PRODUCT MANUAL & INSTALLATION GUIDE

MIM 200 PLUS PE

WARNING:

Do NOT attempt to install MIM 200 PLUS PE without

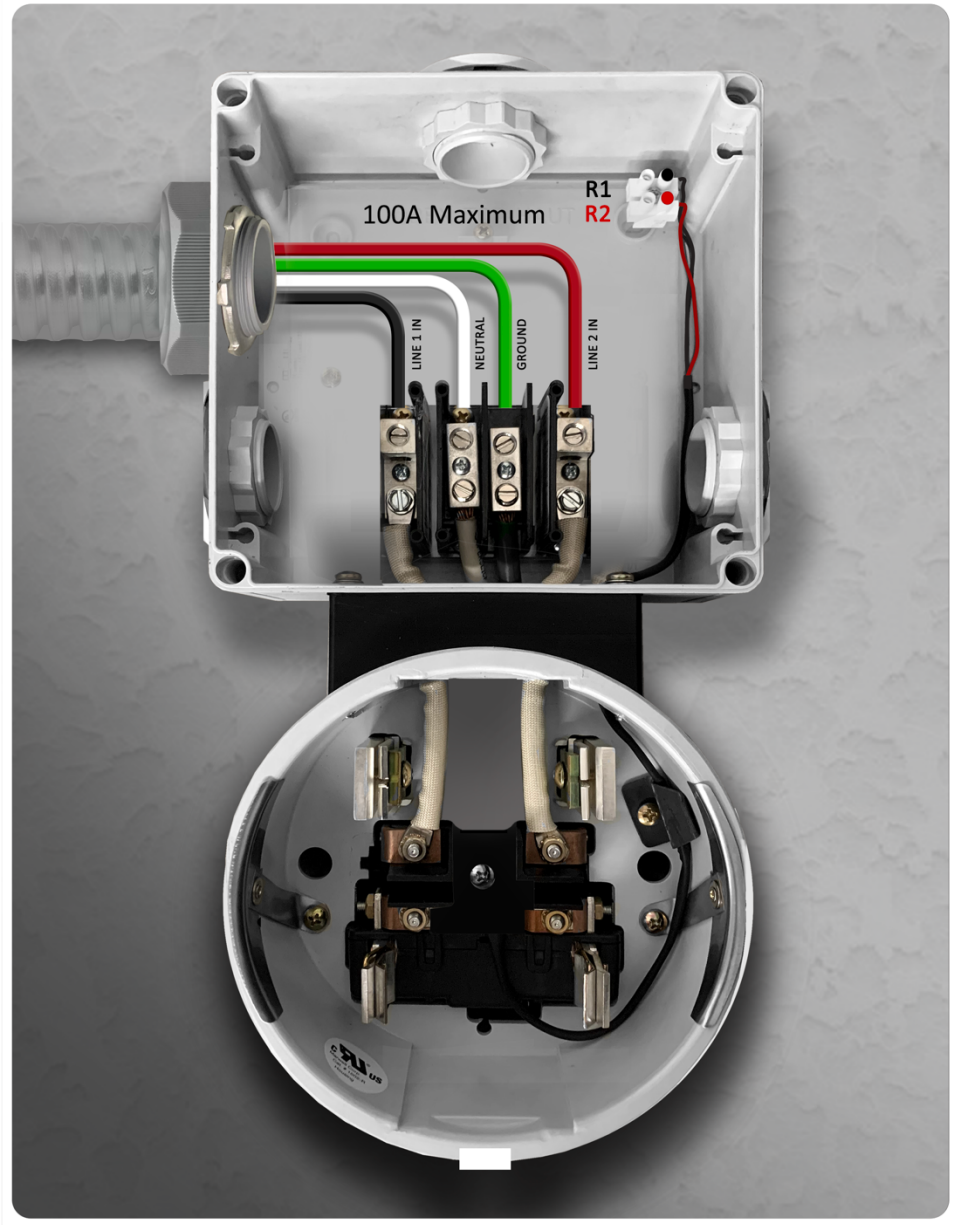
reading the MIM 200 PLUS PE Product Manual & Installation Guide

Caution – For use only with interactive equipment.

Electrical Rating of MIM 200 PLUS PE:



MIM 200 PLUS PE



Technician Will Verify:

- NEC & AHJ compliant electrical service environment.
- Meter socket is breaker protected to 200Amps or less. Main breaker de-rate may be required, as MIM can only be installed on ANY single-phase meter socket of 200Amps or less.
- Adequate clearance of Electrical Panel & Gas Meter.
- Maximum DER connections of 100Amps per leg passing from Solar/Storage (i.e.: 24kW max generation, and DER breakers match and/or do not exceed main breaker rating).
- DER/Generation AC Disconnect installed (AC disconnect or Breaker depending on AHJ).

If any of the conditions are not met, STOP IMMEDIATELY, DO NOT PROCEED WITH INSTALLATION
TAKE PICTURES OF ISSUES, SUBMIT REPORT TO CUSTOMER & LEAD ELECTRICIAN / SUPERVISOR

OBJECTIVE:

By the end of this guide, you should be able to:

- Verify installation and location is appropriate for MIM
- Install the MIM

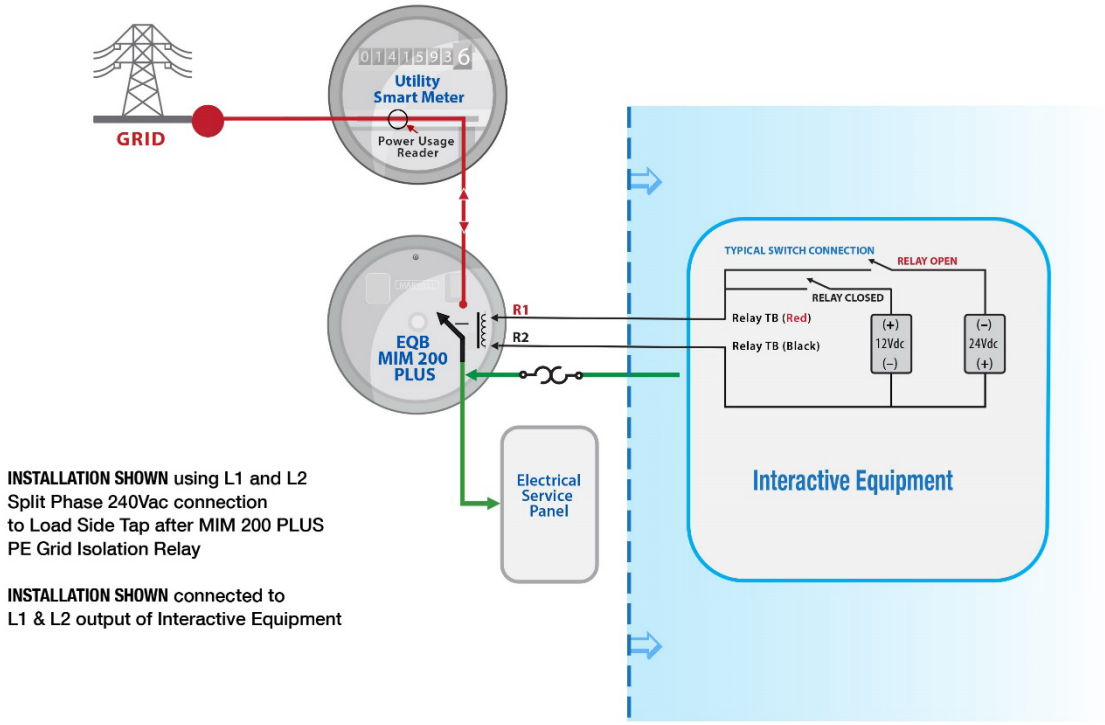
DEVICE DESCRIPTION:

The MIM 200 Plus (Microgrid In a Meter) is a patented and UL 414 SB Listed meter socket adapter, with a built in Grid Isolation switch, Public/Worker Safety Interlock, and 100Amp DER connections After/Behind the Meter on the Load side of the Grid Isolation Switch.

This device enables whole facility/home isolation and electrification upgrades, through a simple plug and play meter adapter located at a facility's meter socket, without the need for costly Main Service Panel Upgrades, allowing for an additional 100Amps of grid interactive backup sources to be quickly and easily surface mounted, streamlining electrification efforts, drastically reducing installation time and costs & AHJ comprehension of backup systems.

The MIM 200 Plus PE features DER connections on the Grid Isolation Switch which are located on the Load Side of MIM adapter (electrically After/Behind the Meter) for uninterrupted delivery of Grid Power to Utility Meter, a mechanically linked Public/Worker Safety Interlock is used to confirm Grid Isolation Switch position, with extensions of the Load Side L1 & L2 busbars (Load "LD1" & "LD2" abbreviated) between the Meter and Main Service Panel, allowing for 100Amps of DER interactive sources per leg, [similar to an RMA/GMA (Marwell Solar Adapter, UL Listed E142068)] on the Load Side of the Meter & After/Behind the Grid Isolation Switch, and does not affect the performance of the utility meter.

Single Line Diagram



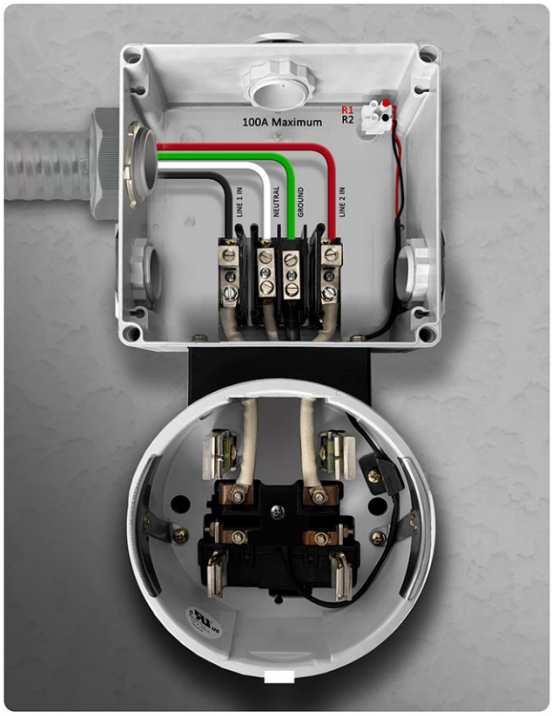
INSTALLATION SHOWN using L1 and L2
Split Phase 240Vac connection
to Load Side Tap after MIM 200 PLUS
PE Grid Isolation Relay

INSTALLATION SHOWN connected to
L1 & L2 output of Interactive Equipment

Physical Connection Points / Wiring Diagram

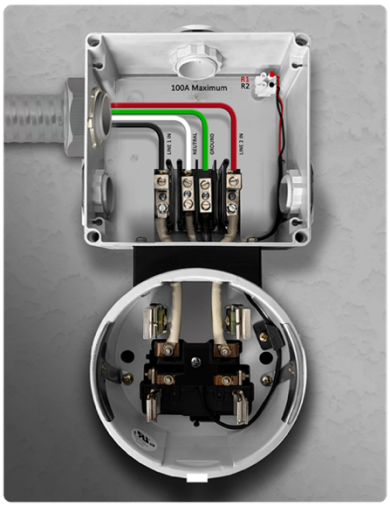
100 Amp Panel Expansion for connection to L1 and L2 In from the L1 & L2 Output Terminals of 240Vac Split Phase Interactive Equipment

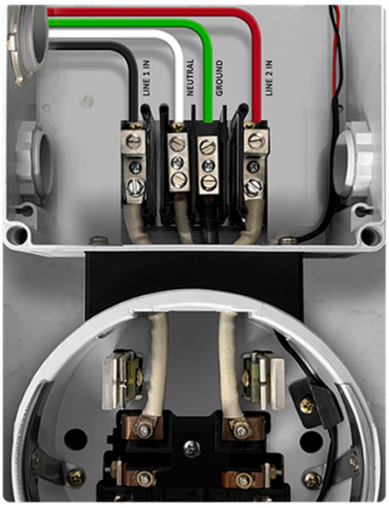
Similar to Marwell Solar Adapter: UL listed E142068 with addition of switchable 200Amp Grid Isolation Relay



MIM Photos







INSTALLATION CHECKLIST & CONSIDERATIONS

All wired connections for Non-Metallic Flexible Conduit (NMFC) shall comply with all local and NEC/NFPA70 requirements. Care shall be taken to prevent damage to internal components when installing conduit fittings. Vent Caps shall NOT be disturbed or removed during the installation of the conduit fittings. Only the two sides and/or top of enclosure shall be used for conduit entrances. DO NOT INSTALL NMFC CONDUIT THROUGH FRONT COVER OF MIM ENCLOSURE.

1. Check device for continuity & test Switch operation on test bench prior to deployment.
- Confirm when switch is opened continuity is lost between Switch meter jaws & LD1 / LD2 (Load side of gird isolation switch) & returns when closed again.
- If possible, determine NMFC position, set in place, and clean enclosure prior to field deployment. Verify clearance requirements per local & NEC/NFPA70 code are met.

2. Verify installation location, address, and customer's service panel compatibility for MIM.
- Verify panel clearance and compatibility before visit with picture supplied by customer.
- Confirm electrical system is up to Code & with no hazardous conditions.
- Notify customer of power loss to facility during installation before turning off main breaker.

3. Download Meter Data (if available).

4. Verify all conductors are de-energized.
- Turn off all AC Disconnects connected to any Generation Sources (open position).
- Turn off Main Breaker (open position), meter kWh will read zero supply.
- Coordinate with local utility to disconnect power prior to installation.
- WARNING - If power is not removed prior to installation, there is a risk of electric shock, arc flash, fire, and serious injury or death.

5. Remove Meter.
- Arc Flash Protection is required for removing and installing Meter, Meter Adapter Jaws, and any work in meter socket. PPE & FR CLOTHING REQUIRED.
- Unlock & remove Meter ring.
- Pull Meter.
- Inspect Meter & Socket for loose connections, overheated socket, or any other hazards.

6. Identify Neutral termination point.
- If no Neutral termination point present in meter cabinet, either install termination lug, or attach to Neutral bus bar in load side of panel.

7. Identify Ground termination point.
- If internal Ground lug is available, connection may be made in meter cabinet.
- External Ground can be used, via load side of electrical panel, UFER, or Ground Rods. Internal MIM Ground wire can be removed if external Ground is used.

8. Measure voltage at Meter Socket.

- Verify both L1 & L2 to Neutral are each 120Vac & 240Vac combined on Grid side.
- Verify no voltages on Load side.

9. Prepare MIM Adapter for Meter Socket Installation.

- Cover Grid terminals in MIM (upper Jaws) with insulating barrier.
- Cover Ground & Neutral wire ends with insulating material (i.e., electrical tape), safely route into meter cabinet.
- Connect Ground wire in meter cabinet (if Ground is not bonded to Neutral, and termination point is NOT available in meter cabinet, disregard and remove internal MIM ground wire and use external ground).
- Connect Neutral to termination point in meter cabinet or to lug in load side neutral bus.

10. Install MIM in Meter Socket.

- Ensure the insulating barrier is in place on MIM Jaws before inserting MIM into the meter socket.
- Prepare locking MIM meter socket ring loosely on back of MIM.
- Press MIM into Meter Socket.
- Secure MIM in Meter Socket with locking Meter Ring.

11. Open upper MIM enclosure lid.

- Secure Non-Metallic Flex conduit & connector in upper enclosure. All connections for NMFC shall comply with all local and NEC/NFPA70 requirements.
- Feed appropriately sized Subpanel wires into MIM's upper enclosure. All wired connections shall comply with all local and NEC/NFPA70 requirements. DER CONNECTIONS OF 100 AMPS MAX.

12. Secure Disconnect Subpanel wires to corresponding termination points in MIM Enclosure, 100Amp Maximum Breaker

- Black to LAST1, Red to LAST2.
- White N to Neutral (in meter cabinet or load side termination lug).
- Green G to Ground (if bonded Neutral or present in meter cabinet, otherwise secure external ground prior to energizing system).
- Conduct Ohm check between LD1 & LD2 to confirm no phase-to-phase short is present.
- Red control wire to Positive (+, R1), Black Control wire to Negative (-, R2), minimum 120Vac rating 300V minimum for R1/R2 to share conduit with LD1/LD2/NEUTRAL/GROUND, utilize supplied terminal block or connectors if applicable in MIM.
- DANGER –disconnecting means and overcurrent protection required for external circuits. Follow all applicable installation codes.

13. Conduct Voltage checks to confirm all wires are properly terminated.

- LD1, LD2, against Neutral, confirm voltages again after meter has been replaced and secured.

14. Test Grid Isolation Switch operation
    - Confirm ohm reading between lower Meter Jaws on MIM Switch and DER Lugs, (LD1 / LD2).
    - Change Switch state, confirm reading has changed from Continuity to OL or vice versa.
    - Remove all insulation barriers and/or electrical tape used for installation.
15. Return Meter to new MIM adapter socket or replace with new Utility Meter.
    - Secure with locking Meter ring.
16. Conduct Voltage checks to confirm all wires are properly terminated.
    - LD1, LD2, against Neutral, confirm voltages again after meter has been placed.
    - Change Switch state to Open and confirm no Grid voltages present in MIM upper enclosure.
    - Change Switch state to Closed position to reactivate Grid supply to service panel.
17. Return MIM enclosure lid to enclosure.
    - Once secured, place lockout tags on corners to prevent tampering.
18. Coordinate with local utility to reconnect power.
    - Close Main Breaker.
    - Verify Meter is operating again with kWh load readout on screen.
19. Place all required Placards & Stickers.
20. If no Generation sources connected to AC Disconnect, place a lock to prevent tampering.
21. Complete Installation.
    - Service Record Forms.
    - Photographs of Installation.
    - Photographs of External Grounding (If applicable).
    - Notify customer of completed installation.

Notes: