ADAPTER JUNCTION BOX



NOTE – The reversible junction box enables conduit entry from the left or right side of the meter. **IMPORTANT: Provide enough slack (i.e., a service loop or “drip loop”) in the flexible conduit to permit junction box removal (pulling straight up a minimum of 2 inches).**



NOTE – The MSA should be wired **first**, and the other end (such as an ac PV disconnect switch or PV production meter) second. It is easier to terminate the conductors at the MSA junction box by wiring it first.

1. Use type THHN insulated, **copper** conductors only. Select the wire gauge by following its 75°C ampacity .
2. Verify the PV/DER power production source 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 Solar Meter Adapter circuit breaker in open (OFF) position, shut the breaker cover and lock it out following your company’s lockout/tagout (LOTO) practices.
5. Follow procedures for removing the tamper-prevention seals from the junction box clasps.
6. Flip open the junction box clasps.
7. Pull the junction box up by hand to remove it from the Solar Meter Adapter body. Once removed, ensure that no moisture or debris enters the pin-to-sleeve area of the collar while wiring the junction box. See **Figure 23** on the next page.

Figure 23 – Junction Box Removed



8. Using a 7/64" hex key, remove the bottom cover of the junction box, taking care not to damage the gasket material surrounding the green contact assembly. **TAKE CARE NOT TO LOSE THE 7/64" SCREWS.**
8. Remove the 1" plug from the junction box and identify the junction box terminals. See **Figure 24.**

Figure 24 – Junction Box Terminals



9. Install the type LFNC conduit connector onto the junction box, then pull the PV/DER wiring through the conduit connector.
10. Strip the insulation exposing wire $\frac{1}{2}$ " (approximately 13 mm).
11. Slide each conductor into its individual lug. Ensure all strands from each conductor enter the screw terminal area.
12. Tighten the screw terminals, ensuring that only the copper conductor is being compressed (**not** the insulation).
13. Terminate the wiring to the terminal block and tighten by hand to hold the conductors in place.
14. Perform a gentle "pull-test" by hand to ensure there are no loose connections.

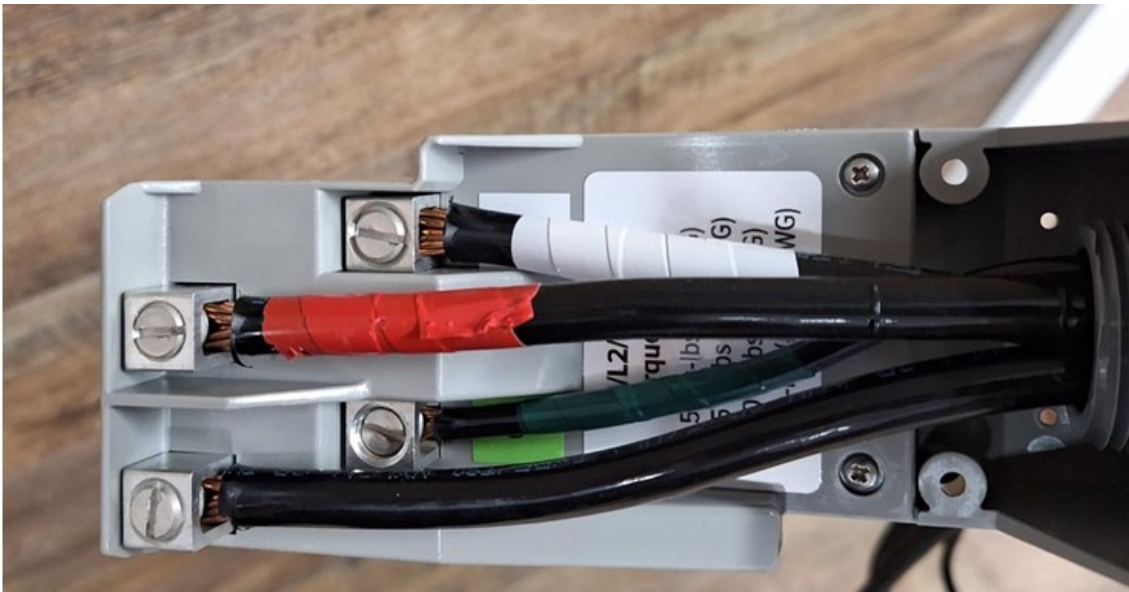
Torque each screw terminal according to conductor size. See **Figure 25**.

#8 AWG 40 in-lbs.

#6-4 AWG 45 in-lbs.

#3 AWG 50 in-lbs.

Figure 25– Wiring at Terminal Block



15. Route the excess slack back through the conduit connector and reassemble the junction box.
16. Reinstall the 7/64" hex cap-head screws and torque to 8 in-lbs.
17. Slide the raceway over the wiring and secure it to the raceway connector.

INSTALL THE JUNCTION BOX

1. Align the pins of the junction box over the pins embedded within the Solar Meter Adapter as shown in **Figure 26**.

Figure 26 – Align the Junction Box Pins



2. Press firmly down on the junction box and ensure it is securely seated.

3. Secure the junction box with the metal clasps in front of and behind the box. See **Figure 27**.

Figure 27 – Secure the Clasps



4. Install two tamper-resistant seals – one each at the front clasp and rear clasp as shown in **Figure 28**.

Figure 28– Tamper-Prevention Seals

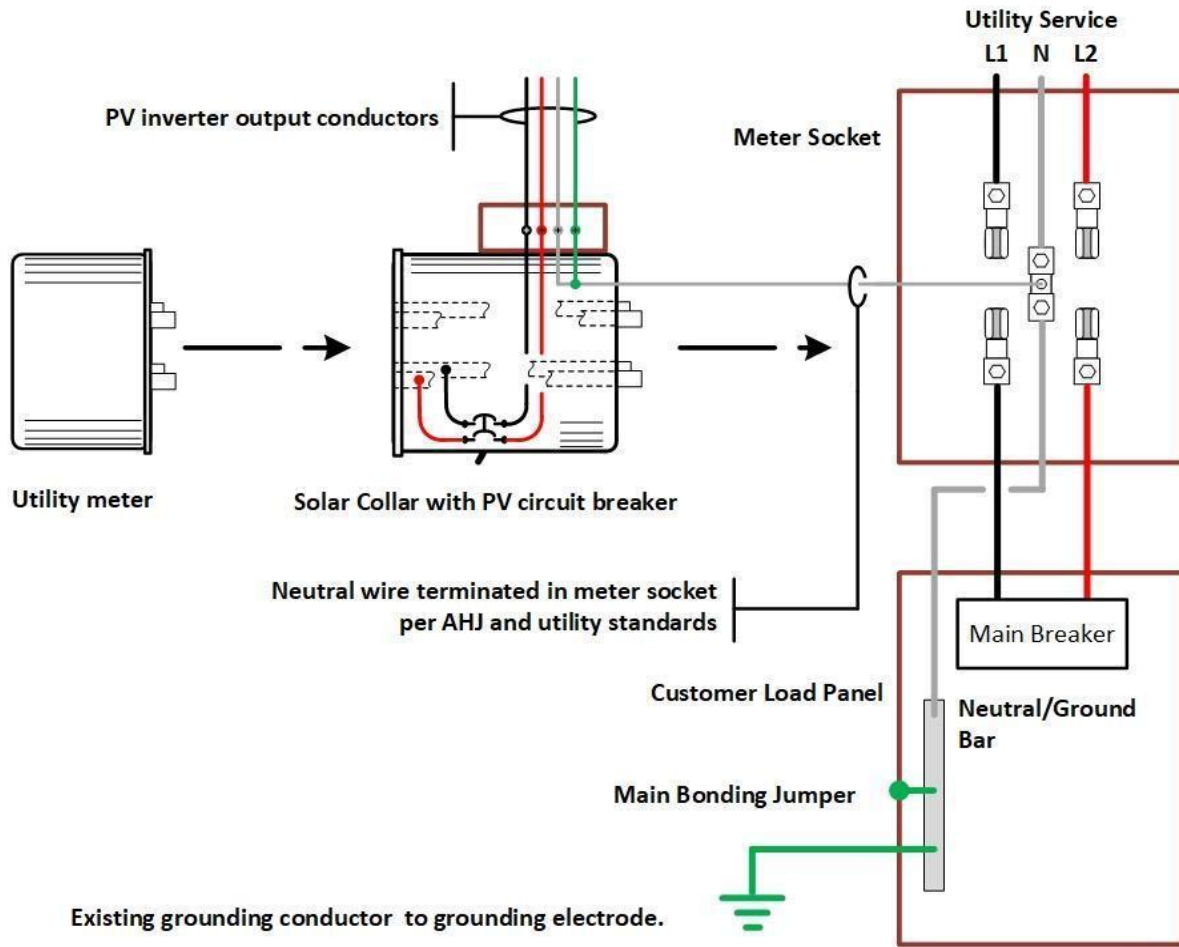


COMPLETE THE CONDUIT AND WIRING, ENERGIZE AND TEST

1. Install, support, and terminate the other end of the raceway and conductors to the next enclosure (such as an ac PV disconnect or PV production meter). **IMPORTANT: Provide enough slack (i.e., a service loop or "drip loop") in the flexible conduit to permit junction box removal (pulling straight up a minimum of 2 inches).**
2. Remove the lockout/tagout (LOTO) device and place the MSA circuit breaker in the closed (ON) position.
3. Test for proper voltage and polarity at the next enclosure.
4. Follow your company's safety procedures to extend the wiring as needed.
5. Follow the manufacturer's instructions to commission the PV/DER system.

APPENDIX

SOLAR PV INTERCONNECTION WIRING EXAMPLE – LOAD SIDE MSA



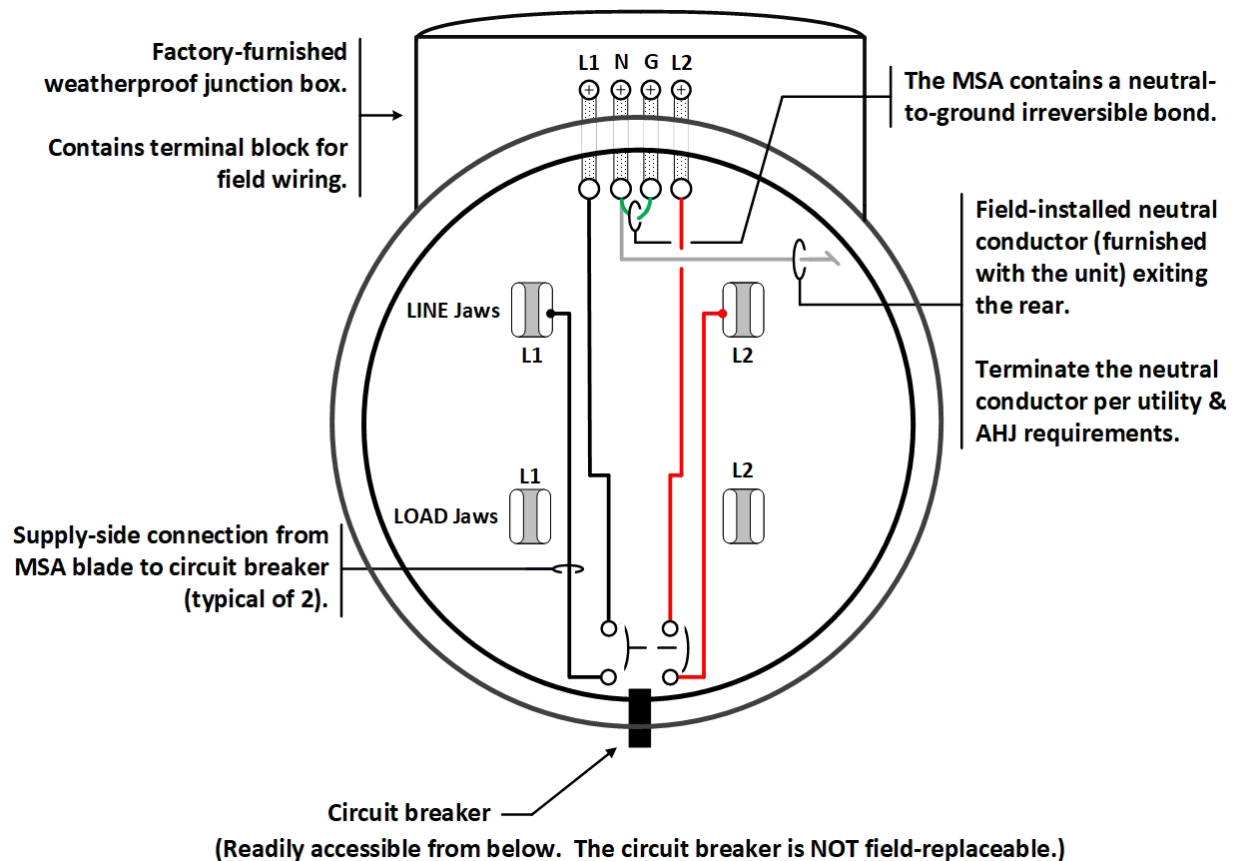
NOTE – The MSA creates a supply-side PV/DER interconnection on the load side of the meter. The MSA contains a factory-installed neutral-to-ground bond.



WARNING – The MSA is only suitable for use on the supply side of the service disconnecting means.

The MSA must be installed with the junction box at the top and the integrated circuit breaker at the bottom. Do not install the MSA in any other orientation.

POWER WIRING SCHEMATIC – LINE SIDE OF METER INTERCONNECTION



NOTE –Interconnection at the line side of the billing meter is available for utility-owned systems only. The MSA contains a factory-installed neutral-to-ground bond.



WARNING – The MSA is only suitable for use on the supply side of the service disconnecting means.

The MSA must be installed with the junction box at the top and the integrated circuit breaker at the bottom. Do not install the MSA in any other orientation.

CONNECTDER SOLAR MSA MODEL NUMBERS

LOAD SIDE OF METER INTERCONNECTION

FORM 2S METER TYPES					
Model Number	Product Version	Grid Interconnection	No. of Jaws	AIC Rating	Overcurrent Protection Rating
C-B-4-10-40	Simple	Load Side	4 Jaws	10kAIC	40 Ampere
C-B-4-10-60	Simple	Load Side	4 Jaws	10kAIC	60 Ampere
C-B-4-10-80	Simple	Load Side	4 Jaws	10kAIC	80 Ampere
C-B-4-22-40	Simple	Load Side	4 Jaws	22kAIC	40 Ampere
C-B-4-22-60	Simple	Load Side	4 Jaws	22kAIC	60 Ampere
C-B-4-22-80	Simple	Load Side	4 Jaws	22kAIC	80 Ampere

FORM 12S METER TYPES					
Model Number	Product Version	Grid Interconnection	No. of Jaws	AIC Rating	Overcurrent Protection Rating
C-B-5-10-40	Simple	Load Side	5 Jaws	10kAIC	40 Ampere
C-B-5-10-60	Simple	Load Side	5 Jaws	10kAIC	60 Ampere
C-B-5-10-80	Simple	Load Side	5 Jaws	10kAIC	80 Ampere
C-B-5-22-40	Simple	Load Side	5 Jaws	22kAIC	40 Ampere
C-B-5-22-60	Simple	Load Side	5 Jaws	22kAIC	60 Ampere
C-B-5-22-80	Simple	Load Side	5 Jaws	22kAIC	80 Ampere

LINE SIDE OF METER INTERCONNECTION – REQUIRES UTILITY APPROVAL

FORM 2S METER TYPES					
Model Number	Product Version	Grid Interconnection	No. of Jaws	AIC Rating	Overcurrent Protection Rating
C-T-4-10-40	Simple	Line Side	4 Jaws	10kAIC	40 Ampere
C-T-4-10-60	Simple	Line Side	4 Jaws	10kAIC	60 Ampere
C-T-4-10-80	Simple	Line Side	4 Jaws	10kAIC	80 Ampere
C-T-4-22-40	Simple	Line Side	4 Jaws	22kAIC	40 Ampere
C-T-4-22-60	Simple	Line Side	4 Jaws	22kAIC	60 Ampere
C-T-4-22-80	Simple	Line Side	4 Jaws	22kAIC	80 Ampere

FORM 12S METER TYPES					
Model Number	Product Version	Grid Interconnection	No. of Jaws	AIC Rating	Overcurrent Protection Rating
C-T-5-10-40	Simple	Line Side	5 Jaws	10kAIC	40 Ampere
C-T-5-10-60	Simple	Line Side	5 Jaws	10kAIC	60 Ampere
C-T-5-10-80	Simple	Line Side	5 Jaws	10kAIC	80 Ampere
C-T-5-22-40	Simple	Line Side	5 Jaws	22kAIC	40 Ampere
C-T-5-22-60	Simple	Line Side	5 Jaws	22kAIC	60 Ampere
C-T-5-22-80	Simple	Line Side	5 Jaws	22kAIC	80 Ampere

CONNECTDER SOLAR MSA SPECIFICATIONS

MECHANICAL SPECIFICATIONS		UTILITY INTERACTIVE SOURCE RATINGS	
ENCLOSURE RATING	NEMA 3R	MAXIMUM POWER	15.36 KW AC using 80-amp DER breaker.
ENCLOSURE TYPE	Injection molded polycarbonate, UL 94 V0 flame rating	MAXIMUM VOLTAGE	240V
COOLING	Natural convection	MAXIMUM CONTINUOUS PV CURRENT	64A
DIMENSIONS (H X W X D)	6.7 x 6.7 x 4.6in collar only 8.6 x 7.0 x 4.6in with junction box	CONTINUOUS COMBINED CURRENT, PV/GRID	200A (load side of meter PV/DER interconnection) 190A (line side of meter PV/DER interconnection)
WEIGHT	4.1 lbs. (1.9kg)	INVERTER WIRING TERMINATION	Terminal block
SHIPPING WEIGHT	5.6lbs. (2.5kg)	GRID CONNECTION TYPE	Split-Ø/3W (2S/4-jaw), Single-/3W (12S/5-jaw),
MOUNTING SYSTEM	Blade interface with 4-jaw or 5-jaw meter socket	GRID TERMINATION METHOD	Blade interface with meter socket for L1/L2, pigtail for neutral
ELECTRIC METER COMPATIBILITY	Type 2S, type 12S	FIELD TERMINAL RATING	75°C
METER SOCKET COMPATIBILITY	Ringless and ring-type meter sockets		
DER INTERFACE POINT	Factory configured, load side. Line side is available for utility use only.		
CONDUIT CONNECTION	1" trade size.		
TERMINAL CONNECTIONS	L1, L2, N, G; Up to #3 AWG wire		
SAFETY INFORMATION		OVERCURRENT PROTECTION	
APPLICABLE SAFETY STANDARDS	UL 414 – Meter Sockets	TYPE	Eaton type BR, Siemens type Q (10 kAIC) Eaton type BRH, Siemens type QH (22 kAIC) Thermal magnetic 240v, externally resettable
FILE NUMBER (STANDARDS)	E361188	OVERCURRENT RATINGS AVAILABLE	40A, 60A, 80A
AMBIENT AIR OPERATING TEMPERATURE RANGE	-22°F to 158°F (-30°C to 70°C)	CURRENT INTERRUPTING RATING	10 kAIC or 22 kAIC rating
AMBIENT AIR STORAGE TEMPERATURE RANGE	-40°F to 176°F (-40°C to 80°C)		

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