



AC Solar Warehouse

Installation and Commissioning Checklist

Enphase Energy Microinverter - Installation and Commissioning Checklist

Enphase Energy provide comprehensive installation manuals for the M250 and M215 microinverters and related equipment. We strongly recommend reviewing the following documents prior to your first installation:

- M250 and M215 Microinverter Installation and Operation Manual
- M250 and M215 Quick Install Guide
- Envoy Communications Gateway Manual
- Envoy Communications Gateway Quick Install Guide

These documents are available for download from the AC Solar Warehouse and Enphase Energy websites.

If you need any further assistance planning, installing or commissioning your Enphase system, please call AC Solar Warehouse on 1300 55 44 67 or the Enphase help line on 1800 006 374 or 03 8669 1663.

There are 6 basic steps to installing and commissioning an Enphase microinverter system. Additional information on each of these steps can be found on the following pages.

Prior to Installation

STEP 1	Update Envoy firmware	<input type="checkbox"/>
STEP 2	Register Envoy in Enlighten	<input type="checkbox"/>
STEP 3	Adjust grid profile settings if required	<input type="checkbox"/>

Installation

STEP 4	Install and power up modules and inverters	<input type="checkbox"/>
STEP 5	Install and power up Envoy	<input type="checkbox"/>

After Installation

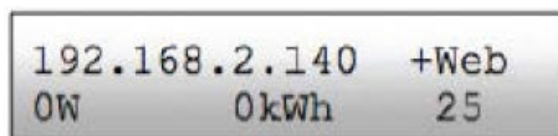
STEP 6	Finalise monitoring setup in Enlighten Manager	<input type="checkbox"/>
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Installation and Commissioning Checklist

Prior to Commencing the Installation

STEP 1 : Update the Firmware in the Envoy

- Unpack the Envoy Communications Gateway and record the serial number
- Use the power cord provided to plug it into a power point and turn it on
- Once it boots up, the display will slowly scroll through five different language options. Press and hold the button on the side of the Envoy down for 2 seconds when you see the word “English”.
- Use the Ethernet cable supplied with the Envoy to connect it directly to a router. After approximately 10 minutes the display will show the message “Upgrading...Do not Unplug”.
- It can take from 10 minutes to several hours to update the firmware depending on the speed of the internet connection. You don't need to touch anything - the update will happen completely automatically.
- When the firmware upgrade is completed the Envoy will display the default home screen which will look similar to this:



STEP 2 : Register the Envoy on Enlighten Manager

- While the Envoy is still connected to the internet...
- Log into Enlighten Manager - or if you don't have an account yet create one and then log in. To log on visit (<http://enlighten.enphaseenergy.com>)
- On the main dashboard find the Activations widget and click on “add a new system”.
- Alternatively click on the “Systems” tab at the top of the screen and then the “Activations” tab at the right of the screen and then click on “add a new system”.
- Fill in as much information as you can on the System activation page, including:
 - System details
 - Owner and local information
 - Envoy serial number and grid profile
 - Module information
- Click on “Save” at the bottom of the page.
- If you know the configuration of the array you can go in to the array builder and set up the array as it will be installed. You will not be able to assign the inverters serial numbers to the modules at this stage.

STEP 3 : Adjust Grid Profile Settings if Required

- The default grid settingd selected during the Envoy registration are as per AS4777
- If any changes are required due to local utility requirements:
 - Log directly into the Envoy by entering the IP address shown on the Envoy display into the internet browser of a computer connected to the same network as the Envoy (or plugged directly into the Envoy via an Ethernet cable).
 - Click on the “Administration” tab and enter username (admin) and password (admin), then select “Device Grid Configuration” from the menu.
 - Click on Manager profiles and then click on the existing AS4777 profile.
 - Change relevant voltage and frequency set points and then click on “Make a Copy”, and “Save Profile”.
 - Return to the main screen by clicking on “Device Grid Configuration”.
 - Select the new grid profile from the dropdown box.
 - Obtain a grid profile change token from the widget on the Enlighten Manager dashboard. You will need the Envoy serial number and Authorisation number displayed at the bottom of the “Device Grid Configuration” page.
 - Enter grid profile change token and click on “Apply Grid Profile” settings. The new grid profile will now be saved on the Envoy.

System Installation

STEP 4 : Install and Power Up the PV System

- Install the microinverters and modules
 - Do not install more than 17 microinverters per branch
 - Each branch must be protected by a maximum 20A circuit breaker
 - Ensure each branch cable is fitted with a trunk cable terminator
 - Ensure an AC Isolation point is provided adjacent to or well within sight of each array
 - Ensure all cabling is supported and protected from direct sunlight and entries into AC Isolator are via glands and/or appropriate conduit fittings.
 - Connect the DC cables from each module to the DC input of each microinverter as the modules are installed. The LED on the microinverter will flash green 6 times when the modules are first connected, even though the AC is not yet connected. (Note the LED is pointing downwards towards the roof when the microinverter is installed on a rail. A mirror may be required to be able to see the LED).
 - Install an approved Surge Diverter between active and earth at the switchboard the solar system is connected to.
 - Check that the voltage drop on main cable is less than 1%. (Cable sizing tables are available from AC Solar Warehouse).
 - Check AC Solar switchboard labels are installed.
 - Refer AC Solar Warehouse Enphase microinverter installation drawings for full details.
- Select a location to install the Envoy as close as possible to the switchboard that the PV system is connected to (max recommended distance from switchboard to the Envoy is 5 meters cable route length).

STEP 5 : Install and Power Up Envoy

Note - This process must be completed while there is sun shining on the solar modules - it cannot be carried out after the sun has gone down.

- Select a location to install the Envoy as close as possible to the switchboard that the PV system is connected to (max recommended distance from switchboard to the Envoy is 5 meters cable route length).
- The Envoy can be plugged into an existing power circuit or a dedicated circuit can be installed.
- If there are multiple phases at the site, ensure the Envoy is installed on the same phase as the solar system.
- If the system is installed across multiple phases, install a phase coupler to ensure the Envoy can communicate with inverters on all phases.
- Connect the Envoy into the customer's router with the Ethernet cable supplied or if the router is not close by use a PLC Ethernet bridge to connect the Envoy to the router.
- Turn on the Envoy and allow 10 - 30 minutes (depending on size of the system) for it to establish communications with inverters. The number of inverters shown on the bottom right hand side of the display should match with number of inverters installed on the system.
- The Envoy will automatically start scanning for inverters but a scan can also be initiated manually via the menu pressing the button on the side of the Envoy if required.
- Once communication between the inverters and the Envoy has been established the Envoy will send the grid settings to the inverters and they will begin to generate power.
- Ensure "+Web" is showing on the display, indicating that the Envoy is connected to the web and communicating with the Enphase server.
- If further configuration of the correct operation of the system is required you can log directly in to the Envoy to see the status of each inverter. To do this either plug a laptop directly into the Envoy via an Ethernet cable, or access it via a computer that is connected to the same local network. Simply enter the IP address shown on the first line of the Envoy display into an internet browser and click on the "Inventory" tab to see the details of each connected inverter.

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After Installation is Complete

STEP 6 : Finalise Monitoring Setup in Enlighten Manager

- Go into array builder and allocate inverter serial number to modules
- Complete other details as required to complete all 4 stages of the activation process
- Check that all modules are reporting and the system is operating as expected
- The final activation stage (Stage 4) won't be completed until 24 hours after the system has been verified as operating correctly. At this time the customer will automatically be sent their My Enlighten Login details.

Troubleshooting

If you have any problems at any stage of the installation there are comprehensive troubleshooting guides in the Microinverter and Envoy Installation Manuals. You can also contact AC Solar Warehouse for assistance on 1300 55 44 67 or Enphase Energy technical support on 1800 006 374 or 03 8669 1663.