# *inCharge* EV Outlet

CET-H4-EV1-10A-1
CET-H4-EV1-15A-1




## Product User Manual

**Safety Notices** **3**
**Compliance with Local Wiring Rules and Network Requirements** **4**
**Introduction** **5**
**Technical Specifications** **6**
**Product Features** **8**
**Installation Guide** **9**
Wiring Examples 9
Single-Phase System 9
Mount the Enclosure Base 10
Connect LV Power Supply Cables 16
Connect Ethernet Cable if Required 17
Assemble Enclosure and Perform Functional Tests 18
**Configuration and Testing** **19**
**Reset Button** **20**
Momentary Press and Release 20
Long Hold and Release 20
**Connection Status Indications** **21**
**Initiate a Standard Charging Session** **21**
To Begin a Charging Session: 21

# Safety Notices

1. Please read and follow the warnings and instructions contained in this document carefully.

2. This product must not be operated outside of the specified Operating Temperature Range.

3. Do not connect this product to a power supply outside of the range specified in the Technical Specifications.

4. This device should be installed by technically qualified personnel. Failure to install in compliance with national and local electrical codes and according to recommendations provided by Combined Energy Technologies may result in electrical shock or fire hazard, unsatisfactory performance, or equipment failure.

5. Repair and maintenance of this product can be performed by qualified service personnel only. Do not attempt to repair the product if damaged. If the product is damaged or inoperable please contact Combined Energy.

6. When installed, a readily accessible disconnect device (e.g. circuit breaker) must be incorporated external to this product.

# Compliance with Local Wiring Rules and Network Requirements

The recommendations in this document do not relieve Installers of their responsibility to ensure that all wiring operations are performed in compliance with the latest version of AS/NZS 3000 and any additional requirements imposed by the DNSP (Distribution Network Service Provider). Specific DNSP requirements may include meeting higher levels of protection. Where there is conflict between the recommendations in this document and the requirements of AS/NZS 3000 and/or DNSP network connection rules, the latter should take precedence.

It is the responsibility of Installers to comply with the requirements of any other authority who has jurisdiction over the installation. It is also the responsibility of the Installer to ensure they are suitably qualified under relevant state and federal laws to legally carry out the installation works.

Care must be taken to ensure both mains (LV – Low Voltage) wiring and communications (e.g. Ethernet) cabling is installed strictly in accordance with AS/NZS 3000 (latest version) requirements for “Segregation of different voltage levels” and that AS/NZS 3000 (latest version) requirements of double insulation are met for LV **and** ELV wiring.  Any further DNSP network connection requirements beyond those mandated by AS/NZS 3000 (latest version) must also be adhered to.

Note: When calculating “highest voltage present” as defined in AS/NZS 3000, in 3 phase installations the highest voltage present is across phases and hence greater than that of a single phase installation.

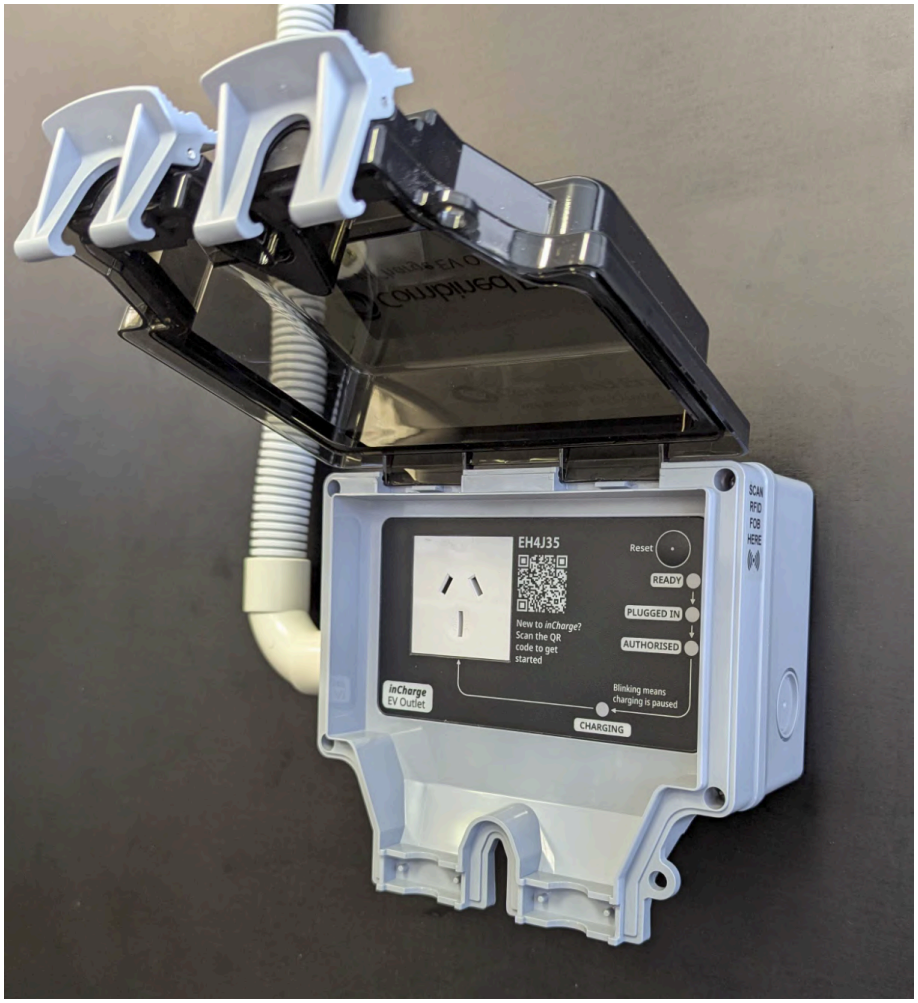
# Introduction

The CET-H4-EV1-xA-1 provides a single 10A / 15A outlet for controlling the power supply to user-supplied Portable EV Chargers in residential apartment buildings.

This product is used by apartment building managers to track tenant EV energy consumption and cost for reimbursement purposes, and to manage the total EV charger load to stay within building electrical supply constraints. The product can also be used to provide access control and energy accounting for general, non-EV loads.

The product uses RFID authentication to authorise charging sessions, and controls the power supply to the Portable EV Charger by means of an internal relay.

Network connectivity is provided by either a wired ethernet connection, or Power Line Communications (PLC).



# Technical Specifications

**Type:** Combined Energy *inCharge* EV Outlet

**Model:**

CET-H4-EV1-10A-1 (10A socket)
CET-H4-EV1-15A-1 (15A socket)

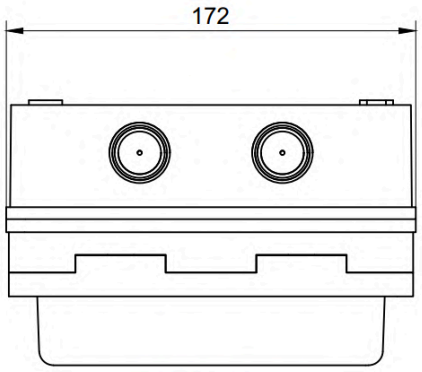
**Power Supply:** 240V~, 50 Hz

**Average power consumption:** <8W

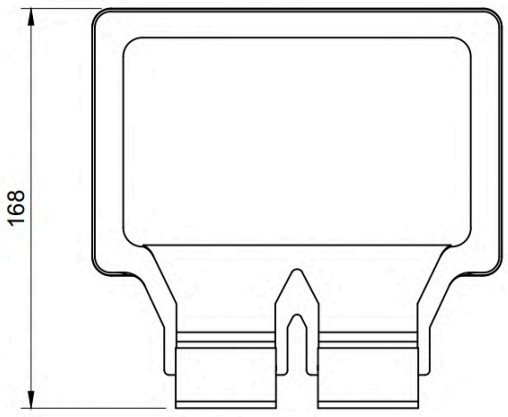
**Max Load:**

| | |
|---|---|
| CET-H4-EV1-10A-1 (10A socket) | 10 A |
| CET-H4-EV1-15A-1 (15A socket) | 15 A |

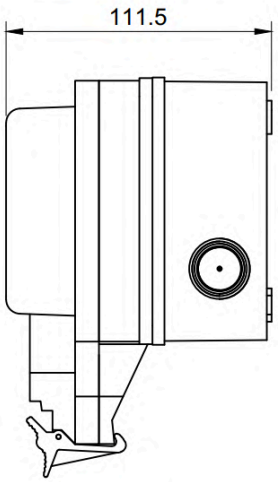
**Dimensions:** 172 x 168 x 111.5mm




Top View




Front View




Right View

**Mass:** 0.78kg

**Operating Temperature Range:** -5C to +50C

**IP Rating:** IP53 (when installed and operated according to the instructions in this User Manual)

**Metering:** Complies with NMI 14/4/0 (Class B Accuracy)

**Standards:**

- **AS/NZS 60669.1:2020** Switches for household and similar fixed electrical installations, Part 1: General Requirements
- **AS 60669.2.1:2020** Switches for household and similar fixed electrical installations — Part 2-1: Particular requirements — Electronic control devices
- **AS/NZS 62368.1:2022** Audio/video, information and communication technology equipment, Part 1: Safety requirements
- **EN 50561-1** Electromagnetic Compatibility for PLC products
- **AS/NZS 4268:2017 Amd 1:2021** Radio equipment and systems - Short range devices - Limits and methods of measurement

# Product Features

The *inCharge* EV outlet is a simple and affordable solution for increasing access to charging in shared parking areas, allowing plug-in vehicle chargers up to 15A to be coordinated together with Level 2 chargers within the constraints of the building electrical system.

**Power Metering:**

- Class 1 meter, current-transformer operated type

**Communications Interfaces:**

- Power-Line Communications (PLC) modem
- Wired Ethernet (RJ45, 10/100 Base-T)
- RFID/NFC

**Outputs:**

- 1 x 10A or 15A outlet (see rating label)

**User Interfaces:**

- 1 x Front panel button
- 4 x LED status indicator

**Included Accessories:**

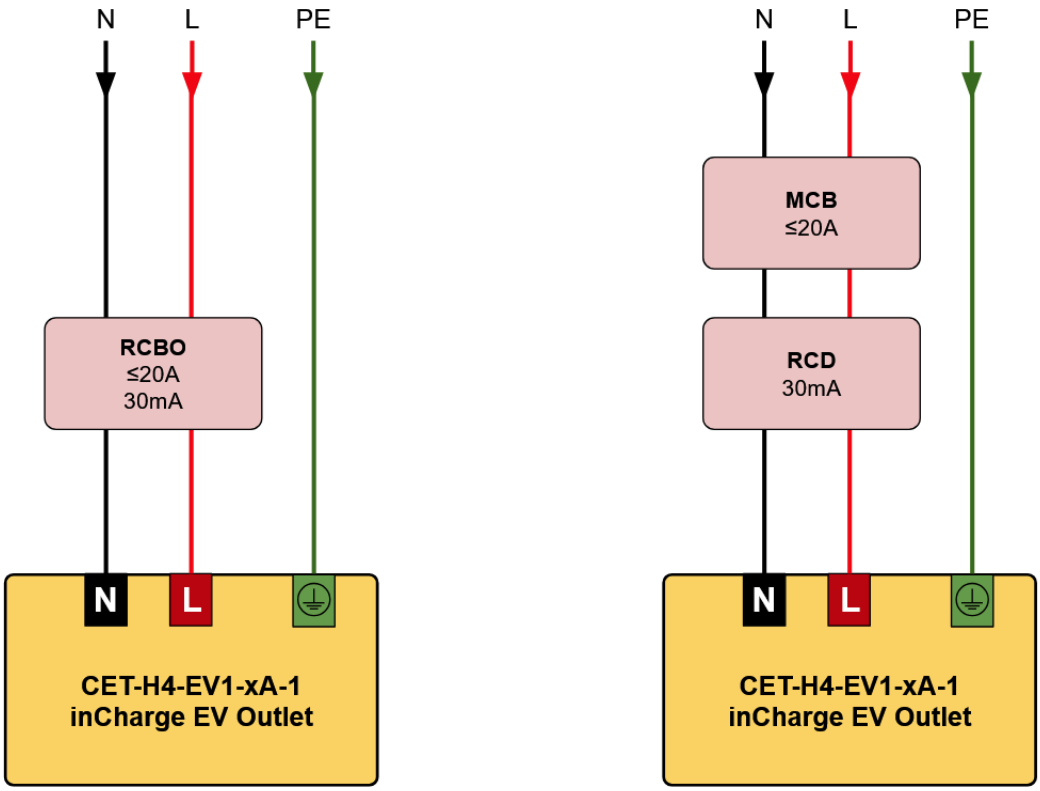
- Enclosure mounting accessories

# Installation Guide

## Wiring Examples

### Single-Phase System

The following are example wiring diagrams for a typical single-phase installation:




Each CET-H4-EV1-xA-1 must be individually protected by an upstream protection device (or a combination of devices) with:

- Overcurrent protection with rated current (‘trip current’) of **≤20A**
- Earth-leakage protection (RCD) of at least Type A, with an operating current of **30mA** or less.

## Mount the Enclosure Base

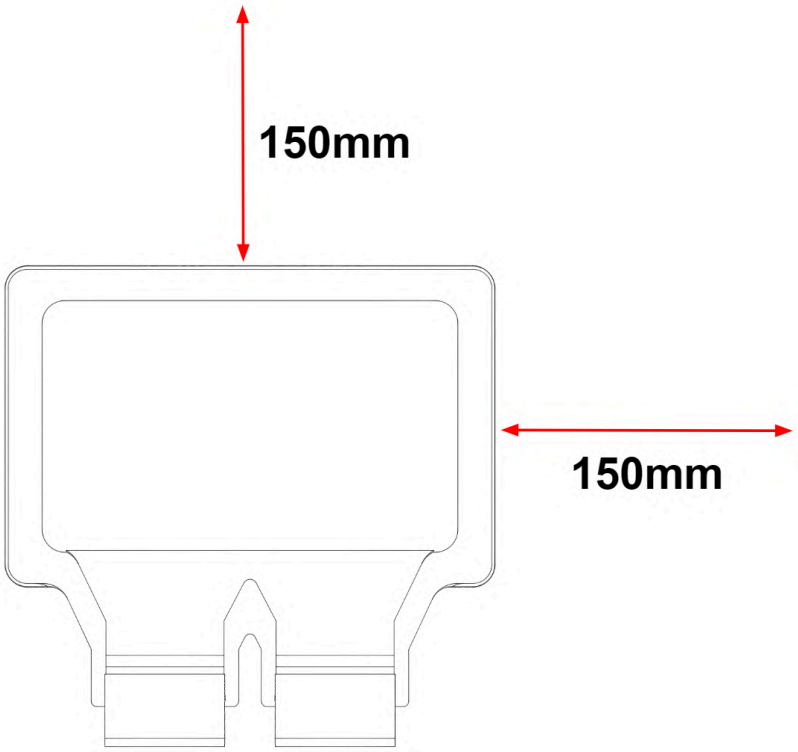
1. Select a location to mount the CET-H4-EV1-xA-1. Consider:

    - Typical installation patterns for indoor/outdoor powerpoints as applicable (with reference to local installation rules).

    - Sufficient space is required on the right-hand side of the enclosure, for user access to the RFID scan point.

    - Sufficient space is required for the lid to fully open.

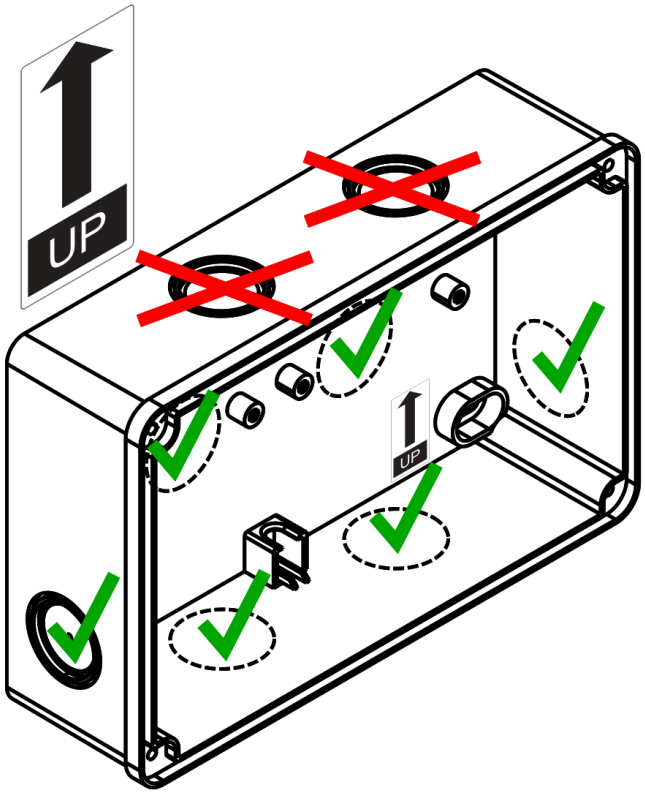
      **Note: Maintain a 150mm clearance on the top and right sides of the unit to allow proper lid and RFID access:**



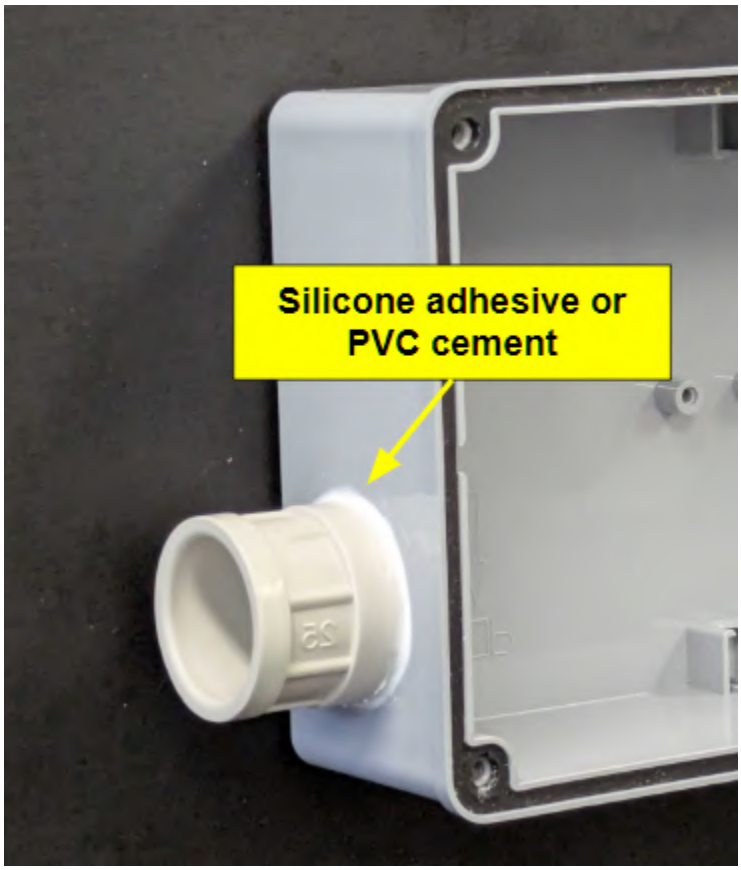

2. All conduit ports and mounting screw positions must be sealed with silicone adhesive or PVC cement to maintain the product's IP rating.

   **Note: The product IP rating (IP53) is only valid when the lid is clipped shut.**

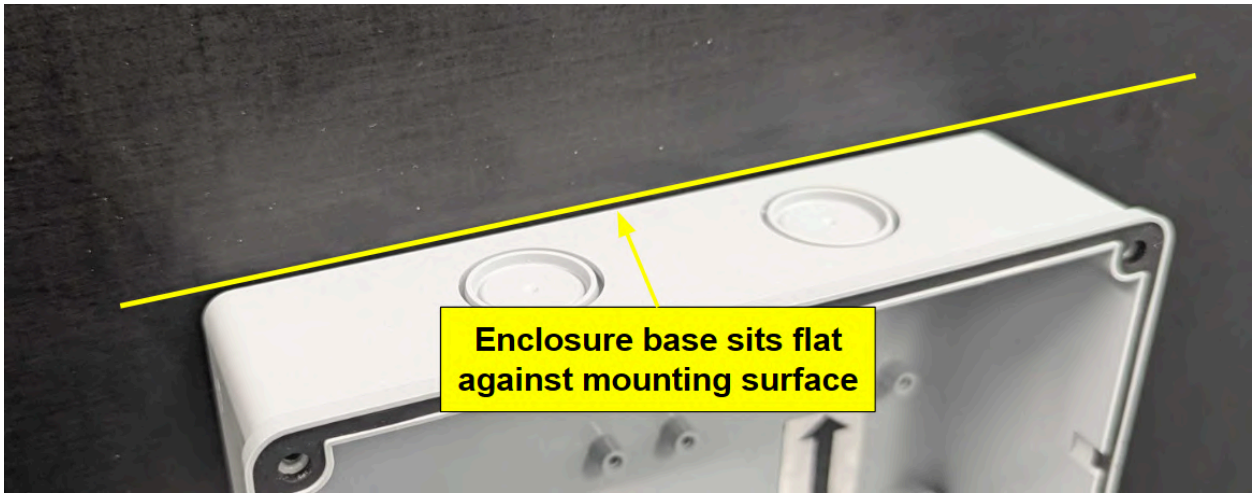
3. Cable entry into the enclosure must only be made through one of the openings indicated below:



4. Conduit glands, if used, must be sealed with PVC cement or a silicone adhesive.

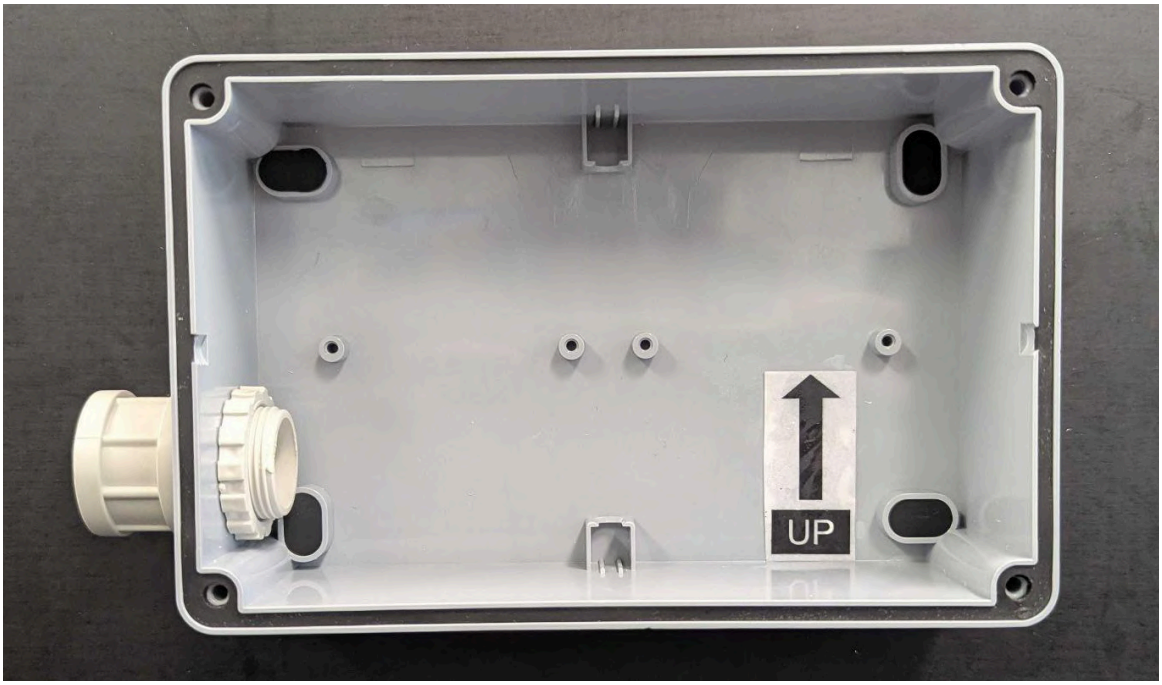



5. Ensure the enclosure base is mounted flat against the surface and that the base is not warped. If the enclosure base is warped the enclosure lid will not seal to the base correctly and the product IP rating may be compromised:



6. Install the enclosure base using the included mounting accessories (screws, rubber screw plugs):

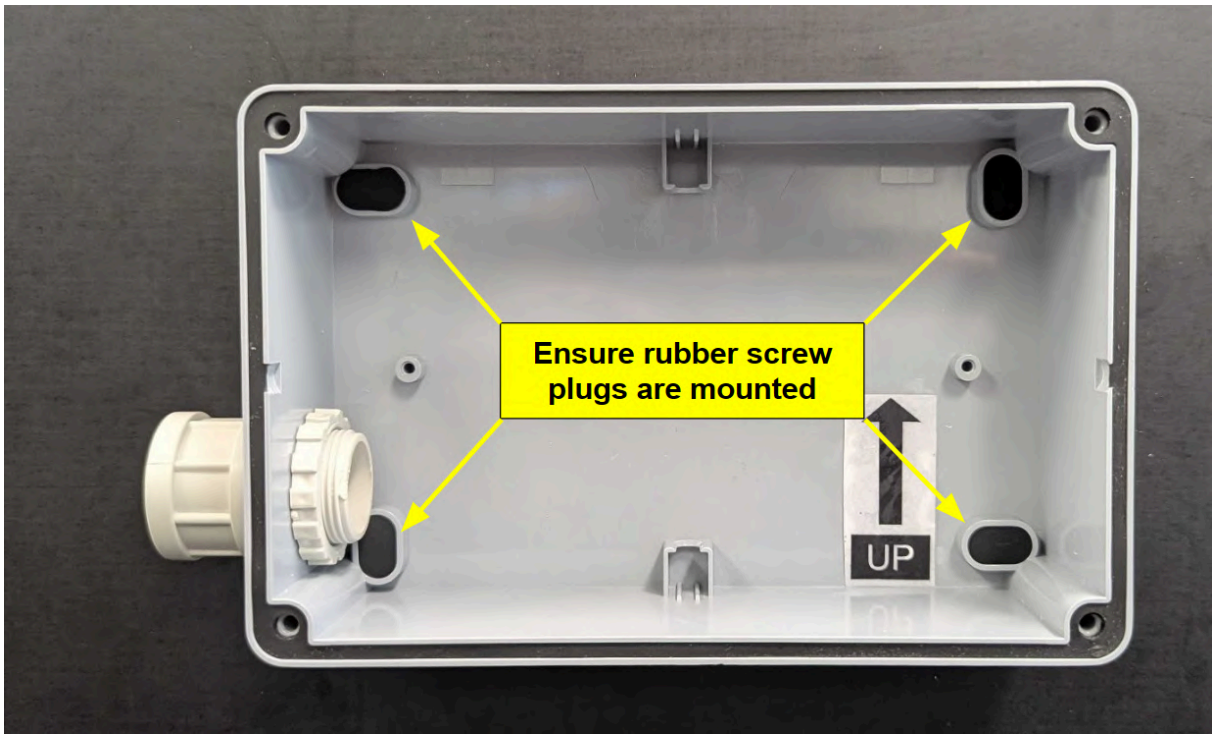
   **Note: Ensure the enclosure base is installed in the correct orientation as indicated by the internal orientation label.**



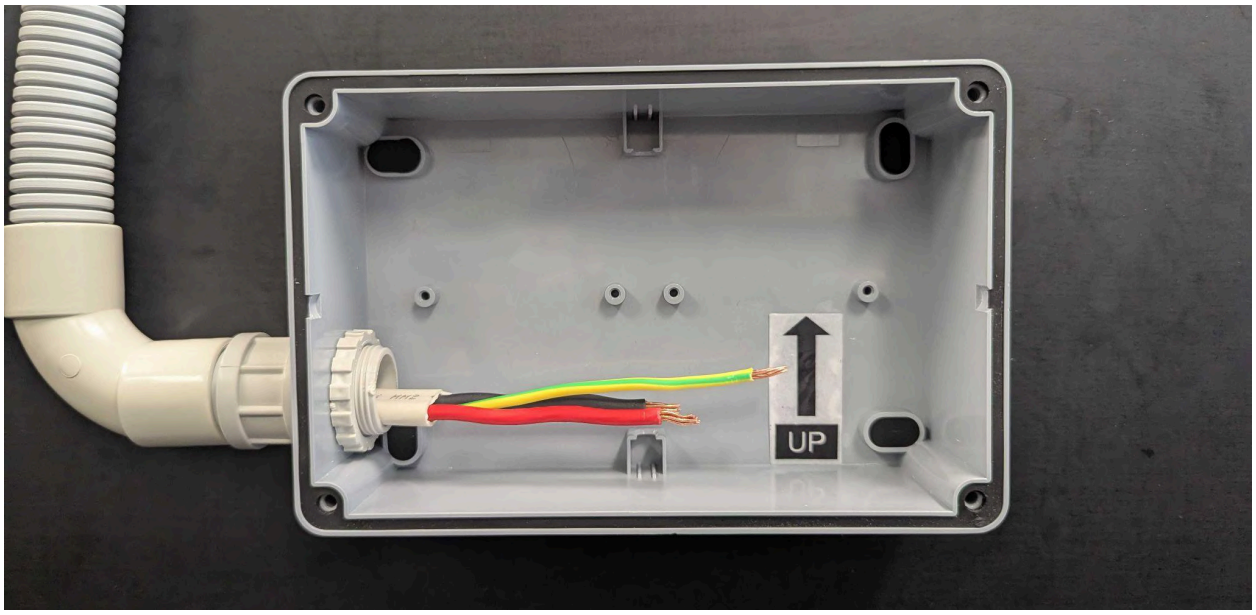



7. Seal the mounting screws with a silicone adhesive or PVC cement and insert the included rubber screw plugs:



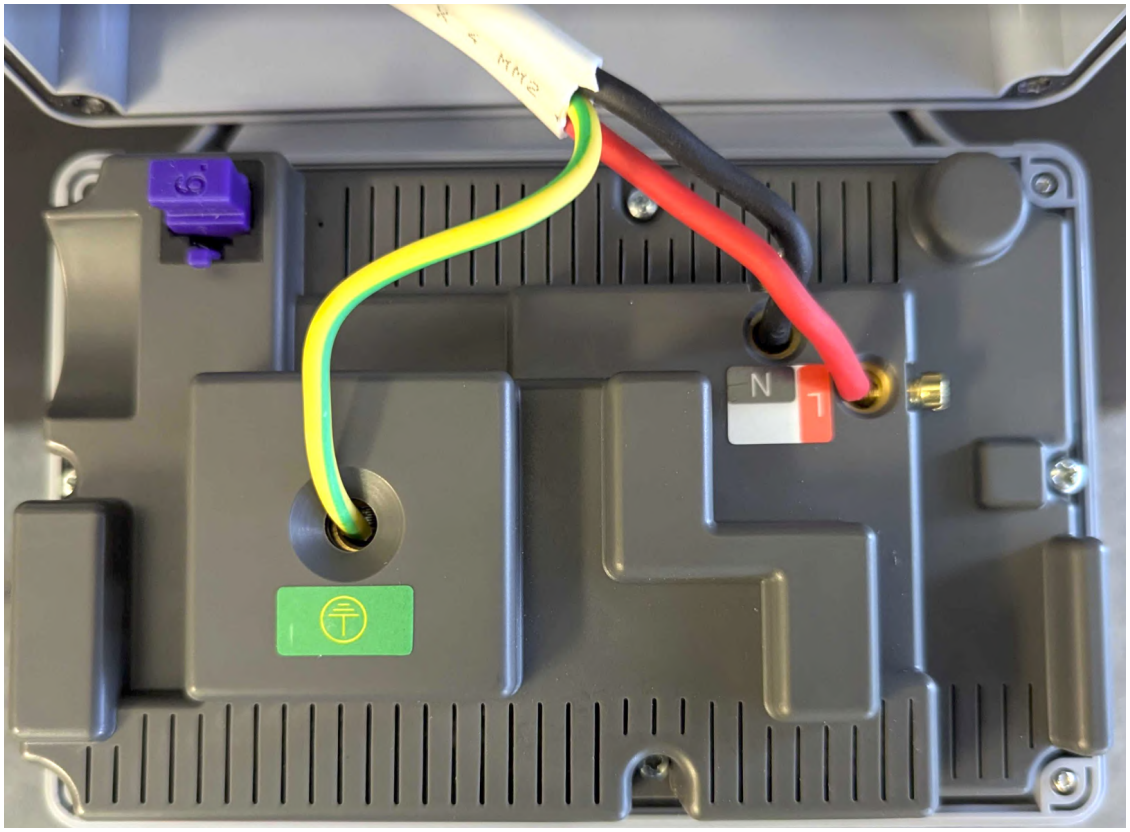


8. Install required power conduit and cables into the enclosure base:



## Connect LV Power Supply Cables

9. Connect the 240VAC supply cables to the terminal block assembly.

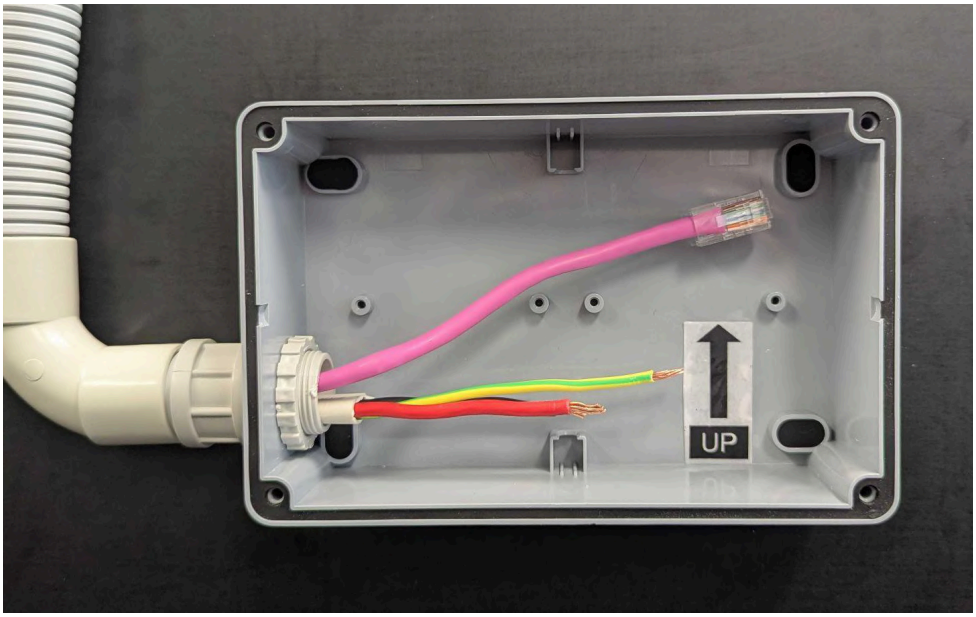


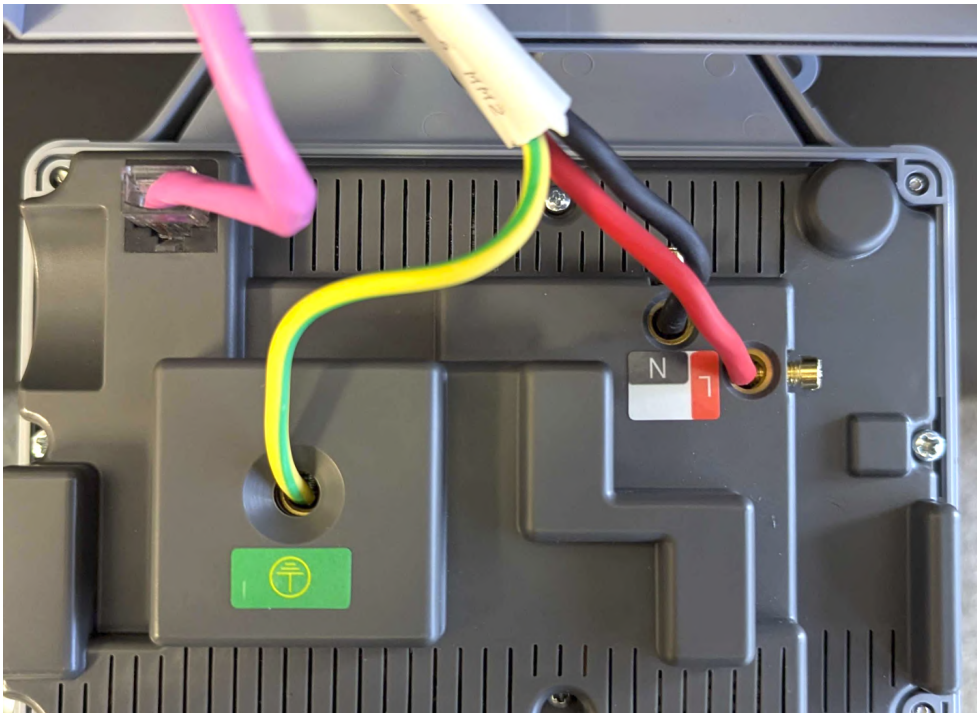

10. Each CET-H4-EV1-xA-1 must be individually protected by an upstream protection device (or a combination of devices) with:
    - Overcurrent protection with rated current (‘trip current’) of ≤**20A**
    - Earth-leakage protection (RCD) of at least Type A, with an operating current of **30mA** or less.

## Connect Ethernet Cable if Required

11. If an Ethernet connection is required, remove the RJ45 Blanking Plug and connect the Ethernet cable:

    **Note: All Ethernet cables should be double-insulated (e.g. Clipsal 5005C305B).**



# Assemble Enclosure and Perform Functional Tests

12. Secure the enclosure lid to the base using the 4 captive screws.

    Check that there are no debris or tears on the gasket prior to assembly which could compromise the seal.

    **Note: Ensure the rubber gasket is properly seated in the enclosure base and does not get pinched or fouled during assembly.**




13. Once the enclosure lid has been secured, apply power.

# Configuration and Testing

The CET-H4-EV1-xA-1 must be configured and tested to complete installation.

1. Ensure that there is an Energy Management Unit (EMU) installed at the Site with access to the Internet, and that the *inCharge* EV Outlet is able to communicate with the EMU (indicated by the green READY light on the front panel after power up).

2. Contact CET Support using the ‘Request Support’ option in the *onSite* Installer web app to commission and test the site:
   https://onsite.combined.energy/



# Reset Button

## Momentary Press and Release

Quickly pressing and releasing the Reset button will cancel any active charge session.

If the *inCharge* EV Outlet is configured for automatic authorisation and waiting for a user to indicate that the car is ready for charging (Charging LED flashing ■ **off**/■ **magenta**), quickly pressing and releasing the Reset button will indicate that the car is ready for charging.

If the *inCharge* EV Outlet is configured in GPO mode, quickly pressing and releasing the Reset button will turn the outlet on if it's off (Ready LED flashing ■ **off**/■ **green**), or off it's on (Ready LED solid ■ **green**).

All LEDs will momentarily turn ■ **off**, then turn solid ■ **yellow** once the button is ready to be released (after approximately 50ms).

## Long Hold and Release

The socket's PLC network connection can be reset by pressing and holding the reset button for 15 seconds.

All LEDs will momentarily turn ■ **off**, then turn solid ■ **yellow** (after approximately 100ms), and finally turn solid ■ **red** after 15 seconds, at which point the button can be released to reset the PLC network connection.

# Connection Status Indications

**The status of the product is shown on the READY indicator light on the front panel:**

- Solid ■ **Green** means the CET-H4-EV1-xA-1 is connected to the site EMU and is ready to use.
- Solid ■ **Cyan** means the CET-H4-EV1-xA-1 cannot connect to the site EMU and is ready to use (depend on the offline access policy of the Site).
- Solid or Flashing ■ **Yellow** or □ **White** means the CET-H4-EV1-xA-1 is temporarily unavailable for use.
- Solid ■ **Red** or ■ **Off** means the CET-H4-EV1-xA-1 is unavailable for use.

  For assistance with troubleshooting connection issues, please contact CET Support at https://onsite.combined.energy/

# Initiate a Standard Charging Session

## To Begin a Charging Session:

1. **Check the READY LED Indicator:**
   Ensure the READY LED is solid ■ **Green**.
   Note: The PLUGGED IN LED should be blinking ■ **Yellow**.

2. **Plug In:**
   Once the plug is inserted to the CET-H4-EV1-xA-1:
   - The PLUGGED IN LED will be solid ■ **Green**.
     - If the PLUGGED IN LED is instead solid ■ **Red**, remove the plug and return to step 1.
   - The AUTHORISED LED should be blinking ■ **Yellow**.

3. **Authorize the Charging Session:**
   Scan your RFID fob to authorize the session.
   - **Scan Acknowledgment:**
     - Confirmed with a short set of beeps.
     - The AUTHORISED LED will blink ■ **Green** while the charging session is being authorized.
     - You can remove your RFID fob from the scanner at this time.
   - **Successful Authorization:**

    - Confirmed with a pleasant chime.
    - The AUTHORISED LED will turn solid ■ **Green** and the charging session will begin.

- **Failed Authorization:**
    - Indicated by a sad chime.
    - The AUTHORISED LED will **blink red** for 10 seconds before returning to blinking ■ **Yellow**.