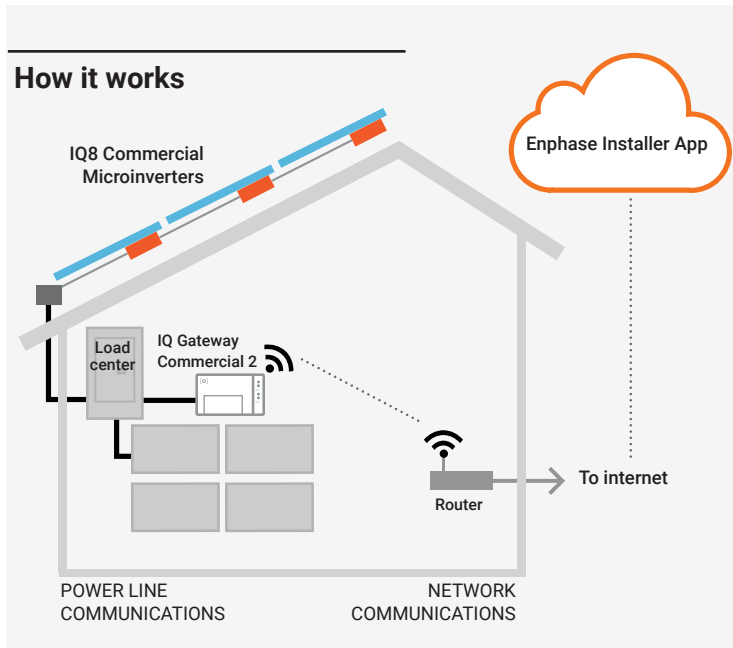


# Installing IQ Gateway Commercial 2

To install the IQ Gateway Commercial 2, read and follow all warnings and instructions in this guide. Safety warnings are listed on the back of this guide.

**IMPORTANT:** The IQ Gateway Commercial 2 should not be used with previous generation microinverters. It should only be used with IQ8 Commercial Microinverters (IQ8H-3P and IQ8P-3P).



## PREPARATION

- Download the Enphase Installer App and open it to log in to your Enphase Installer App account. With this app, you can connect to the IQ Gateway Commercial 2 to track system installation progress. To download, go to [enphase.com/installers/apps](https://enphase.com/installers/apps) or scan the QR code at right.
- Download the latest version of the software to your mobile device. To do so, in the Enphase Installer App, go to **Settings > Gateway Resources**.
- Check the box for the following items:
  - IQ Gateway Commercial 2 (look for the IQ Gateway Commercial 2 logo)
  - Three 400 A, solid-core production metering current transformers (CTs). The internal aperture of the solid core Production CTs measures 43 mm and can support cables up to a maximum size of 1000 KCMil conductors.
  - DIN rail for mounting
  - IQ Gateway Commercial 2 Quick Install Guide* (this document)
- If you plan to do consumption metering, make sure you have three split-



**NOTE:** The IQ Gateway Commercial 2 only supports CT-600-SPLIT for consumption monitoring and should not be used with any other type of CT. The 600 A Consumption CTs fit conductors up to a maximum size of 300 KCMil. You can use up to two parallel-connected Consumption CTs to monitor up to two conductors.

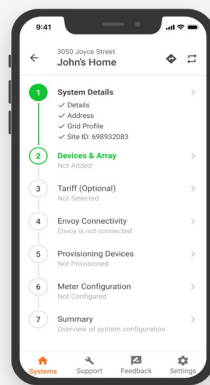
- core consumption metering CTs (order CT-600-SPLIT).
- Check that there is enough space in the load center to install CTs. Do not install CTs where they exceed 75% of the wiring space of any cross-sectional area within the load center.
- Install the IQ Gateway Commercial 2 in an NRTL Certified, NEMA type 3R (or better) enclosure with conduit attachment when installing outdoors. Do not drill holes on the top of the enclosure or anywhere that allows moisture ingress. Metallic enclosures may impair Wi-Fi signal strength. Use an appropriately rated enclosure if installing indoors.
- Decide how to connect the IQ Gateway Commercial 2 to the internet: Use Wi-Fi, an Enphase Mobile Connect modem, or Ethernet. Then, make sure you have the following optional items if needed:
  - Enphase Mobile Connect modem. Order Enphase model CELLMODEM-M1-06-SP-05 or CELLMODEM-M1-06-AT-05.
  - Ethernet over power line communication (PLC) bridge with Ethernet cables (order EPLC-01). You must use a ferrite bead on the Ethernet cable (we recommend Fair-Rite 0431167281).
  - Ethernet cable [802.3, Cat5E or Cat6, unshielded twisted pair (UTP)]. Do not use shielded twisted pair (STP) cable. You must use a ferrite bead on the Ethernet cable (we recommend Fair-Rite 0431167281).
- Create a paper installation map to record device serial numbers and positions in the array. You will scan this map later using the Enphase Installer App and your mobile device.
  - As you do with the microinverters, peel the removable label from the bottom of the IQ Gateway Commercial 2 and affix it to the paper installation map.
  - Always keep a copy of the installation map for your records.
- Installation of the IQ Gateway Commercial 2 has two parts. To ensure successful device detection, complete Part 2 after installing any Enphase IQ8 Commercial Microinverters.

**NOTE:** If needed, you can find an installation map at the back of the Enphase IQ8 Commercial Microinverter Quick Install Guide.

## IQ Gateway Commercial 2 display and controls

Track system installation progress with the Enphase Installer App. The LEDs on the IQ Gateway Commercial 2 are solid green when a function is enabled or performing as expected, flashing when an operation is in progress, or solid red when troubleshooting with Enphase Installer App is required. For a legend of all LED states, see [Troubleshooting](#).

- Network communications LED**  
Green when IQ Gateway Commercial 2 is connected to Enphase Installer App.
- AP mode LED**  
Green when IQ Gateway's AP Wi-Fi network is available.
- AP mode button**  
Press to enable IQ Gateway's AP Mode for connecting with a mobile device. Hold for 5 seconds to start WPS connection to a router.
- Power production LED**  
Green when microinverters are producing power.
- Device communications LED**  
Green when devices are communicating with IQ Gateway Commercial 2.
- Device scan button**  
Press to start/stop 15 minute scan for devices over the power line.



Enphase Installer App



## INSTALLATION – Part 1

It is a best practice to complete Installation Part 1 before installing Enphase microinverters.

For steps 2 and 3, refer to the wiring diagram on the next page.

### 1 Choose a location for the IQ Gateway Commercial 2



**WARNING: Risk of equipment damage. When installing the IQ Gateway Commercial 2 in an enclosure, choose area for installation where ambient temperature does not exceed 46°C (115°F).**

- A) Install the IQ Gateway Commercial 2 near the main load center or PCC (point of common coupling) and consider the length of the Production CT leads (5 feet) when choosing the location. Do not extend the leads of the Production CTs.
- B) Install the IQ Gateway Commercial 2 in a protected dry space in an NRTL Certified, NEMA type 3R (or better) enclosure with conduit attachment. Use an appropriately rated enclosure if hard wiring the IQ Gateway Commercial 2 indoors.

**NOTE:** Metallic enclosures may impair Wi-Fi signal strength.

- C) Mount the IQ Gateway horizontally using the included DIN rail.

### 2 Wire the IQ Gateway Commercial 2 for power and metering

The IQ Gateway Commercial 2 uses terminal blocks for power and metering connections. Refer to the wiring diagram on the following page when performing this step.

You must install three solid-core current transformers (CTs) for production metering. Consumption monitoring is optional and requires that you order and install three additional split-core CTs. Use a protected route in conduit for the CT wires from the main load center to the IQ Gateway Commercial 2. The Consumption CT leads are 13 feet long. If you need to extend the leads, refer to the *IQ Gateway Commercial 2 Installation and Operation Manual* at [enphase.com/support](http://enphase.com/support). Do not extend the leads of the Production CT.



**DANGER! Risk of electric shock. Always de-energize circuits before wiring for power and CTs.**

**DANGER! Risk of electrocution! Do not install CTs when current is flowing in the sensed circuit. Always install CT wires in the terminal blocks before energizing the sensed circuit.**

**NOTE:** When installing CTs, it is important to match CT and sense voltage phases. Be sure to consistently identify the three AC lines at three points: the main load center feed, the IQ Gateway, and the solar production circuit breaker. Wire colors (typically black, red, and blue) may not always consistently identify L1, L2, and L3. If in doubt, use a multimeter to check.

**NOTE:** Because of variance in load center design and main power feed, there may not always be enough space to install consumption metering CTs. See our technical brief, *Assessing a Site for Installing Consumption CTs*, at [enphase.com/support](http://enphase.com/support).

- A) Before running the CT wires through the conduit, use colored tape to mark each of the CTs and the free ends of its wires, marking each with a different color. You can run multiple CT wires through a single conduit.
- B) Wire the IQ Gateway Commercial 2 for power:
  - Use a three-pole circuit breaker of up to 20 A (maximum) for the supply wiring.
  - Make sure supply wiring is 14 AWG or larger copper rated at 75°C or better.
  - Use a screwdriver to loosen the screw on the terminal block door and open the door.
  - Flip open the terminal block door and wire the line and neutral conductors as shown: Connect Line 1 to L1, Line 2 to L2, Line 3 to L3, and Neutral to N. Tighten to 10.5 in-lbs (1.2 N m).

**NOTE:** Only run active conductors of the same phase through each CT. Each CT can monitor multiple active conductors.

- C) Install the Production CTs on active phases as required:
  - Locate the arrow on the CT label.
  - **To monitor production on Line 1:**
    - Connect the white wire to the white "P1" terminal and the blue wire to the blue "P1" terminal.
    - Pass Line 1 of the solar production circuit through the CT with the arrow pointing toward the load (away from the solar array).
  - **To monitor production on Line 2:**
    - Connect the white wire to the white "P2" terminal and the blue wire to the blue "P2" terminal.
    - Pass Line 2 of the solar production circuit through the CT with the arrow pointing toward the load (away from the solar array).
  - **To monitor production on Line 3:**
    - Connect the white wire to the white "P3" terminal and the blue wire to the blue "P3" terminal.
    - Pass Line 3 of the solar production circuit through the CT with the arrow pointing toward the load (away from the solar array).
  - Tighten all connections to 5 in-lbs (0.6 N m).
- D) Install the Consumption CTs on active phases as required:
  - Locate the arrow on the CT label.
  - Make sure that the AC mains wire(s) are de-energized until you have secured the CT wires in the terminal blocks.
  - **To monitor consumption on Line 1:**
    - Connect the white wire to the white "C1" and the blue wire to the blue "C1" terminal.
    - Clamp the CT on the main supply Line 1. When the Consumption CT is on Line 1 conductor, the arrow must point toward the load (away from the grid).
  - **To monitor consumption on Line 2:**
    - Connect the white wire to the white "C2" terminal and the blue wire to the blue "C2" terminal.
    - Clamp the CT on the main supply Line 2. When the Consumption CT is on Line 2 conductor, the arrow must point toward the load (away from the grid).
  - **To monitor consumption on Line 3:**
    - Connect the white wire to the white "C3" terminal and the blue wire to the blue "C3" terminal.
    - Clamp the CT on the main supply Line 3. When the Consumption CT is on Line 3 conductor, the arrow must point toward the load (away from the grid).
  - Tighten all connections to 5 in-lbs (0.6 N m).


### 3 Energize and update the IQ Gateway Commercial 2

- A) Close the terminal block door, and secure it with the screw.
- B) Turn on the circuit feeding the IQ Gateway Commercial 2.

The update may take up to 20 minutes. The IQ Gateway reboots several times during the update, and the LEDs light up in varied sequences until the update is complete.



**WARNING: Do not remove power from the IQ Gateway Commercial 2 during the software update.**

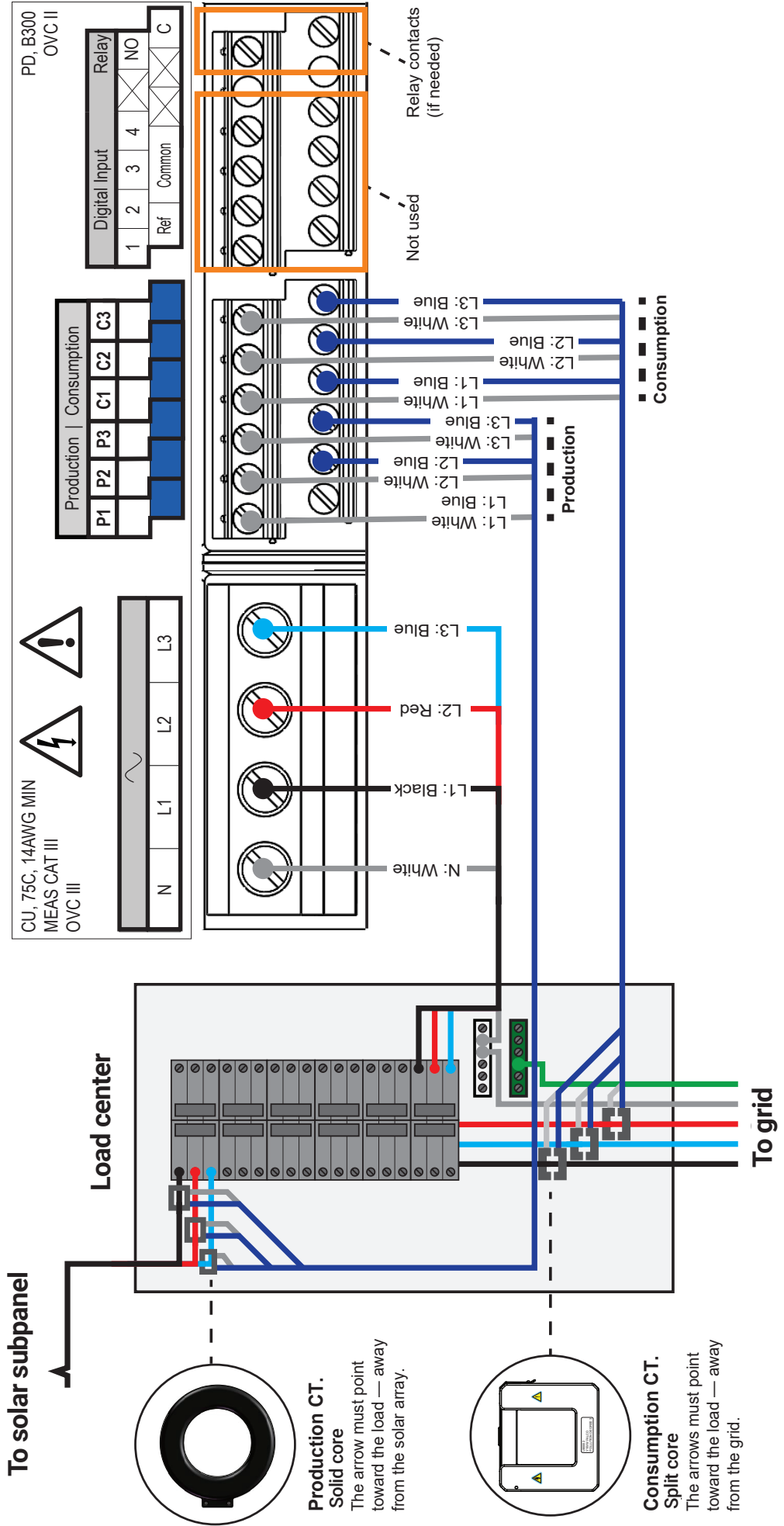
All four LEDs flash red during boot-up (approximately 3 minutes). When boot-up is complete, the Device Communications LED  lights solid red, indicating that devices are not yet detected.

### 4 Launch the Enphase Installer App and start system activation

- A) Launch the Enphase Installer App on your tablet or mobile device. To create an activation for a new system, tap the Plus button on the bottom right corner of the screen.
- B) Tap **System Details** to enter the required information.
- C) Complete the system activation in the Enphase Installer App by filling in the details.

The "System created successfully" message will display at the bottom of your screen, and system details will appear now as complete.

# IQ Gateway Commercial 2 wiring



## INSTALLATION — Part 2

Once the update is finished and the PV system is installed, the IQ Gateway is ready for Installation Part 2. You must complete Installation Part 2 after installing the PV system.

### 5 Adding devices and array to the system

This step is used to enter the unique serial numbers of all devices present on-site. It is recommended that you enter the serial number by scanning the barcode/QR code using the Enphase Installer App.

- A) Tap **Devices and Array** on the home page.
- B) Add the total number of devices to be installed on your system.
- C) Scan device serial numbers through bar code or QR code in respective device sections. In addition to using your device's camera to scan serial numbers, you can enter the serial numbers manually. Manual entry should be used only when you are not able to scan the bar code or QR code of any device.
- D) After scanning microinverters, you can use Array Builder to assign your scanned microinverters to an array or build an array manually. This step can also be completed post commissioning.

### 6 Setting the tariff details (optional)

This step is used to enter the electricity rate structure of the utility.

- A) Tap **Tariff & Storage Configuration** on the home page.
- B) Subsequently tap on the **Tariff Editor** to enter the electricity import and export rate. Ensure that the mobile device or tablet is connected to internet to complete this step.

### 7 IQ Gateway connectivity

This step is used to establish/monitor IQ Gateway Commercial 2 connectivity to Enphase Cloud and to the Enphase Installer App. You can also update IQ Gateway Commercial 2 in this step if it is needed for successful commissioning.

- A) Tap **IQ Gateway Connectivity** on the Enphase Installer App home page.
- B) If the **IQ Gateway** icon and **Enphase Installer App** icon (phone icon) are not connected in the **IQ Gateway Connectivity** page, follow the below steps:
  - On the IQ Gateway Commercial 2, press the AP mode button (first button from the top) for about one second. The LED will light solid green.
  - Go to your phone's settings and connect to IQ Gateway's Wi-Fi network. The IQ Gateway Wi-Fi network will appear as "Envoy\_XXXXX" where XXXXX are the last 6 digits of your specific IQ Gateway's serial number.
  - Return to the Enphase Installer App **IQ Gateway Connectivity** page and connect.
- C) If the **IQ Gateway** icon and **Enphase Cloud** icon (cloud icon) are not connected in the **IQ Gateway Connectivity** page, follow these steps:
  - The IQ Gateway can connect to Enphase Cloud through either Wi-Fi, Ethernet, or cellular.
  - If Wi-Fi is selected, input the username and password for the home/office Wi-Fi.
  - If connecting using Ethernet, simply plug the cable into the IQ Gateway.

### 8 Provisioning the devices

To provision your devices, the Enphase Installer App should be connected to IQ Gateway via AP mode as described in the IQ Gateway Connectivity section.

- A) If a green checkmark displays between the IQ Gateway and Enphase Installer App, tap **START PROVISIONING DEVICES**. The Provisioning Devices screen displays the steps being executed by the Enphase Installer App. The Enphase Installer App verifies and updates the grid profile in IQ Gateway and provisions all the connected devices.
- B) When provisioning is complete, tap **DONE**.

### 9 Verify meter configuration

The production meter can be configured as per the following steps:

- A) Tap **Meter Configuration** on the installer app home page and, subsequently, tap **Production Meter** to start configuring the production meter. A pop-up notification appears asking you to follow the meter wizard to verify your CT configuration. Select **Yes** to proceed.
- B) Tap **Enable production meter** to finish configuration of production meter.

The consumption meter can be configured as per the following steps:

- A) Tap on the **Meter Configuration** on the installer app home page and, subsequently, tap on the **Consumption Meter** to start configuring the consumption meter. A pop-up notification appears asking you to follow the meter wizard to verify your CT configuration. Select **Yes** to proceed.
- B) Tap **Enable consumption meter** to finish the configuration of consumption meter.







### 10 Send summary report and complete homeowner walkthrough

This step is used to download the summary report of all the devices installed and reporting to IQ Gateway. The installer needs to disconnect AP mode and ensure connectivity to the internet at this stage. You can share this report using email, text, or airdrop. It contains details of each provisioned device and the commissioned status of the system


- A) Tap **Summary** on the Enphase Installer App home page. The system report is displayed on the screen, which consists of list of devices, their serial numbers, their last reports, and information about the grid profile applied to the devices.
- B) Tap **SHARE** on the top right corner to share the report as needed.
- C) Open Homeowner Walkthrough and discuss all listed points with the homeowner. You can also show the videos embedded in the links to the homeowner for a better experience.

# TROUBLESHOOTING

## a LED overview

LED	State	Description
All	Flashing red in unison	The IQ Gateway Commercial 2 is booting up
	Flashing green sequentially	Software upgrade in progress
 Network communications	Solid green	Communicating with Enphase Installer App
	Flashing green	WPS connection in progress or the IQ Gateway Commercial 2 is attempting to connect to Enphase Installer App
	Solid red	Local network connection only
 AP mode	Off	No network connection
	Solid green	AP mode enabled: IQ Gateway Commercial 2 Wi-Fi network available
 Power production	Off	AP mode disabled: IQ Gateway Commercial 2 Wi-Fi network unavailable
	Solid green	All communicating microinverters are producing
	Flashing green	Microinverter upgrade in progress
 Device communications	Solid red	At least one microinverter is not producing
	Off	Microinverters are not producing or communicating (low light or nighttime)
 Device communications	Solid green	All devices are communicating
	Flashing green	Device scan in progress
	Solid red	At least one device is not communicating
 Device communications	Off	Devices are not communicating (low light or nighttime)


## b Device detection issues

If the Device communications LED  lights solid red, it may be a result of low light levels. If there is not enough sunlight to power up the microinverters, they cannot communicate with the IQ Gateway.

If there is sufficient daylight for the microinverters to power up, the issue may be that the IQ Gateway Commercial 2 is having difficulty communicating over the power lines. To troubleshoot this issue:

- Check the Enphase Installer App to see which devices are not communicating.
- Check that the circuit breaker(s) for the PV array are in the "ON" position.
- Verify that the PV modules are connected to the microinverters.
- Verify the PV module DC voltage is within the allowable range for the microinverter.

## c Power production issues

If the Power production LED  lights solid red, check the Enphase Installer App to see which microinverters are not producing:

- If none of the microinverters are producing power, there may be a grid or wiring issue. First, verify that there is proper input voltage and frequency from the grid. Next, check the breaker and wiring, starting at the load center.
- If all the non-productive microinverters are on the same branch, check the breaker and wiring starting at the junction box for the affected branch.
- If only one or scattered microinverters are not producing power, first check to see that the AC connectors are fully connected. Next, check that each module is providing the required startup voltage for the microinverter (22 V). A PV module that is failing or that is undersized may not generate enough power for AC conversion.

## d Internet connection issues

If you are using Wi-Fi and the Network communications LED  remains off:

- The WPS connection window may have timed out. Retry the connection steps.
- Make sure that the broadband router is operational by checking that other devices at the site can access the network.
- Be aware that metal enclosures or obstructions impede wireless communication.
- If you cannot see your router or access point in the list on the IQ Gateway or cannot maintain a connection, it may be necessary to add a wireless repeater to extend the network range.

If you are using Wi-Fi and the Network communications LED lights solid red, make sure that the broadband router is connected to the internet by checking that other devices at the site can access the internet.




If you are using the Enphase Mobile Connect modem and the Network communications LED remains off or lights solid red, see Troubleshooting in the Enphase Mobile Connect Installation Guide.

For any connection method, you can troubleshoot network issues with the Enphase Installer App by tapping the **Network** button, then **Diagnostic Tools**.
















If you replace the broadband router, configure the IQ Gateway Commercial 2 Wi-Fi settings for the new Wireless Network Name (SSID) and password, or use the WPS function.

# SAFETY

## Safety and advisory symbols

	<b>DANGER</b> : This indicates a hazardous situation, which, if not avoided, will result in death or serious injury.
	<b>WARNING</b> : This indicates a situation where failure to follow instructions may be a safety hazard or cause equipment malfunction. Use extreme caution and follow instructions carefully.
	<b>NOTE</b> : This indicates information particularly important for optimal system operation. Follow instructions carefully.

## Safety instructions

	<b>DANGER</b> : Risk of electric shock. Risk of fire. Do not attempt to repair the IQ Gateway Commercial 2; it contains no user-serviceable parts. Tampering with or opening the IQ Gateway Commercial 2 will void the warranty. Warranty void if cover removed. If the IQ Gateway Commercial 2 fails, contact Enphase Customer Support for assistance ( <a href="https://enphase.com/support/">enphase.com/support/</a> ).
	<b>DANGER</b> : Risk of electric shock. Always open or disconnect circuit from power-distribution system (or service) of building before installing or servicing current transformers (CTs).
	<b>DANGER</b> : Risk of electrocution! Do not install CTs when current flowing in the sensed circuit. Always install CT wires in the terminal blocks before energizing the sensed circuit.
	<b>DANGER</b> : Risk of electric shock. Do not use Enphase equipment in a manner not specified by the manufacturer. Doing so may cause death or injury to persons, or damage to equipment.
	<b>DANGER</b> : Risk of electric shock. Be aware that installation of this equipment includes risk of electric shock. Always de-energize the load center before beginning wiring.
	<b>DANGER</b> : Risk of electric shock. Risk of fire. Only qualified personnel should troubleshoot, install, or replace the IQ Gateway Commercial 2.
	<b>DANGER</b> : Risk of electric shock. Risk of fire. Do not wire unused terminals or terminal blocks on the IQ Gateway Commercial 2.
	<b>WARNING</b> : Before installing or using the IQ Gateway Commercial 2, read all instructions and cautionary markings in the technical description and on the IQ Gateway Commercial 2.
	<b>WARNING</b> : Risk of equipment damage. If installing the IQ Gateway Commercial 2 in an enclosure, choose area for installation where ambient temperature does not exceed 46°C (115°F).
	<b>NOTE</b> : Do not install the CTs in a panel where they exceed 75% of the wiring space of any cross-sectional area within the panel, or refer to local standards for guidance.
	<b>NOTE</b> : Do not install CTs in an area where they will block ventilation openings, or in area of breaker arc venting.
	<b>NOTE</b> : The CTs are not suitable for Class 2 wiring methods and not intended for connection to Class 2 equipment.
	<b>NOTE</b> : Secure CT and route conductors so that they do not directly contact live terminals or bus.
	<b>NOTE</b> : Perform all electrical installations in accordance with all national and local electrical codes.
	<b>NOTE</b> : To ensure optimal reliability and to meet warranty requirements, the IQ Gateway Commercial 2 must be installed according to the instructions in this guide.

**FCC Statement:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, you are encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and the receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.
- Changes or modifications not expressly approved by the party responsible for compliance may void the user's authority to operate the equipment.

This Class B digital apparatus complies with Industry Canada ICES-003.

### NOTE:

Operation of this equipment is subject to the following two conditions:

- 1) This equipment or device may not cause harmful interference and,
- 2) This equipment or device must accept any interference, including interference that may cause undesired operation. IFT Approval Certificate Number: ENENEN23-32519.

## Revision history

REVISION	DATE	DESCRIPTION
140-00187-05	October 2023	Initial release
Previous releases		